THE CPAP STUDY GUIDE TO VCE ECONOMICS

PART 1 (Unit 3)

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Romeo Salla
Josh Verlin

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ABOUT THE AUTHORS

Romeo Salla completed Honours and Masters degrees in Commerce (Economics major) at the University of Melbourne before moving to Canberra to work as an Economist with the Commonwealth Department of Treasury. After a few years he was promoted within the federal bureaucracy to the position of Senior Economist with the Industry Commission (now Productivity Commission). Since 1996 he has been employed as a Senior Teacher and Head of Faculty at large private schools in Melbourne, teaching VCE and IB Economics, as well as working more widely in Economics education. Romeo has held positions of responsibility with the Victorian Curriculum and Assessment Authority (VCAA) as an assessor of final examinations, including as Chief Assessor, and is also the founder of the website www.economicstutor.com.au. He is also a co-author of the CPAP Study Guide to VCE Economics and co-author of Economics from the Ground Up (CPAP). Romeo regularly presents to Economics teachers and students on behalf of the VCTA and CPAP and is a prolific writer of assessment tasks and practice examinations. He has also developed the popular smartphone App (Economics Tutor), containing 1000+ multiple choice and short answer questions..

Josh Verlin completed a Bachelor of Commerce (Finance and Economics majors) before starting a career in finance in the midst of the Global Financial Crisis. He worked as a financial advisor and in business development roles before retraining to become a teacher in 2014. He currently works at McKinnon Secondary College where he teaches VCE Economics and VCE Business Management. Josh is a lover of all things economics and finance and is a self described 'economics nerd'. He currently contributes to the Victorian Commercial Teachers Association publication (COMPAK), recently sat on the advisory panel for the new VCE Economics study design and assesses VCE Economics exams for the VCAA. He is also a co-writer of the Unit 1 and 2 CPAP Economics practice examinations and posts regular economics videos to Youtube for VCE students.

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COMMERCE PRESENTATIONS AND PUBLICATIONS
206/1 Queens Rd
Melbourne Vic 3001
TEL: (03) 9866 2289
Fax: (03) 9005 2717
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The Unit 3 Study Design

Australia's living standards

The Australian economy is constantly evolving. The main instrument for allocating resources is the market, but government also plays a significant role in resource allocation. In this unit students investigate the role of the market in allocating resources and examine the factors that affect the price and quantity traded for a range of goods and services. Students develop an understanding of the key measures of efficiency and how market systems might result in efficient outcomes. Students consider contemporary issues to explain the need for government intervention in markets and why markets might fail to maximise society's living standards. As part of a balanced examination, students also consider unintended consequences of government intervention in the market.

Students develop an understanding of the macroeconomy. They investigate the factors that affect the level of aggregate demand and aggregate supply in the economy and apply theories to explain how changes in these variables might affect achievement of domestic macroeconomic goals and living standards. Students assess the extent to which the Australian economy has achieved these macroeconomic goals during the past two years.

Australia's living standards depend, in part, on strong economic relationships with its major trading partners. Students investigate the importance of international economic relationships and the effect of these on Australian living standards. Students analyse how international transactions are recorded, and examine how economic factors might affect the value of the exchange rate, the terms of trade and Australia's international competitiveness. Students also analyse how changes in the value of the exchange rate, the terms of trade and international competitiveness affect the domestic macroeconomic goals.

Area of Study 1
An introduction to microeconomics: the market system, resource allocation and government intervention

In this area of study students investigate the role of the market in addressing the key economic questions of what and how much to produce, how to produce and for whom to produce. Students consider the effects of decisions made by consumers and businesses on what goods and services are produced, the quantities in which they are produced, the way they are produced and to whom they are distributed. Students investigate the key factors that affect the level of demand and supply in markets and how these might lead to changing prices, as well as the movement of land, labour and capital resources to those areas of production that generate the most value for society. Students use models to make predictions and consider the role of markets in achieving economic efficiency. They discuss instances where the market fails to allocate resources efficiently and evaluate whether government intervention leads to a more efficient allocation of resources in terms of maximising society's living standards.

Outcome 1
On completion of this unit the student should be able to analyse how markets operate to allocate resources and evaluate the role of markets and government intervention in achieving efficient outcomes.

The Key knowledge includes:

1. the concept of relative scarcity, including needs, wants, resources, opportunity cost and the production possibility frontier (PPF) model, and the three basic economic questions
2. the meaning and significance of economic efficiency, including allocative efficiency, productive efficiency, dynamic efficiency and intertemporal efficiency and their relationship to the PPF model
3. the conditions for a free and perfectly competitive market
4. the law of demand and the theory of the law of demand, including the income effect and the substitution effect
5. the demand curve, including movements along and shifts of the demand curve
6. non-price factors likely to affect demand and the position of the demand curve, including changes in disposable income, the prices of substitutes and complements, preferences and tastes, interest rates, population demographics and consumer confidence
7. the law of supply and the theory of the law of supply, including the profit motive
8. the supply curve, including movements along and shifts of the supply curve
9. non-price factors likely to affect supply and the position of the supply curve, including changes in the costs of production, number of suppliers, technology, productivity and climatic conditions
10. the effects of changes in supply and demand on equilibrium prices and quantity traded
11. the meaning and significance of price elasticity of demand and supply
12. factors affecting price elasticity of demand, including degree of necessity, availability of substitutes, proportion of income and time
13. factors affecting price elasticity of supply, including spare capacity, production period and durability of goods
14. the role of relative prices in the allocation of resources
15. the role of free and competitive markets in promoting an efficient allocation of resources and improved living standards
16. types of market failure, including public goods, externalities, asymmetric information and common access resources
17. the role and effect of indirect taxation, subsidies, regulations, advertising and direct provision as forms of government intervention in the market to address market failure
18. one example of a government intervention in markets that unintentionally leads to a decrease in one of allocative, productive, dynamic or intertemporal efficiency.

Area of Study 2
Domestic macroeconomic goals

In this area of study students investigate Australia's domestic macroeconomic goals supporting living standards, including strong and sustainable economic growth, full employment and low and stable inflation (price stability). Using the five-sector circular flow model of the macroeconomy, students consider the role of key economic agents and examine the factors that affect the business cycle. Students examine how each of the goals is measured and the potential consequences associated with the level of achievement of each goal. Students identify and analyse contemporary aggregate demand and aggregate supply factors that may have influenced the level of achievement of domestic macroeconomic goals over the past two years and consider how the level of achievement of the goals may affect living standards.

Outcome 2
On completion of this unit the student should be able to analyse key contemporary factors that may have affected domestic macroeconomic goals over the past two years, evaluate the extent to which the goals have been achieved and discuss the effects on living standards.

The purpose of economic activity:

The nature and purpose of economic activity

19. the difference between material and non-material living standards and factors that may affect living standards, including access to goods and services, environmental quality, physical and mental health, crime rates and literacy rates
20. the five-sector circular flow model of income, including the role of households, businesses, government, financial institutions and the external sector in an open contemporary macroeconomy
21. the business cycle and its causes
22. the meaning and importance of aggregate demand and the factors that may affect the level of aggregate demand in the economy, including disposable income, interest rates, consumer confidence, business confidence, the exchange rate and rates of economic growth overseas
23. the meaning and importance of aggregate supply and the factors that may affect the level of aggregate supply in the economy, including quantity and quality of the factors of production, costs of production, technological change, productivity growth, exchange rates and climatic conditions, and other events including government regulations and disruptions to international supply chains

The domestic macroeconomic goals

24. the meaning of the goal of strong and sustainable economic growth
25. measurement of the rate of economic growth using growth in real Gross Domestic Product (GDP)
26. consequences of not achieving the goal of strong and sustainable economic growth and its effect on living standards, including environmental degradation, external pressures, high inflation if growth is too high, and high unemployment if growth is too low
27. the meaning of the goal of full employment, including the NAIRU (natural rate of unemployment)
28. classifications within the labour force, including employed, unemployed, hidden unemployed, long-term unemployed, underemployed and frictional unemployment
29. measurement of the labour force, including the participation rate, the unemployment rate and the labour force under-utilisation rate
30. the difference between cyclical and structural unemployment
31. the consequences of not achieving the goal of full employment and its effect on living standards, including the impact on GDP and tax revenue if unemployment is too high and the effects on inflation if unemployment is too low
32. the meaning of the goal of low and stable inflation (price stability)
33. the distinction between inflation, disinflation and deflation
34. measurement of the inflation rate using the Consumer Price Index (CPI), including the difference between the headline and underlying (core) rate of inflation
35. causes of inflation, including demand inflation and cost inflation
36. consequences of not achieving the goal of low and stable inflation (price stability) and its effect on living standards, including erosion of purchasing power, development of a wage-price spiral, distortion of spending and investment decisions, lower returns on investment, loss of international competitiveness if it is too high, and delayed consumption and unemployment if it is too low
37. aggregate demand and aggregate supply factors that have affected the level of achievement or non- achievement of the goals of strong and sustainable economic growth, full employment and low and stable inflation over the past two years.

Area of Study 3

Australia and the international economy

Australia is an open economy. Students examine the reasons for international trade, such as the exchange of goods and services and the movement of savings and investment capital, and how these transactions might affect living standards. Students describe how international transactions are recorded. Students analyse the effects of movements in the exchange rate, the terms of trade and changes in international competitiveness on the achievement of the domestic macroeconomic goals and living standards.

Outcome 3

On completion of this unit the student should be able to analyse the factors that may affect the exchange rate, terms of trade and Australia's international competitiveness, and discuss their impact on Australia's international transactions and the achievement of the domestic macroeconomic goals and living standards.

The Key knowledge includes:

38. the gains from international trade, including lower prices, greater choice, access to resources, economies of scale, and increased competition and efficiency
39. the balance of payments and its components
40. cyclical and structural influences on Australia's current account balance
41. the composition and cause of net foreign debt and net foreign equities
42. the exchange rate, its meaning and measurement and the factors affecting its value, including relative interest rates, commodity prices and the terms of trade, demand for exports and imports, foreign investment, relative rates of inflation, credit ratings and speculation
43. the terms of trade, its meaning and measurement and the factors that may affect the terms of trade, including commodity prices and production costs in trading partners
44. international competitiveness and the factors that may affect international competitiveness, including productivity, production costs, availability of natural resources, exchange rates and relative rates of inflation
45. the effect of movements in the terms of trade and the exchange rate, and changes in international competitiveness on the domestic macroeconomic goals and living standards

Chapter 1 [Unit 3 AOS 1] An introduction to microeconomics

The concept of relative scarcity, including needs, wants, resources, opportunity cost and the production possibility frontier (PPF) model, and the three basic economic questions.

What is an economy?

An economy is a system that allocates scarce resources to satisfy the needs and wants of a society. It is any place or region around the world where production of goods and services takes place, spending on those goods and services occurs and income is made from the selling of those goods and services. Put simply, an economy is a place where production, income and expenditure (referred to as economic activity) occurs. In Australia alone we have several economies: the Australian economy, the Victorian economy, the NSW economy, etc.

Relative scarcity

Economics is the study of how scarce resources (such as land and labour) are allocated by key participants to best satisfy the needs and wants of society. Decisions must be made because every nation demands countless goods and services that require resources (or factors of production) to produce them. However, a nation's resources are limited when compared to the demands placed upon them, creating an imbalance, typically referred to as ***relative scarcity***.

RELATIVE SCARCITY

Demands placed on resources [unlimited wants] > Resources available to satisfy demands [limited resources]

Economic resources

Typically, our resources fall into four major categories:

1. Land and natural resources (e.g. forests, minerals, water, etc.)
2. Capital resources (e.g. machinery, robotics, trucks, etc.)
3. Labour resources (e.g. workers such as teachers, managers, etc.)
4. Entrepreneurial resources (e.g. Melanie Perkins, Bill Gates, etc.)

All of these resources exist around us in various forms within our economy. They all have one important characteristic in common: they are all key inputs in the production process. Every business will have examples of all four 'factors of production' working to produce goods and/or services.

Exam Tip: A past examination asked students to explain the following statement: 'Economics studies how scarce resources are allocated among competing uses.' It is easy to read too much into a question like this and to forget that it is simply about scarcity and how this economic problem ultimately defines the study of economics. If asked a similar question this year, all students need to do is explain how the unlimited wants/needs (or 'uses for resources') require decisions about how to allocate resources in the production of goods and services.

Given that all resources (which are relatively limited or scarce) can be valued by money, and all demands for goods and services are typically valued in monetary terms, ***scarcity simply means that we don't have enough money to purchase all of the goods or services that we desire.*** Accordingly, every one of us encounters the problem of relative scarcity every day. We must therefore make a choice about how we should best use our resources (or money) to satisfy our demand for goods and services.

Exam Tip: Do not be confused about the role of money. It is not a resource in itself and you should not argue that money is one of our scarce resources.

Opportunity costs

When we decide to use our resources (or money) in some way, it necessarily involves us foregoing, or giving up, the opportunity to use those same resources (or money) in some other way. This is because resources are relatively scarce and have alternative uses. Accordingly, the **opportunity cost** of decision making can be defined as the value that could have been derived if the next best alternative was chosen or the (net) benefits that have been foregone when making an economic decision. For example, the Victorian government has substantial (but limited) funds at its disposal to use for society's benefit. If it chooses to spend $125b

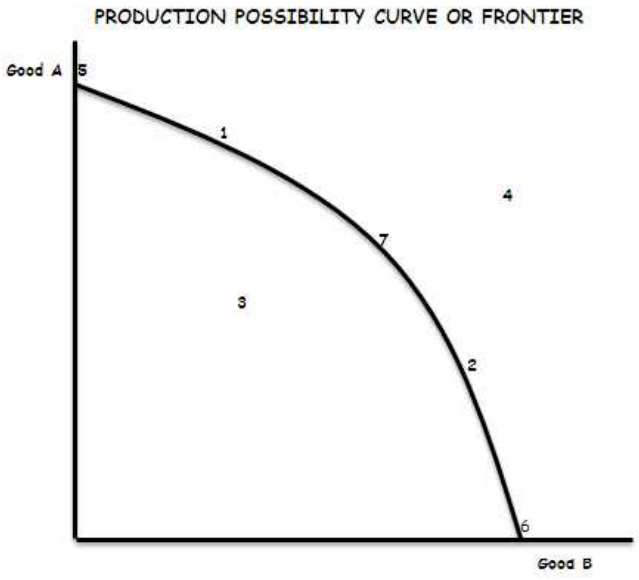
on constructing a Suburban Rail Loop, it foregoes or sacrifices the opportunity to use that same $125b for investment in health, education, other infrastructure or renewable energies. The opportunity cost in this example is the benefit that could have been derived from the investment in health, education, transport infrastructure or renewable energy, whichever was considered the next best option for the State of Victoria.

Exam Tip: Question 4a of the 2022 exam required students to outline the potential opportunity costs of consuming sugar for an individual. It is important not to refer to the opportunity cost as the 'tooth decay' or 'cost of dental repairs', which are both examples of the 'costs' associated with excessive sugar consumption. The best students will have referred to the sacrifice or foregoing of the value of the net benefits that would have been enjoyed from consumption of the next best alternative (e.g. healthier teeth stemming from the consumption of sugar free products).

The Production Possibility Frontier (PPF)

This is also referred to as the Production Possibility Curve (PPC). It is an abstract tool used by economists to highlight concepts such as:

- opportunity cost;
- productive capacity;
- productive or technical efficiency (or inefficiency);
- allocative efficiency;
- dynamic efficiency; and
- intertemporal efficiency.



It relies on a number of simplified assumptions, the key ones being:

- only two goods are being produced in an economy;
- all resources or factors of production can be used in the production of either good; and
- if all resources are being used efficiently, the economy's productive capacity must 'bounded' by the curve (i.e. you cannot produce beyond this point at the current time).

Points to note about the PPF are as follows:

- A movement from one point to another means a country is allocating more to the production of one good and less to another (this happens every minute in economies around the world) which necessarily involves a sacrifice of the production of another good (i.e. opportunity cost).
- Points outside the curve (like point 4) are not achievable today, but are achievable in the future via an increase in the quantity or quality of resources.
- Points inside the curve are neither technically/productively or allocatively efficient.
- Point 1, 2, 5, 6 and 7 are equally efficient in the respect that the economy is producing the maximum volume of goods and services possible with its available resources (that is, technical or productive efficiency is being achieved).
- There are many points (in addition to 1 and 2) along the PPC that are equally efficient in a productive sense.
- Only one point on the curve (it could be 1 or 2 or any other point that is not marked) is efficient in terms of what is best for the economy or country (and this usually represents that point where consumers' aggregate or total satisfaction is maximized typically referred to as the point of **allocative efficiency**).
- The speed or pace at which an economy can move from one point on the PPC to another can reflect the level of 'dynamic efficiency' existing in the economy.
- The point of production on the PPC can also reflect the level of 'intertemporal efficiency' that exists in an economy.

The way in which the PPC can be used to highlight the different types of efficiency is covered under the heading 'An efficient allocation of resources'.

Exam Tip: In the current Study Design (2023) students are now required to 'construct and interpret' a PPF model. Students should be able to construct a PPF from hypothetical data and 'interpret' a move from one point on the PPF to another. Students also need to be able to explain the 4 types of efficiency in relation to the PPF model.

The three basic economic questions

Relative scarcity gives rise to three basic economic questions faced by every economy. What to produce? how to produce it? and for whom it should be produced for?

1. What to produce?

This is concerned with how we allocate our scarce resources. Should we produce bananas or oranges? Capital goods (e.g. factory equipment) or Consumption goods? Petrol powered cars or solar powered cars? Military weapons or better hospitals? Coal fired electricity or solar electricity?

2. How to produce?

Again, this is an allocation question and asks what combination of scarce resources will we use to produce those goods and services that we have decided to produce? Do we use more labour than capital (labour intensive)? More capital than labour (capital intensive)?

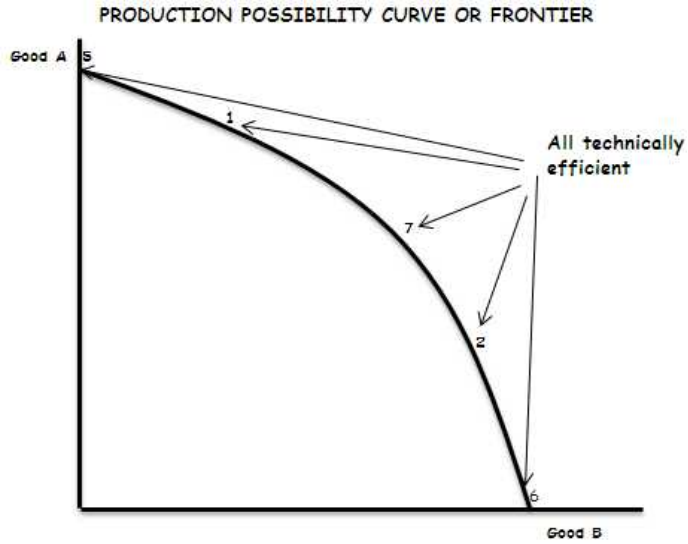
3. For whom to produce?

This is really concerned with how the goods and services are allocated or distributed to society. If left to free markets (i.e. markets without government intervention), those with greater economic power (e.g. the wealthy) will have greater access to goods and services and some members of society (e.g. the poor) will be unable to purchase some essential goods or services (e.g. health care).

The overriding consideration for governments when seeking solutions to the above questions is how do we maximise welfare and living standards? In Australia, we primarily use a market based economy to allocate resources, where buyers and sellers come together to exchange goods and services based on price (a market). Producers that seek to maximise profits will need to produce goods and services that satisfy the needs of consumers (consumer sovereignty). The market will effectively determine the way most resources are allocated in the Australian economy via the market mechanism (also referred to as the price mechanism).

The meaning and significance of economic efficiency, including allocative efficiency, productive efficiency, dynamic efficiency and intertemporal efficiency and their relationship to the PPF model

Technical or productive efficiency

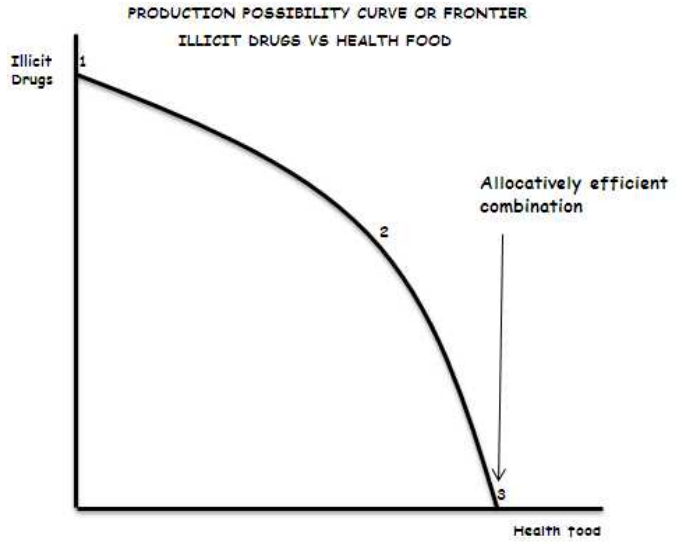


Technical or productive efficiency occurs when an economy is producing its maximum possible output and fully utilising its resources. To achieve productive efficiency:

1. Firms must be producing at the lowest possible long run (average) costs and will mean output from the available resources has been maximised.
2. Firms must be maximising productivity. e.g. getting the most out of their resources.
3. Ensuring there is no wastage of resources e.g. there is no unemployment or idle/ underutilized capital and land resources.

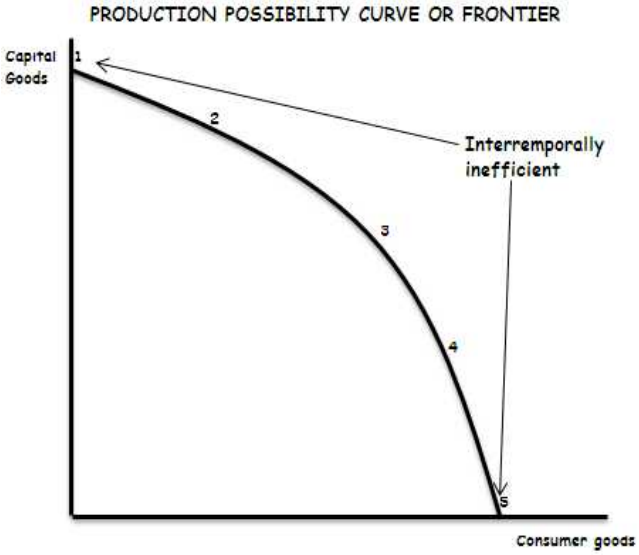
It is represented by the economy producing at <u>any</u> point along the PPF. All points along the PPF are technically efficient, regardless of what combination of goods and services are produced. E.g. points 5,1,7,2,6 are all productively efficient.

Allocative efficiency



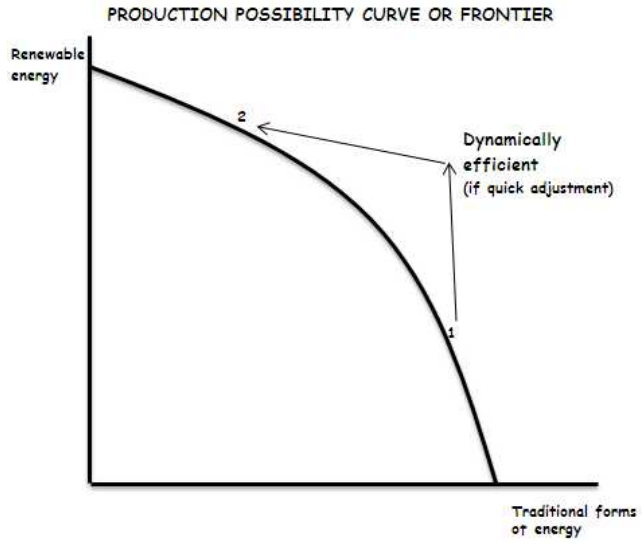
Allocative efficiency represents the most efficient allocation of scarce resources for an economy in the sense that, for any combination of scarce resources, the production of goods and services that occurs is most valued by society. It results in a combination of goods and services being produced that maximises national welfare/living standards. In other words, the most efficient allocation of resources occurs when it is impossible to increase production and living standards by changing the way resources are allocated. For example, using the PPF, in an economy which could choose between health food and illicit drugs. Despite all points of production being technically efficient (i.e. points 1-3), there is only <u>one</u> combination that is in the national best interest. This is point 3. Accordingly, if the economy moved from point 3 towards point 2 (i.e. it allocated some resources to the production of illicit drugs) then the nation's welfare or living standards would decline.

Intertemporal efficiency



Intertemporal efficiency refers to a firm, government or indeed the nation having just the right balance between resources being used for current, as opposed to future use. The establishment of the "Future Fund" (see Unit 4 Budgetary Policy) and the compulsory "Superannuation Guarantee Scheme" are examples of how the government has endeavored to improve intertemporal efficiency. It can be represented by the economy not producing at either extreme on the PPF, when the choices are capital or consumer goods. In other words, too much consumption relative to investment (point 5), or too much investment relative to consumption (point 1), will mean that the economy's use of resources is intertemporal ly inefficient. The unsustainable use of a nation's resources (e.g. depleting fishing stocks) is a common example of how intertemporal efficiency is not achieved.

Dynamic efficiency



Dynamic efficiency can refer to how firms or industries are able to respond to changing market conditions or changes in technology such that productive or allocative efficiency can be achieved. If the response is quick, then dynamic efficiency is said to be high. It is represented by the speed at which the economy can re-allocate its resources from the production of one good or service to another, or from a sub-optimal combination to one that is **allocatively efficient**. For example, assume that our production possibilities are traditional forms of energy generation (e.g. coal fired power stations) and renewable forms of energy (e.g. wind and solar). Assuming that there are major advances in technology making renewable energy generation much more viable (combined with a clear change in consumer preferences towards renewable energy), then if the country can quickly adapt and move from point 1 to 2 (allocative efficiency), it is 'dynamically efficient'.

Exam Tip: In economics literature, allocative efficiency is sometimes defined as the competitive market situation where firms are forced to price at minimum price (or where marginal cost = average revenue) and where consumer satisfaction is maximised. [This will typically be explored in a first year university or IB Economics course.] As a VCE Economics student, you should focus upon how a nation's resources are allocated to provide the greatest value to society. In this respect, achieving the most efficient allocation of resources in the economy is the ultimate objective or goal of any government.

If our resources are re-allocated such that production in the economy expands, does this mean that there will be an increase in allocative efficiency?

Usually, an increase in production, ceteris paribus, will mean that allocative efficiency has improved. However, if the increase in production has occurred for goods or services that are not in the nation's collective best interests (e.g. illicit drugs), then allocative efficiency has not been achieved despite the increased production of goods and services. This is why it is important to examine the effect on national living standards or welfare (or value to society) when determining whether an economy has achieved the most efficient use of its resources. [This, of course, relates to market failure, which is covered later in this area of study.]

The most efficient allocation of resources can also be described as an allocation that is **PARETO EFFICIENT** in the sense that a move away from this position would result in the net benefits for society to diminish. The most efficient allocation of resources also implies that a nation has achieved the highest levels for the different types of efficiency: **allocative efficiency**, **technical (productive) efficiency**, **intertemporal efficiency and dynamic efficiency.** Accordingly, government policies will not only be developed to address the misallocation of resources (or market failures) that naturally occur in market capitalist economies, but to boost 'efficiency' levels within our markets and industries.

QUICK QUIZ 1: DISTINGUISHING BETWEEN EFFICIENCIES

Types of efficiency		**Outline a distinguishing factor between the two types of efficiency (think about how each efficiency relates to the PPF)**
Allocative	Dynamic	
Allocative	Productive	
Allocative	Intertemporal	
Dynamic	Productive	
Dynamic	Intertemporal	
Productive	Intertemporal	

The conditions for a free and perfectly competitive market

A market is a place where buyers and sellers (demand and supply) come together to allocate resources. In an open market economy like our own, the market or price mechanism, is the main instrument for allocating these scarce resources.

In order to better understand how consumer and producer behaviour influences markets and resource allocation, economists typically create theories and models to simplify the real world. The market structure that usually forms the basis for demand and supply analysis is called "**perfect competition**". While there is no market in the world that is '*perfectly competitive*' (but some do come close, such as some agricultural markets and the foreign exchange markets), the model of a perfectly competitive market is a useful tool that enables predictions to be made about how resources such as labour and capital move around in an economy.

A **"free"** market is one without any government intervention. This means the government doesn't impose any rules, regulations, taxes, or subsidies on that market. Of course, there are few, if any, markets that are free from government intervention, perhaps the closest example is the market for cryptocurrencies where governments have been slow to regulate.
A perfectly competitive market requires the following conditions/characteristics or assumptions:

- A large number of buyers and sellers
- Perfectly homogenous products (i.e. no product differentiation – the products in the market are identical);
- Freedom of entry into the market by sellers
- Freedom of exit out of the market by sellers
- Buyers and sellers possess perfect information about the products
- Buyers seek to maximise satisfaction (utility) and sellers seek to maximize profit
- Resources (e.g. labour) are perfectly mobile.

Extension: The nature of perfectly competitive markets

The nature of a perfectly competitive market is one where production takes place at the lowest possible cost (technical efficiency) and that consumers would be able to purchase those goods and services they desired (consumer sovereignty) at the lowest possible prices (they have perfect information). Competition would ensure that firms priced their products at their 'marginal' costs of production. This means that any further price reduction would result in insufficient profits being earned (or perhaps even losses), thereby encouraging firms to exit the market. This means that a perfectly competitive market structure would see consumers getting the best deal possible, in terms of paying the lowest possible prices and receiving the highest possible quality. This situation in economics is typically referred to (in a narrow sense) as 'allocative efficiency', where the markets do a perfect job at satisfying the demands of consumers.

Exam Tip: In perfectly competitive markets, businesses can only earn 'normal profits' in the long run. This means that the profit is just enough to provide incentive for the business to remain a going concern. Profit levels below 'normal profits' will encourage firms to exit the industry. Profit levels above 'normal profits' (sometimes called 'super-normal profits') will encourage entry of firms into the industry, thereby working to reduce industry profits back towards normal levels. Note that students are not required to demonstrate an understanding of normal/abnormal profits in the current VCE Economics course.

Exam Tip: The key skills listed in the Study Design requires students to be able to 'evaluate the role of free and competitive markets in achieving an efficient allocation of resources'. In addition, the key knowledge points indicate the need for students to demonstrate an understanding of 'one example of a government intervention in markets that unintentionally leads to a decrease in one of allocative, productive, dynamic or intertemporal efficiency'. This highlights that 'unregulated markets' will not always lead to resources being allocated in a way that best satisfies the needs and wants of society. Markets will require government intervention that is designed to rectify these 'market failures'. However, government intervention will, at times, have unintended consequences that we will consider after first examining how markets allocate resources via the price mechanism.

REVIEW/APPLICATION QUESTIONS 1 - Introduction

1.
2.
3.
   - ***describe how movements along the PPF can highlight the concept of opportunity cost.***
   - ***show points of technical/ productive efficiency on the PPF.***
   - ***use the PPF to distinguish allocative efficiency from technical efficiency.***
   - ***highlight how two points on the PPF can represent dynamic efficiency.***
   - ***use the PPF to distinguish allocative efficiency from dynamic efficiency.***
   - ***show a point where unemployment exists on your diagram.***
4.
5. ***intertemporally efficient and explain why you believe this to be the case.***
   A) Draw a series of points along the PPF and describe which point(s) are 'technically efficient'?
   B) Describe which of the above points are 'allocatively efficient'? Can there be more than one?
   C) Discuss how a movement from one point to another can illustrate the degree of 'dynamic efficiency' that is present in an economy.
6. ***and infrastructure.***
7.
8.
9.

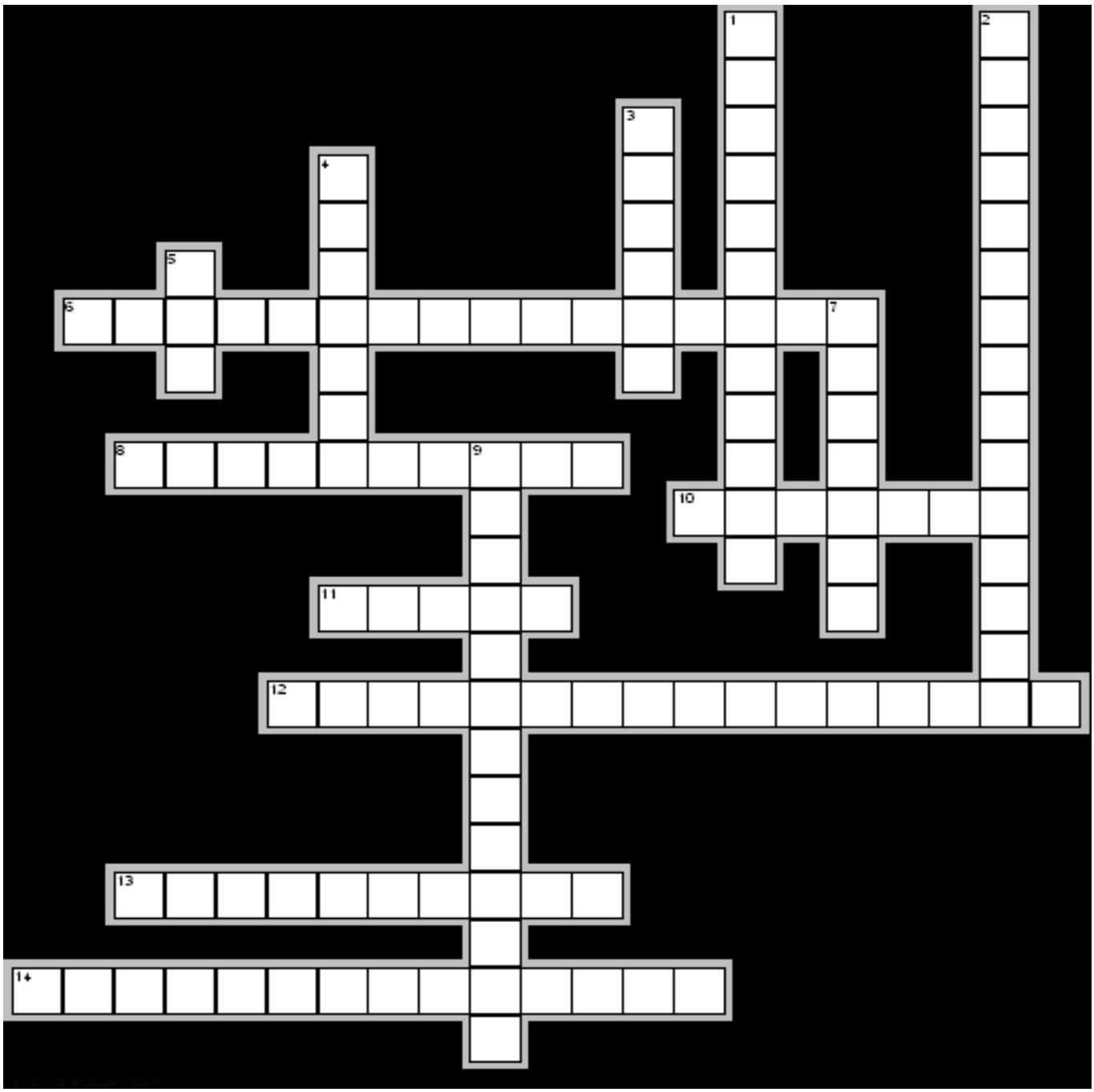
Quick revision crossword No 1: Introduction to economics

Across

6. Items like robotics and machinery used in the production process (2 words)
8. The most important type of efficiency that represents the best combination of goods and services produces such that living standards are maximised
10. any place or region around the world where production of goods and services takes place
11. A 'fuel' that drives our economy (it is also relatively scarce)
12. Demands placed on resources greater than the ability to meet those demands with existing resources (2 words)
13. Investing in this can help to push the PPF outwards over time
14. Describes how the forces of demand and supply determine (relative) prices, which then ultimately determines the way our productive resources are allocated in the economy (2 words)

Down

1. What must be occurring when a nation produces inside its production possibility frontier
2. the value that could have been derived if the next best alternative was chosen
3. A factor of production involving human capital
4. The type of efficiency that refers to how a nation's firms or industries are able to respond to changing market conditions or changes in technology
5. An acronym for an abstract tool used by economists that highlights the concepts of opportunity cost and productive efficiency
7. An insufficient volume of this is likely to lead to intertemporal inefficiency
9. The type of efficiency that refers to a firm, government or indeed the nation having just the right balance between resources used for current as opposed to future use.



How markets work – the detail

The above analysis of the market mechanism would be difficult to comprehend without an understanding of how markets actually work. This section is particularly geared for those students who have not completed Unit 1 Economics, or who found the mechanics of demand and supply difficult in their earlier studies.

Markets are places (or circumstances) where buyers and sellers of goods or services come together in exchange, where the rate of exchange is the price of the relevant good or service. The key characteristics of markets are demand, supply, price and quantity (or production).

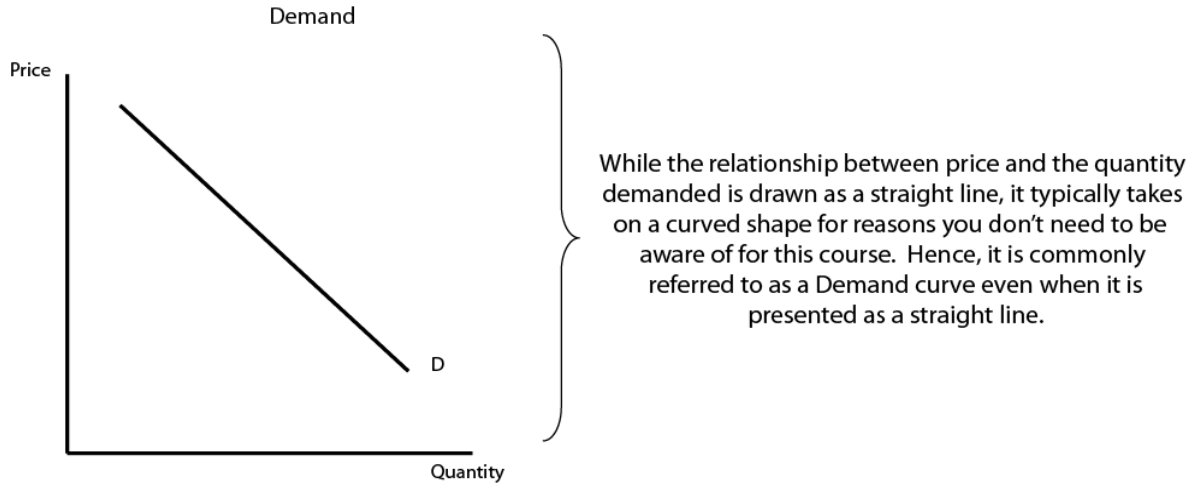
The law of demand and the theory of the law of law of demand, including the income effect and the substitution effect

Demand is the willingness of consumer(s) to purchase a good or service for a price. That is the demand curve shows the quantity consumers are willing to buy at each specific price (quantity demanded). The quantity demanded will typically vary for different price levels, with an inverse relationship between the price of a product and the total demand for that product in the market.

The law of demand:

As P ↑ ⇒ D ↓ and as P ↓ ⇒ D ↑ (ceteris paribus)

The relationship can be represented graphically on the demand curve below, where a fall in price causes quantity demanded for the product to increase (and vice versa)



Why is the demand curve downward sloping?

1. Income effect

When the price of a good or service decreases consumers are likely to buy more of the product because it now takes up a smaller proportion of their total income e.g. they have more purchasing power. If the price of a good or service rises, then it takes up more of their income and they will consume less e.g. they have less purchasing power. The income effect assumes that incomes stay the same. For example, if the price of a cup of coffee decreases, then consumers may drink (purchase) more cups of coffee per month (e.g. an increase in quantity demanded) even if they spend the same amount (or proportion of their income) on cups of coffee and vice versa.

2. Substitution effect

When the price of a good or service decreases, consumers are likely to buy more because it is now relatively cheaper compared to a substitute product and vice versa. For example, if the price of cup of coffee decreases, quantity demanded increases as some consumers will substitute away from the relatively more expensive substitute products, such as tea or hot chocolate.

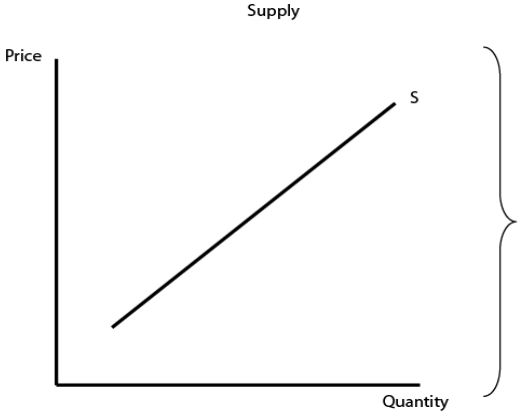
The law of supply and the theory of the law of supply, including the profit motive

Supply is the willingness of suppliers to sell a good or service at a price. That is the supply curve shows the quantity producers are willing to sell at each specific price (quantity supplied). The quantity supplied will usually vary for different price levels, with a positive relationship between the price of a product and the total supply in that market.

The law of supply

As P ↑ ⇒ S ↑ and as P ↓ ⇒ S ↓ ceteris paribus.

This relationship can be represented graphically on the supply curve below, where a fall in price causes quantity suppled for the product to decrease (and vice versa)



It is upward sloping because when the price of a particular product is rising, it provides producers with added incentive to devote more resources to its production. This is because a higher price (ceteris paribus) means bigger profits and producers are typically motivated by profit.

Why is the supply curve upward sloping?

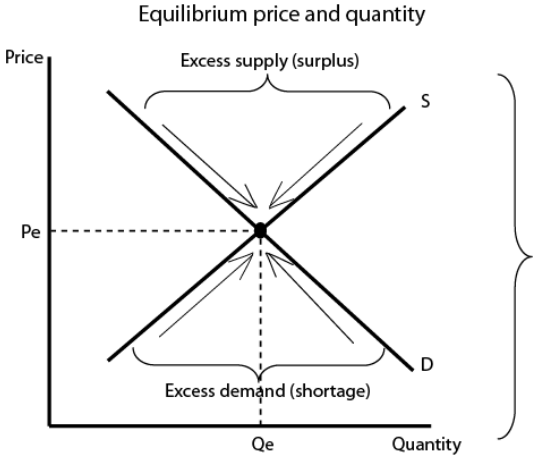
The profit motive

Profit is measured as total revenue for a firm (quantity of goods or services sold, multiplied by the price at which they were sold) minus total costs. In economics firms are assumed to have one motive, to maximise their profits and therefore minimise losses. This is important because it dictates where firms will allocate their productive resources. For example, if the price of a particular good or service increases (assuming their costs stay the same) firms will allocate more resources to the market to maximise their profit. If the price decreases, they will reallocate resources away from the market, to a market with a higher relative price and more profit making opportunities.

In 2022, Deliveroo, an online food delivery app, shutdown its Australian operations. The company had operated in Australia for many years, had hundreds of employees and thousands of delivery partners (drivers). However, Deliveroo had **never made a profit**. The fact that Deliveroo was making losses in Australia sends a signal to the company and its investors that resources are best allocated elsewhere, to (more) profitable ventures. Economists would say that this is efficient because resources are not being wasted or overallocated.

The effects of changes in supply of equilibrium prices and quantity traded

In every market, the forces of demand and supply will determine both prices of the product and the quantity that is likely to be supplied for a given time period. Price and quantity will tend to move towards their 'equilibrium levels'.

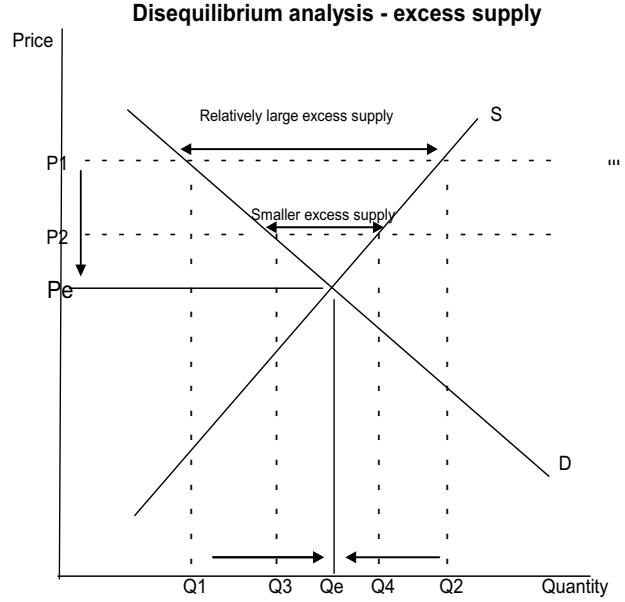


Pe denotes 'equilibrium price' and Qe denotes 'equilibrium quantity'. It is the equilibrium because the market is in a state of rest. There is no pressure for price to change from this level unless there is a shift in demand or supply.

If the price in a market is not at its equilibrium level, then it is not in a state of rest and the price will converge towards its **Pe** level. The amount of time this takes will depend on a number of factors, in particular the market in question. For example, the price of grapes at the Queen Victoria market will quickly move towards its Pe level due to the perishability of grapes. However, it is likely to take significantly longer in the case of more durable goods like cars for sale in various car dealerships around Melbourne.

How the price converges towards equilibrium is referred to as **disequilibrium analysis**. Assume that the price in a market is too high because shifts have occurred in demand or supply (which we will explore soon) or because a supplier has only recently started supplying the product and he/she is 'testing the market'.

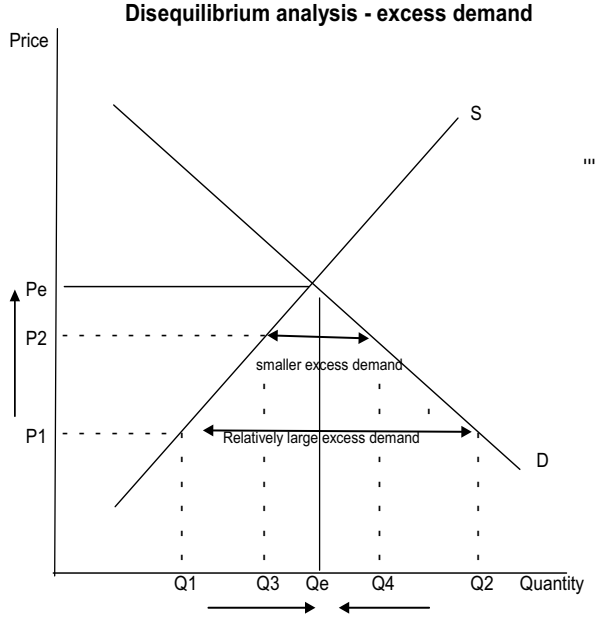
Disequilibrium analysis - excess supply



The price set is at P1 the supplier produces Q2 but consumers are only prepared to demand Q1. It will become apparent that this price is too high because supplies will begin to build up (e.g. too much stock left on the shelves). The surplus or excess is represented by the difference between Q1 and Q2. The supplier will then lower the price (e.g. to P2) in order to eliminate the surplus. At P2, consumers will demand more of the product (Q1 to Q3) and the supplier will be willing to supply less on the market (Q2 to Q4). Whilst the supplier will notice that the excess supply is certainly falling (represented by the smaller area Q3 to Q4), there is still too much stock remaining on the shelves. This process of lowering the price to remove surplus stock will continue until a price is reached (Pe), where there is neither a surplus of stock nor a shortage of stock (Qe). Note that it is possible for the supplier to 'overshoot' and lower the price to one that is below Pe. This would result in 'excess demand' where the price is driven up towards Pe.

Now, assume that the price in a market is too low. Again, price will be driven up towards its equilibrium level.

Disequilibrium analysis - excess demand



With price set at P1, the supplier is producing Q1 whilst consumers are demanding Q2. It becomes apparent to the supplier that this price is too low because supplies are depleted relatively quickly and production is not keeping up with demand for the product. Excess demand (or shortage) is represented as the difference between Q1 and Q2. Accordingly, the supplier will raise the price to take advantage of the fact that demand for the product is relatively strong. As price rises, to P2 for example, a shortage (excess demand) will continue to occur in the market. However, the shortage is smaller than that which occurred when the price was P1. The shortage is now represented by the smaller areas Q3 to Q4. As before, this process continues, with price rising, until the market rests at Pe. If the supplier 'overshoots' by raising the price above Pe, then a excess supply will develop and price will then converge down towards Pe.

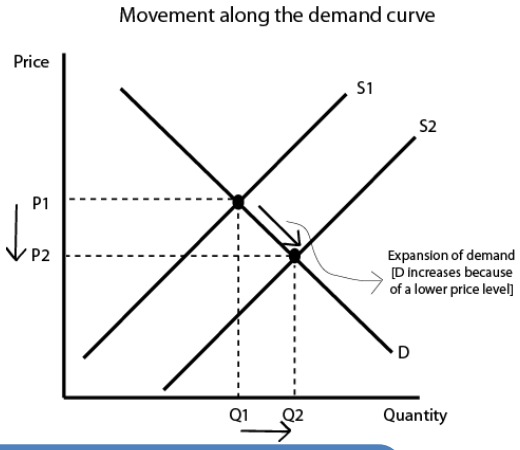
In reality, suppliers do not know the precise location of the equilibrium price and quantity and they simply respond to conditions that present themselves in markets via shortages or surpluses that develop over time. In addition, the equilibrium price and quantity levels continually change as the conditions within markets frequently change. These changed 'conditions' in markets take the form of shifts in demand and supply such that the quantity demanded by consumers or supplied by producers changes at each specific price.

Shifts of the demand curve and movements along the demand curve

The demand for a product will change over time for a variety of reasons. The most obvious reason, and one we have already examined, is a change in price. For example, we have seen that if the price falls, demand is expected to increase (expansion) and if the price increases, demand is expected to fall (contraction). This increase or decrease in demand has occurred purely as a result of a change in price. Accordingly, there is a movement along the demand the curve – THE DEMAND CURVE DOES NOT SHIFT. This movement 'along the demand curve' will occur when the supply curve shifts, as shown in the adjacent demand and supply diagram.

The shift in the supply curve has exerted downward pressure on price (from P1 to P2). This price fall has then resulted in an increase in the quantity demanded for the product (from QD1 to QD2). Note that the demand curve has not shifted, but there has been an increase in demand (expansion along the demand curve).

In this case, there has been an increase in demand along the demand curve (sometimes referred to as an expansion of demand). Clearly, price is not the only factor that will influence the demand for a product. Demand can increase or decrease for reasons that are unrelated to the price of the product. For example, demand will increase (**ceteris paribus**) if any of the following 'hypothetical' events occurred in the market for **Apple iphones:**



Exam Tip: Ceteris paribus is an important concept to remember when completing assessment tasks. It enables us to make better predictions about the likely behaviour of economic agents (e.g. consumers or producers) or the movement of economic variables (e.g. prices) because it isolates cause and effect and removes the influence of other factors. For example, it would be incorrect to say that an increase in the price of a substitute will result in greater demand because there are other factors that may simultaneously cause the demand for a product to fall (such as a decrease in disposable incomes). Accordingly, students should make it clear that they are aware of the numerous factors at play that could change the outcome. It is, therefore, more accurate to say that the demand for coke 'should increase' or 'is likely to increase' when there is an increase in the price of Pepsi. In assessment tasks, use expressions like ''should' or 'is likely to' rather than 'will'.

Non-price factors likely to affect demand and the position of the demand curve, including changes in disposable income, the prices of substitutes and complements, preferences and tastes, interest rates, population demographics and consumer confidence

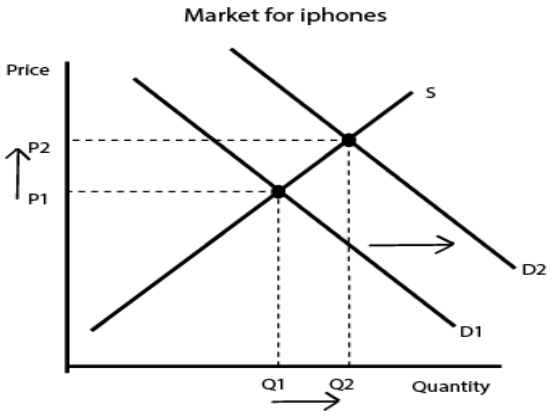
For example, in the market for iphones, the following factors are likely to cause demand to increase, shifting the demand curve to the right, and placing upward pressure on price:

- *The **price of a substitute product** increases (e.g. there is a rise in the price of other mobile phones);*
- *The **price of complementary products** falls (e.g. the price of MP3 songs/ Spotify /downloads available over the internet decreases);*
- *There is an increase in **disposable income of consumers** (e.g. the average wage in Australia increases by 20% or the personal income tax rates fall);*
- *There is a change in **consumer preferences or tastes** towards iphones as they become a status symbol;*
- *There is a **reduction in interest rates**, thereby encouraging more credit based spending on items like iphones (e.g. consumers are more likely to place the purchase of an ipod on a credit card when interest rates are lower);*
- *There is a change in the **size or make up (demography) of the population** that results in an increase in the number of consumers in the market for Apple iphones (e.g. our population rises significantly as a result of increased births or immigration);*
- ***Expectations of consumers** (i.e. consumer sentiment or **consumer confidence**) improve such that they expect a better economic future, with greater job certainty and guaranteed income for a long period of time (propensity to save falls and propensity to consume rises as confidence rises)*
- **Advertising** or **marketing** of the product increases; and
- **Government action** in the form of a report suggesting that use of iphones on public transport can significantly reduce stress levels.

Exam Tip: The current Study Design only requires a knowledge of the underlined factors above. However, a knowledge of additional factors might prove to be useful in the examination.

Each of the above hypothetical events will result in the demand curve shifting to the right and this will place upward pressure on price given that at the original price of P1, there will be excess demand (i.e. a shortage) for iphones and producers will seize the opportunity to raise prices as a means of addressing the shortage and maximising profits.

The shift to the right of the demand curve for Apple iphones has now resulted in a movement (expansion) along the supply curve. Hence, both demand and supply have increased from Q1 to Q2.



Exam Tip: In the 2021 exam, students were asked to outline one demand factor OR one supply factor that might explain the increase in total fish consumption…' There are a couple of important points to note in relation to a question such as this. First, it is best practice to make a connection to a specific demand OR supply factor that is listed in the Study Design. Second, it is pointless to outline BOTH a demand and supply factor as the second factor will be ignored by assessors.

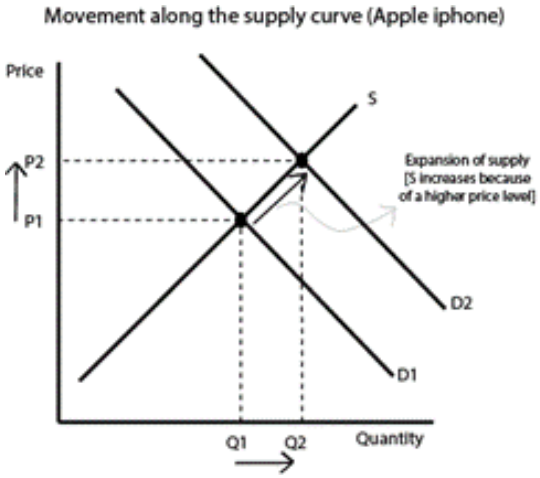
Exam Tip: Students often get confused about the relationship between price and quantity demanded. For example, some find it difficult to understand how there can be an increase in demand when price is rising, believing that this violates the 'law of demand'. Always remember to isolate what came first when trying to analyse cause and effect. A price increase will be associated with an increase in demand if the higher demand is what came first (i.e. a shift to the right of the demand curve). However, a price increase will be associated with a fall in demand if the price increase is what came first (i.e. via a shift to the left of the supply curve)!

Exam Tip: In examinations, students often struggle to explain how the equilibrium price and quantity adjusts following a shift to the right of the demand curve. It is useful to imagine that the initial demand curve disappears (because it is no longer relevant) and examine the state of the market at the pre-existing price. It should become apparent that a shortage will exist and the price will be bid up until the shortage is removed (at the new equilibrium price of P2, where the new demand curve intersects with the supply curve).

The supply curve, including movements along and shifts of the supply curve

Like demand, the supply of a product will change over time for a variety of reasons. Again, the most obvious reason is a change in price, which is captured by the slope of the supply curve and the law of supply. As price rises for example, suppliers are *more willing* to supply to the market (as discussed earlier). Price rises that occur in markets as a result of an increase in demand (shift to the right of the demand curve) will result in an upward movement along the supply curve (sometimes referred to as an expansion of supply), as we saw in the D/S diagram for iphones.

In the D/S diagram to the right, supply has definitely increased from Q1 to Q2. However, THERE HAS NOT BEEN A SHIFT OF THE SUPPLY CURVE. Instead, there has been a movement along the supply curve (an expansion) that is driven by the higher price.



Apart from the price of the product, there are several other factors that will change the willingness of suppliers to supply to the market. These factors will result in a shift of the position of the supply curve, which will then influence price and quantity demanded in that market. Ultimately, all of the factors that influence the willingness to supply relate to suppliers' (perception of) profitability in the relevant market, where profitability is heavily influenced by the costs of production. Accordingly, any factor that causes a movement in the costs of production or a change in the perception of profitability should result in a change in the willingness to supply and a consequent shift in the position of the supply curve.

Exam Tip: MC Q2 of the 2022 exam proved to be challenging for students. It required them to determine which of the four options represented a 'movement along the supply curve'. A majority of students did not recognise that option C (a decrease in income tax rates) causes the D curve to shift to the right and results in a movement (expansion) along the S curve. Many students believed that a shortage of skilled farm workers (A), a decrease in the price of fertilizer (B), and the removal of excise on petrol used by farmers (D) caused a movement along the S curve, not appreciating that all are examples of factors causing a shift of the S curve.

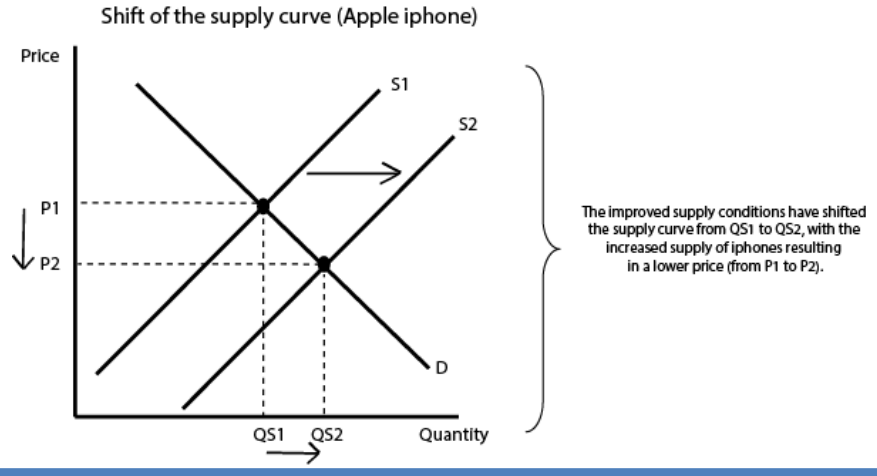
Exam Tip: Question 4b of the 2023 exam proved to be very challenging for many students. The question required students to construct a fully labelled D/S diagram and use it to analyse how one non-price factor will cause a leftward **movement along** the demand curve for new houses, resulting in a new equilibrium P and Q. Too many students misinterpreted this as a 'leftward **shift of** the demand curve', which resulted in them shifting the demand curve to the left when they needed to shift the supply curve to the left. This serves as an important reminder to read the question very carefully.

Non-price factors likely to affect supply and the position of the supply curve, including changes in the costs of production, number of suppliers, technology, productivity and climatic conditions

For example, in the market for iphones, the following factors are likely to cause supply to increase, shifting the supply curve to the right, and placing downward pressure on price:

- *A reduction in the **costs of production:** resulting from factors such as:*
  - *i. Lower labour costs or a reduction in costs of capital equipment;*
  - *ii. Lower costs of raw materials (e.g. due to greater availability);*
  - *iii. Lower business taxes (e.g. a fall in State payroll taxes/ company tax);*
- *An increase in **productivity** (e.g. due to more efficient labour methods);*
- *An increase in the rate of **technological change** (e.g. due to employment of the latest imported or locally invented technology that improves rates of productivity growth);*
- *More favourable **climatic conditions** (note this is more relevant to agricultural products such that better growing conditions will result in an increase in supply); and*
- *A change in the **number of suppliers** (e.g. new suppliers entering the market *for phones in general)*
- Decreased costs associated with compliance of **government regulations** (e.g. the government deciding to streamline reporting requirements); and
- Lower **interest rates** which reduce the interest cost of debts and hence increase profits (ceteris paribus)

Exam Tip: The current Study Design only requires a knowledge of the underlined factors above. However, a knowledge of additional factors might prove to be useful in the examination.



Exam Tip: The above example relates to a manufactured item that is affected by climatic conditions in minor ways. However, other producers (e.g. those in agricultural industries) will experience a shift of their supply curves due to climatic events such as droughts, floods or cyclones. For example, floods in Australia over recent years caused the supply curves for many producers (e.g. cotton and banana growers and sugar cane farmers) to shift to the left as their capacity and willingness to supply at any specific price falls. These are sometimes referred to as supply shocks.

Exam Tip: Question 2 of the 2017 made reference to a supply shock affecting 'the market' for strawberries (i.e. a period of unseasonably cold weather) and students were required to draw the changes and explain how a new equilibrium was achieved. Failure to make reference to the change in the three key variables underpinning a 'market' (i.e. demand, supply and price) was costly.

Exam Tip: Like before, don't get confused about the relationship between price and quantity supplied. A price decrease will be associated with higher supply levels if the increase in supply is what came first (i.e. a shift to the right of the supply curve). However, a price increase will be associated with higher supply levels if the price increase is what came first (i.e. via a shift to the right of the demand curve)! Equally a supply shock will typically lead to higher prices but lower quantity being supplied, as was the case in question 2 of the 2017 exam.

Exam Tip: Question 2di of the 2015 exam showed a D/S diagram relating to the oil market, with the S curve shifting to the right and the D curve shifting to the left. For 2 marks, students were required to explain the movement in the *price* of oil. It is important not to read too much into a question like this and explain the dynamics of adjustment from one equilibrium point to another. Students simply needed to identify that price fell as a result of both a decrease in demand *and* an increase in supply. Once again, a failure to make reference to the change in the three key variables: *price*, *demand* and *supply* would have been costly.

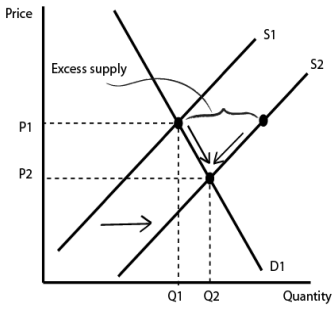
The effects of changes in supply and demand on equilibrium prices and quantity traded

So far, we have examined shifts of both the demand and supply curves (which represent changes in demand and supply conditions in markets) and how these changes influence the prices of various goods and services. When these changes occur, a market moves from a position of equilibrium to disequilibrium, which will either be characterised by an excess demand (shortage) of goods and services or an excess supply (surplus) of goods and services. This disequilibrium will then cause (relative) prices to adjust in such a way that the market returns to equilibrium over time. How equilibrium prices and quantities response to changes in demand and supply is summarised below.

Lower supply
[supply shifts to the left]

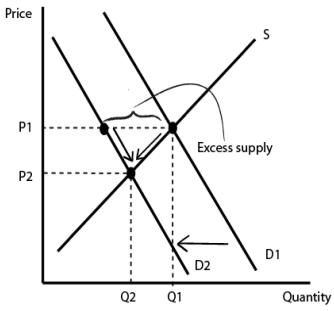
Market in equilibrium at P1, Q1
Disequilibrium caused by a decrease in supply (S1 to S2)
Excess demand is created at existing price of P1
Price is forced up to P2
Equilibrium restored at a higher P2 and lower Q2

Higher supply
[supply shifts to the right]



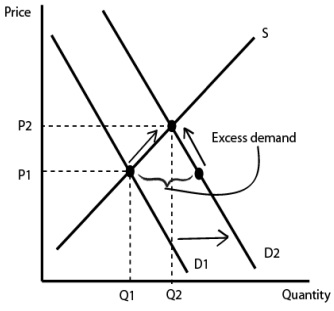
Market in equilibrium at P1, Q1
Disequilibrium caused by an increase in supply (S1 to S2)
Excess supply is created at existing price of P1
Price is forced down to P2
Equilibrium restored at a lower P2 and higher Q2

Lower demand
[demand shifts to the left]



Market in equilibrium at P1, Q1
Disequilibrium caused by a decrease in demand (D1 to D2)
Excess supply is created at existing price of P1
Price is forced down to P2
Equilibrium restored at a lower P2 and lower Q2

Higher demand
[demand shifts to the right]



Market in equilibrium at P1, Q1
Disequilibrium caused by an increase in demand (D1 to D2)
Excess demand is created at existing price of P1
Price is forced up to P2
Equilibrium restored at a higher P2 and higher Q2

Exam Tip: In question 2 of the 2017 exam, students were provided with data on a strawberry market and were asked to construct a demand and supply diagram; to identify/explain the equilibrium; and explain how the market adjusts to its new equilibrium following a supply shock. Students typically drew straight lines for the demand and supply schedules, but the best responses were those who correctly identified that the data provided in the question required 'curved' demand and supply lines.

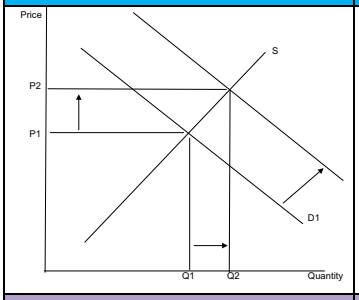
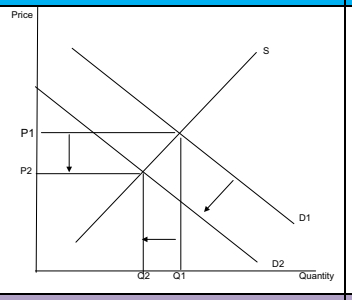
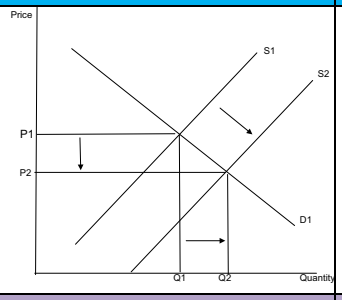
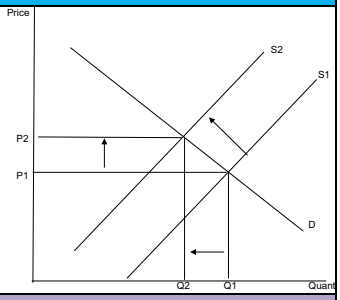
Exam Tip: When showing the adjustment to equilibrium following a supply shock, it is recommended that students use an arrow for the shift and also include arrows to show the movements along the curves (expansion/contraction) towards the new equilibrium, as well as include reference to the new equilibrium price and quantity. Importantly, when describing this disequilibrium analysis, the best responses will be those including an explanation for the "expansion/contraction" that takes place in order to clear the market.

Exam Tip: Students should be careful to correctly label D/S diagrams in assessment tasks and examinations. Importantly, do not label D/S diagrams 'AD/AS' when focusing on an individual market!! [These students are confusing macro concepts with micro concepts]. It is also crucial to show the price on the y-axis and the quantity on the x-axis and NOT vice versa.

Exam Tip: When students are asked to examine the impact on a market, it is imperative that reference is made to the impact on the key components of that market, in particular, the implications on demand/supply, price and the quantity traded. For example, Q1d of the 2019 examination required students to explain the impact on the housing market following a reduction in the cash rate or a government guarantee provided for first home buyers. Too many students will have focused on the price impact without referencing the impact on the quantity of houses sold/traded.

QUICK QUIZ 2: DEMAND AND SUPPLY [50 SCENARIOS]

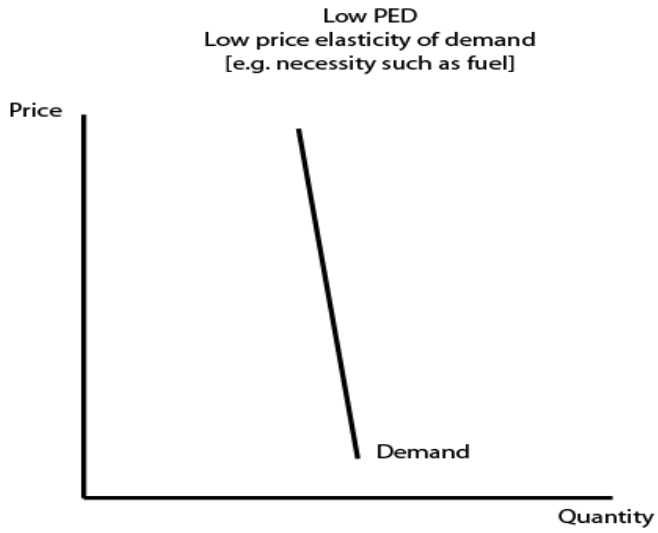
For each of the following situations (1- 50), choose one of the responses (A - D) that ***most*** accurately reflects what is likely to happen in the relevant market.

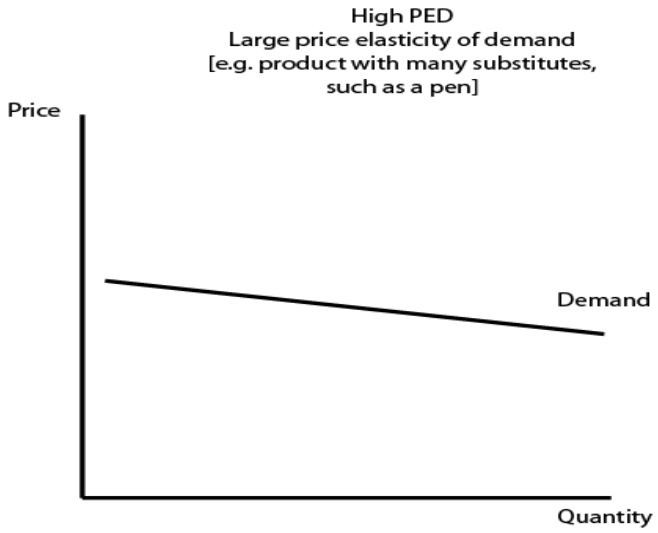
A	B	C	D
			
1	**2**	**3**	**4**
Petrol: The 6-month fuel excise tax cut ends	**Petrol cars:** The government provides a cash grant for consumers who purchase electric cars	**Cigarettes:** The government increases the excise tax on tobacco by an additional 5% in 2024	**Xbox:** The price of PlayStation 5 increases by $50 to $799.95
5	**6**	**7**	**8**
Tourism: Melbourne enforces strict quarantining for overseas visitors	**Food delivery services:** Deliveroo shuts down in Australia	**Electricians in eastern Australia:** The reconstruction following the floods	**Luxury cars:** The government decreases the luxury car tax to 10%
9	**10**	**11**	**12**
Modern Apartments: Buyers are more aware of cladding issues in many modern apartments	**Buildings:** government regulations require scaffolding around all building sites above a certain height	**Motor vehicles:** the cost of petrol falls following the 2020 global oil price shock	**Pepsi Cola:** The price of Coke decreases as a price war develops between the two rivals
13	**14**	**15**	**16**
Hand sanitiser: COVID-19 infection numbers decrease drastically	**Apple Music:** The monthly subscription price of Spotify increases	**Cappuccinos:** the cost of coffee beans increases	**Apples:** NZ apples are allowed to enter the Australian market
17	**18**	**19**	**20**
Herron pain relief tablets: Panadol tablet production ceases temporarily due to poisons found in the tablets	**Natural Gas:** If the war in Ukraine ceases	**Bananas:** A cyclone wipes out banana plantations in eastern Australia	**Take-away coffee:** The price of sugar increases as a result of flood damaged crops
21	**22**	**23**	**24**
Taxis: Uber driving services become increasingly attractive for consumers	**Normal Potatoes** Sweet potato crops are wiped out in the Queensland floods	**Face masks:** New laws are introduced forcing people to wear face masks	**Lithium:** Several companies set up operations to mine lithium following the growth in lithium prices
25	**26**	**27**	**28**
Milk: Coles and Woolworths engage in heated price war forcing them to improve operations	**Digital televisions:** The government cuts off the analogue signal	**Free range eggs:** It's discovered that some egg producers falsely claim that their eggs are free range	**Alcohol** the government introduces tighter liquor licensing laws
29	**30**	**31**	**32**
Entry to live music venues: The government's liquor licensing commission requires venues to hire additional security measures	**Hair extensions:** Hair wholesalers in India charge a higher price to hair buyers	**Large cars:** The cost of small cars decreases significantly	**Bank fees:** The major banks buy out smaller/regional competitors such as Bank West and Bank of Melbourne
33	**34**	**35**	**36**
Electric vehicles: the price of petrol and diesel rises significantly due to the global oil shortage	**Apple Music:** tough new anti-pirating legislation is introduced that works to limit 'illegal' downloading of music	**Corn:** More and more corn is used as a bio-fuel for motor vehicles	**Houses:** The closure of borders during 2020 causes a significant reduction in immigration numbers
37	**38**	**39**	**40**
Solar Panels The Victorian Government provides a $2250 cash grant(consumer subsidy) on solar panels	**Toyota motor cars:** Toyota recalls several motor vehicles due to faulty accelerators and Toyota publicly admit that the cause is unknown	**Newspapers:** More and more people are using their tablets and/or the internet to read the news	**Toilet paper:** People panic during early 2020 in response to the emergence of the COVD-19 pandemic
41	**42**	**43**	**44**
Marijuana: Marijuana is decriminalised for recreational use	**Apartments:** The price of houses increases to record levels	**Commercial properties:** Working from home becomes the new norm in Australian workplaces	**Iron ore:** China scales down its production of steel
45	**46**	**47**	**48**
Illicit drugs: Excise tax on alcohol increases	**Coal fired electricity:** The government raises the price of carbon emissions (via an excise tax)	**Rental markets:** Regulations are introduced which favour tenants over landlords	**Solar panels:** The government gives subsidies to solar panel producers
49	**50**		
Streaming services: More providers enter the market to compete with Netflix, Stan, Disney, etc.	**Bicycles:** The Victorian government invests heavily in infrastructure to improve the safety of riders		

Answers on page 154

The meaning and significance of price elasticity of demand

The price elasticity of demand (PED) refers to the responsiveness of total quantity demanded of a product to a change in the price of that product. The PED determines the slope or gradient of the demand curve, with the slope flattening out as the PED increases and the slope steepening as the PED falls.





Factors affecting price elasticity of demand, including degree of necessity, availability of substitutes, proportion of income and time

There are many factors that determine the PED for particular products. For example, each of the following 'hypothetical' factors is likely to increase the PED (i.e. flatten the demand curve) for 'Samsung' mobile phones:

- *There is a rise in the **number of competing products or substitutes** in the market (e.g. IBM and Apple enter the mobile phone market);*
- *A Samsung mobile phone is no longer considered a **necessity** but a **luxury** item;*
- *There is a rise in **price of Samsung mobile phones relative to incomes** (e.g. due to a fall in average incomes).*
- *The **time** available to find alternative options/ substitutes. The more **time** available the more elastic (flatter) will be the demand curve.*
- Samsung decreases its **advertising expenditure** significantly or its advertising campaigns have become much less effective; and
- A **government report** reveals that Samsung produced mobile phones may increase the incidence of brain tumours;

Exam Tip: The 2023 Study Design only requires a knowledge of the underlined factors above. However, a knowledge of additional factors might prove to be useful in the examination.

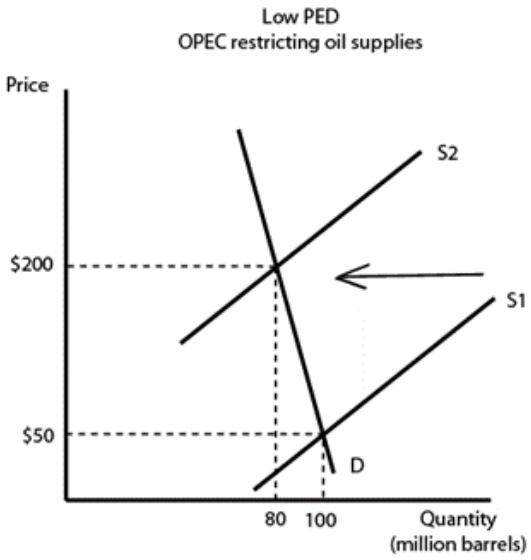
Exam Tip: Students should remember not to confuse these factors for a shift in the demand curve. For example an increase in the availability of substitutes would affect the PED whereas the price of substitutes would shift the whole demand curve.

Exam Tip: In the 2019 exam, Q1c asked students to explain if the demand for housing would be price elastic or price inelastic. Given that there are valid arguments either way (partly depending on how we define a 'house'), the identification of either a low or high PED was relatively unimportant in the context of the question. Two more important considerations were, first, whether students were able to justify their position with reference to the factors affecting PED. For example, one could argue that a low PED exists because houses, as shelter for people, are necessities. Alternatively, one could argue that a high PED exists because (the purchase of) houses has ample substitutes (e.g. flats, apartments or even renting) or houses represent a high proportion of household income. The second important consideration was whether students were able to demonstrate an understanding of PED. Vague statements referring to a simple relationship between price and QD (i.e. describing the law of demand) will have been insufficient in the context of the question.

Ideally, every business would love to have the steepest demand curve imaginable. This would enable it to restrict supply, raise prices and maximise profits. Typically, businesses in highly concentrated markets (i.e. where there are few suppliers), such as a monopoly (one seller) or oligopoly (few sellers) are the ones experiencing low PEDs. By raising prices or restricting supply, these businesses can increase total revenue and profit because a much higher price only causes a relatively small reduction in quantity demanded. Conversely, those businesses in highly competitive markets, where there is a high PED, will find that raising prices only

works to reduce total revenue and profit. Accordingly, their strategies will focus on becoming more price competitive and attracting consumer loyalty and brand allegiance in order to reduce their PED over time.

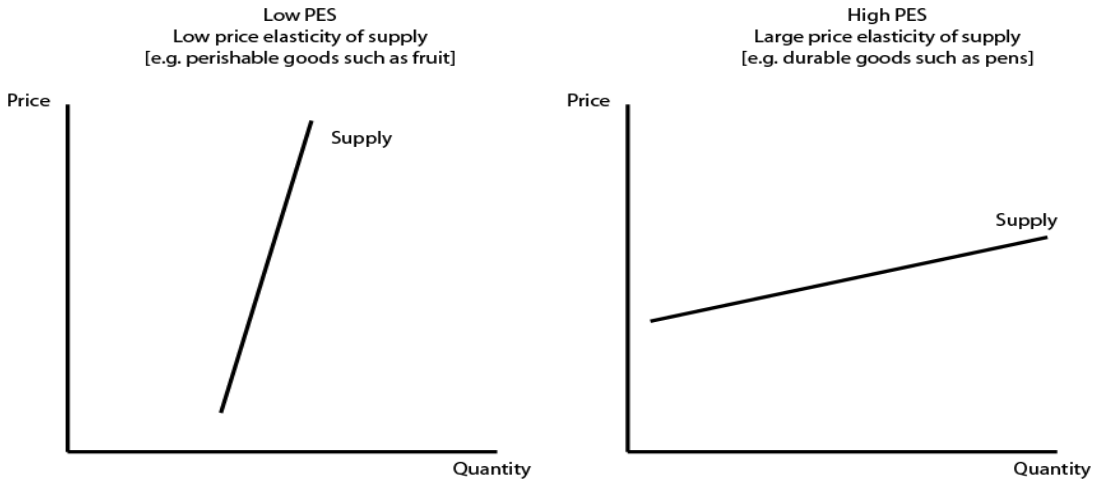
A product is said to have a high PED if the % change in price causes a larger % change in quantity demanded (for example a 10% increase in price that leads to a 30% fall in demand). A product is said to have a low PED if the % change in price causes a smaller % change in quantity demanded (for example a 10% increase in price leads to a 5% fall in demand). If the % change in price leads to an equal % change in demand this is called unit elasticity. For example, OPEC is a grouping of countries that controls a large percentage of world oil supplies. Hypothetically, let's assume oil prices are an average $50 per barrel. If OPEC raises the price from $50 to $200 (300%) by restricting output (shifting the S curve to the left), it only results in a relatively small reduction in the quantity demanded from 100 to 80 barrels per day (20%) because it is a need and there are few (easy) substitutes so consumers have little choice but to pay the higher prices. This reflects a very low PED as the % change in the QD (20%) is much smaller than the % change in price (300%). This strategy is highly profit maximising because it increases total revenue (P X Q) from $5 trillion ($50 X 100m = $5,000,000,000) to $16 trillion ($200 X 80 = $16,000,000,000). The reverse will apply in the event that a business has a high PED. In this case, a profit maximising strategy is to lower prices in the face of stiffer competition.



Exam Tip: Question 6 of the 2022 exam required students to determine which of the following four goods had the highest PED (most elastic); cigarettes, haircuts, soft drinks and international travel. Most students correctly eliminated cigarettes and haircuts owing to the 'degree of necessity' for both that makes the PED relatively low (inelastic). However, some students struggled to separate soft drinks and international travel. In these situations, it is useful to remember the factors affecting the PED and determine their relevance for the goods in question. In relation to 'proportion of income', international travel is likely to be more price elastic owing to the high cost of travel. In relation to 'degree of necessity', international travel is likely to be more price elastic owing to the fact that it is more likely to be a luxury, on average, compared to soft drinks, which also have an addictive element owing to the high sugar content. In relation to 'availability of substitutes', it can be argued either way, but remember that the question refers to 'soft drinks', not a brand of soft drink – the latter being more price elastic than the former. On balance, international travel has a higher PED than generic soft drinks.

The meaning and significance of price elasticity of supply

The price elasticity of supply (PES) refers to the responsiveness of total quantity supplied of a product to a change in the price of that product. The PES determines the slope or gradient of the supply curve, with the slope flattening out as the PES increases and the slope steepening as the PES falls.



Factors affecting price elasticity of supply, including spare capacity, production period and durability of goods

There are many factors that determine the PES for particular products. For example, each of the following 'hypothetical' factors is likely to increase the PES (i.e. flatten the supply curve) for 'Samsung' mobile phones:

- The ***'production period'*** falls (i.e. it takes less time to produce the phones), enabling Samsung to respond more easily to price signals;
- Production technology improves such that Samsung's mobile phones can be stored for longer before erosion occurs, increasing '***durability',*** or reducing 'perishability' (Note that in reality, this factor applies more to perishable goods, such as food, rather than products like mobile phones.);
- Samsung boosts the size of its production facility such that there is more ***'spare capacity'***, enabling the business to more easily respond to higher market prices (by raising output) as there exists relatively more capital resources that are being underutilised.

Anything that affects suppliers' willingness or ability to increase (or decrease) production volumes when there is an increase (or decrease) in the market price for the product will be a factor determining the PES.

Exam Tip: Question 3(e) of the 2021 exam asked students to 'explain one factor that would affect the price elasticity of supply of fish' (3 marks). Students should remember that it is not enough to outline 'a factor' without demonstrating a knowledge of how this factor influences the PES and it is also important to demonstrate an understanding of the PES along the way. For example, a student would not receive full marks with a response such as: 'the time it takes to produce fish (i.e. the production period) is a factor that will affect the PES of fish'. Students need to expand by saying that '….a lenghty production period will mean that it takes a relatively long time for producers to respond to price signals, which results in a low PES such that any given increase in price will result in a smaller proportional change in the quantity of fish supplied to the market.'

REVIEW/APPLICATION QUESTIONS 2 – the market or price mechanism

1. ***Explain why the demand curve is downward sloping and the supply curve is upward sloping.***
2. ***Draw a rough demand & supply diagram for 'solar panels', highlighting the equilibrium point and explaining it is referred to as 'equilibrium'.***
3. ***Analyse how the market for solar panels responds when the price is above equilibrium.***
4. ***Analyse how the market for solar panels responds when the price is below equilibrium.***
5. ***Distinguish a shift of the demand curve from a movement along the demand curve***
6. ***Describe two hypothetical factors that might cause the demand curve for solar panels to shift to the right and outline how this is likely to affect the price of water tanks, production of solar panels and the allocation of resources in the economy.***
7. ***Distinguish a shift of the supply curve from a movement along the supply curve.***
8. ***Describe two hypothetical factors that might cause the supply curve for solar panels to shift to the right and outline how this is likely to affect the price of water tanks, production of solar panels and the allocation of resources in the economy.***
9. ***Explain how a farmer that can produce both wheat and quinoa will be likely to respond to an increase in demand for quinoa due to reported health benefits such as increased antioxidants.***
10. ***Define the terms price elasticity of demand (PED) and price elasticity of supply (PES).***
11. ***Describe one factor that could reduce the PED for solar panels.***
12. ***Analyse how a lower PED for solar panels is likely to affect the price, production and profits when the supply curve shifts to the left.***
13. ***Explain how the PED for petrol is likely to change if a new scientific process for making synthetic petrol from algae becomes competitive with petrol prices.***
14. ***Discuss how the PES for algae based fuels is likely to change if production time accelerates and the synthetic petrol can be easily stored.***
15. ***Evaluate whether a business would prefer to produce in a market where there is a low PED and a high PES or high PED and low PES.***
16. ***Draw separate D/S graphs for the events below, examine the impact on the market equilibrium in terms of prices, production levels and resource allocation (Tip: you must shift one of the curves for each example.)***

i. ***In the market for wine, there is a heat wave affecting the size of wine grape harvests.***
ii. ***In the pear market, the price of apples (a substitute) decreases significantly following more NZ imports.***
iii. ***In the market for electricity, the carbon tax raises the costs of production.***
iv. ***In the market for iron ore, there is a substantial fall in global steel production.***
v. ***In the market for housing, the government removes the capital gains tax concessions applying to owner occupied dwellings.***
vi. ***In the market for cotton, Queensland floods damage more than 50% of cotton crops.***
vii. ***In the market for shares, the government increases the superannuation guarantee levy to 12%.***
viii. ***In the market for Australian sheep, there is a large fall in the value of the Australian dollar.***
ix. ***In the market for crude oil, the USA producers are able to extract significantly more oil from the ground.***
x. ***In the markets for Australian beef and wine, China imposes trade restrictions (e.g. tariffs) for political purposes.***
xi. ***In the market for educational services, the closing of international borders prevents foreign students entering Australia.***
xii. ***In the market for pet food, COVID-19 has caused the demand for pets to increase.***
xiii. ***In the market for alcohol, social distancing and lockdown measures changed drinking habits during 2020.***

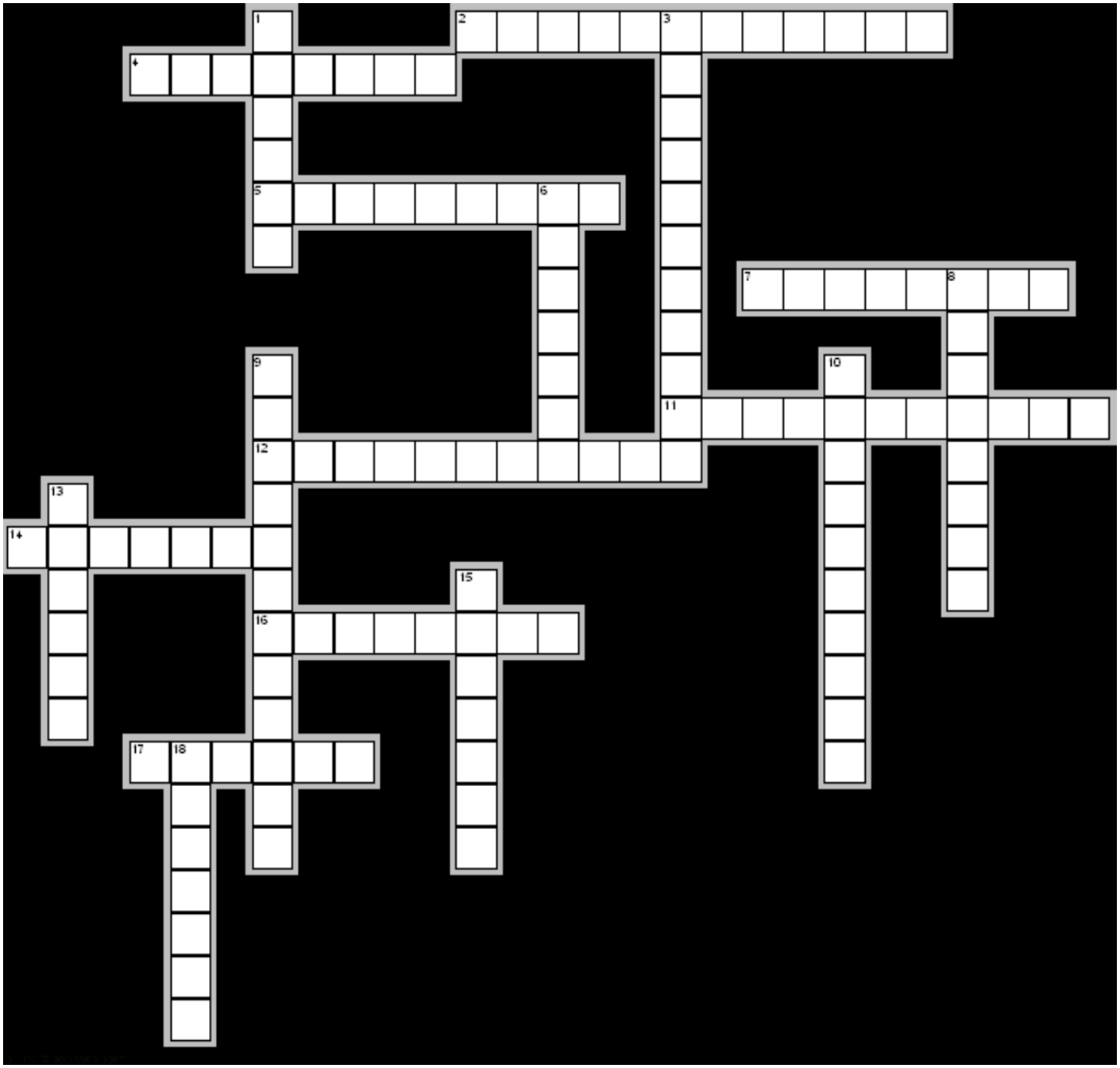
Quick revision crossword No 2
The market or price mechanism

Across

2. This occurs when prices are too high (2 words)
4. A term used to describe an excess demand in markets
5. Every business would love this type of demand curve
7. The type of relationship between price and supply
11. There is no pressure for price to change from this level unless there is a shift in demand or supply.
12. A rise in the price of these will cause the demand for a product to fall
14. A term used to describe an excess supply
16. When supply increases this will cause price to do this
17. The willingness of consumer(s) to purchase a good or service for a price

Down

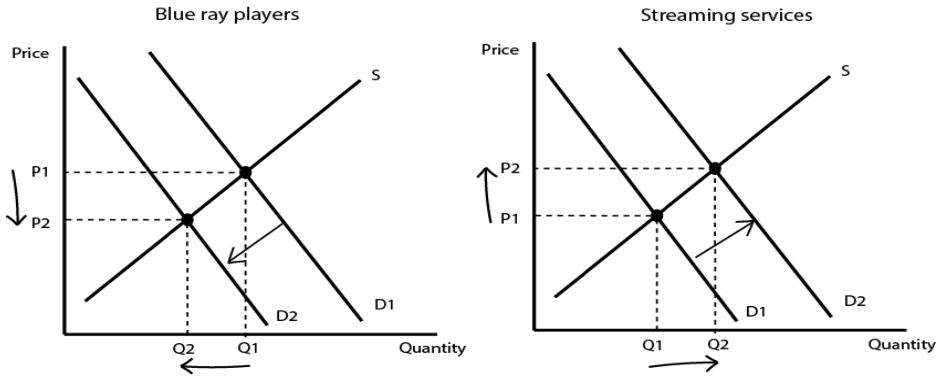
1. The supply curve slopes upwards because suppliers see a greater potential to make this
3. A rise in the price of these will cause the demand for a product to rise
6. The type of relationship between price and demand
8. When demand increases in a market this will cause price to do this
9. This occurs when prices are too low (2 words)
10. A term used to describe the responsiveness of the quantity demanded or supplied to a change in price
13. The willingness of suppliers to sell a good or service at a price
15. Where buyers and sellers of goods or services come together in exchange
18. Very competitive markets will result businesses having this type of demand curve



The role of relative prices in markets on the allocation of resources

The market or *price mechanism* describes how the forces of demand and supply determine (**relative**) prices of goods and services which then ultimately determines the way our productive resources (e.g. labour and capital) are allocated in the economy. As prices change in various markets, for example, because demand is very strong, it sends a signal to suppliers that profit opportunities exist if they direct resources, such as labour and capital, into those areas experiencing higher demand.

For example, with advances in technology, some products become obsolete relatively quickly. Take for instance streaming services replacing blu-ray players. In the market, we would have observed the following:

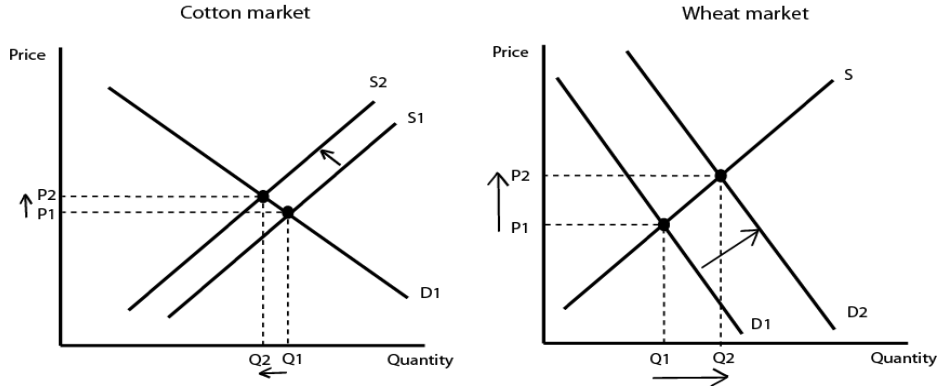


The changing conditions in this market (the invention and demand for streaming services like Netflix or Stan) caused a change in the relative prices of goods and services. The price of Blu-ray players will fall relative to the price of streaming services because fewer consumers are demanding Blu-ray players and instead demanding streaming services. This is reflected in the demand curve for Blu-ray players shifting from D1 to D2 and the demand for streaming services from D1 to D2. Suppliers (like Panasonic or Sony) will then devote fewer resources (e.g. labour and capital) to the production of the blue-ray players, which is reflected in a contraction along the supply curve and less production (Q1 to Q2). In contrast, suppliers will devote more resources to the production of streaming services as the demand and price has increased. This is reflected in an expansion along the supply curve for streaming services and more production (Q1 to Q2)

Exam Tip: Students need to appreciate the significance of relative prices as opposed to prices. It is a change in relative prices that causes a reallocation of resources because it results in a likely change in the 'profitability' or 'attractiveness' of one product over another. For example, if the demand for cherries increased, which caused the price of cherries to rise relative to the price of tomatoes, it should result in more resources being allocated to cherry production and less to tomato production as producers will be incentivised by greater profit opportunities in cherry production. However, if the prices of cherries, tomatoes and all other products increased by the same amount (i.e. inflation), there is no change in relative prices and no signal for a change in the allocation of resources. Note that it is possible for the relative price of cherries to increase even if there has been no change in the price of cherries at all!!

Exam Tip: In the 2022 exam, students were asked to 'illustrate and analyse how one form of government intervention might lead to a change in relative prices and the allocation of resources'. Many students were able to explain how a change in demand, such as one caused by the provision of a consumer or government advertising, would raise relative prices and therefore encourage suppliers to supply more resources to that market. However, many students became confused when attempting to unpack the impact of supply side initiatives. For example, students found it difficult to reconcile how a producer subsidy causes suppliers to allocate more resources to the production of a product even when the price of the product falls. Students need to consider the 'cause' of any change in (relative) prices and then focus on what happens on the x-axis of the D/S diagram (i.e. focus on the quantity) to determine how resources are (re) allocated. In the case of a consumer subsidy, it is the higher demand that is driving the higher price and more resources allocated to its production. In the case of a producer subsidy, it is the (greater supply and) lower price that is driving higher demand and more resources allocated to its production.

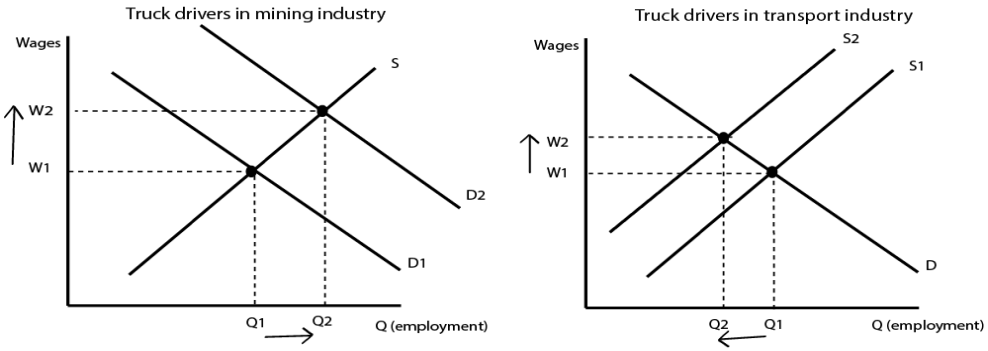
Another example relates to the use of crops in fuel production. The growing demand for wheat for use in ethanol (fuel) production has caused resources to be allocated away from the production of other fuels (e.g. petrol) and towards the production of ethanol. This scenario is just like that for Blu-rays and streaming services. However, what has happened to prices and resource allocation in agricultural markets? The higher relative price for wheat has encouraged farmers to reallocate their resources (land and water, capital and labour) away from the production of other crops (like cotton) and towards the production of wheat. In the cotton market, the exit of suppliers results in excess demand for cotton, forcing the price to rise, but not by as much as the rise in wheat prices. This results in an overall higher relative price for wheat, but higher overall prices for a range of agricultural commodities, causing higher agricultural prices relative to other prices in the economy. This has placed upward pressure on food prices around the world. This situation is depicted in the D/S diagrams below:



These types of shifts or changes in the way resources are allocated occur every minute of every day in an economy as a result of changes in relative prices, which are in turn caused by shifts in demand or supply.

Take another example relating to the price of labour. During the mining boom experienced in Australia, the demand for mining workers increased. In order to attract mining workers to remote parts of Australia, the mining companies were forced to offer higher rates of remuneration. This resulted in a higher relative price of mining labour (i.e. a higher wage) relative to non-mining labour, causing a re-allocation of labour resources towards the mining industry. For example, a truck driver earning a $60,000 wage in Victoria may observe that the wage for a truck driver on a Western Australian mine increased from $90,000 to $120,000. This increase in the 'relative price' of mining labour may have been enough to entice him to quit his job in Victoria and offer his services to a WA mine. It is the change in relative prices (in this case, the relative price of labour) that ultimately resulted in a re-allocation of the nation's labour resources from non-mining states to mining states during the boom. This is illustrated in the demand and supply diagrams below:

The market for truck drivers in the mining and transport industries during the mining boom



More recent examples relate to the change in relative prices over 2020-21 in response to the COVID-19 pandemic. In the initial stages of the pandemic, the price of toilet paper increased as panic buying occurred within many Australian households who feared that the pandemic would result in widespread shortages. This caused a relatively large spike in the demand for toilet paper, which as illustrated in the adjacent diagram, caused the demand to increase from D1 to D2. This led to shortages of toilet paper at the pre-existing price of P1, which then resulted in producers raising the price to a level that ultimately eliminated the shortage (i.e. at P2). This caused a change in relative prices, with the price of toilet paper increasing compared to the price of other goods, such as those other goods produced by toilet paper manufacturers [e.g. tissues, paper towels, nappy wipes etc]. This sent a signal to manufacturers that higher profits could be made by producing more toilet paper, and they therefore decided to allocate more of their productive resources (e.g. machinery and labour) to the production of toilet paper which resulted in toilet paper production increasing from Q1 to Q2.

Other 2020-21 changes induced by the COVID-19 pandemic included the increased demand for products like hand sanitisers and face masks. In relation to hand sanitisers specifically, producers of alcohol and industrial cleaning products will have seen shortages develop, which increased the price of hand sanitisers relative to the price of other goods and services. This effectively meant that the relative price of their own products (alcohol/cleaning products) will have fallen and the opportunity cost associated with the production of its existing product base [alcohol/cleaning products] will have increased. This created an incentive to reallocate some of their productive resources (such as labour and machinery) away from the production of alcohol (or cleaning products) and towards the production of the relatively more profitable hand sanitiser whose relative price increased.

Exam Tip: The key skills listed in the Study Design require students to construct and interpret demand and supply diagrams. It will therefore be important that students can not only draw a D/S diagram, but show and explain how various factors will cause the curves to shift and how a new equilibrium is achieved. Students will need to be able to explain the shifts of curves and the expansion or contraction along the curves required to bring the market back into equilibrium (disequilibrium analysis).

Exam Tip: During examinations, students typically struggle to demonstrate an understanding of the price mechanism and, in particular, how changes in relative prices play an important role in influencing the allocation of resources. In the 2020 examination, students were required to 'explain how an increase in demand for a product might result in a change in relative prices, and explain how this would influence resource allocation and living standards'. Typically, students simply refer to changes in prices, without referring to relative prices, which prevents full marks being awarded. Importantly, students need to explain how the change in relative prices results in resources moving from one activity to another, with 'price signals' and the potential of greater profit being the key driving forces. The best responses will typically be those that use concrete examples (e.g. hand sanitisers/face masks during 2020) to illustrate their response.

The role of free and competitive markets in promoting an efficient allocation of resources and improved living standards

The market structure that underpins demand and supply analysis is "**perfect competition**" often referred to as **competitive markets**. How well we use our resources will influence the quality and quantity of goods and services that an economy can produce and hence how effectively resources are used to improve living standards. The degree of competition will influence how resources are used, but it is important to remember that consumers often desire goods or services that are frequently not in their long term interests (e.g. guns, illicit drugs, tobacco, excessive alcohol consumption, problem gambling, "dirty" production methods, etc.) and governments will intervene to address these (and other) 'market failures' in an effort to achieve a more efficient allocation of resources.

Features of a free and competitive market

Earlier, we discussed the characteristics of a free and perfectly competitive markets and listed a number of conditions or assumptions for perfect competition to exist, such as a large number of buyers and sellers, product homogeneity, perfect information, freedom of entry into & exit from a market and lack of government intervention. We then said that the nature of a perfectly competitive market will be characterised by low costs, low prices, high levels of efficiency and no individual business being able to control or manipulate prices. As we depart from these hypothetical conditions, it should be apparent that the nature of the market changes, with implications for prices, efficiency and living standards.

As the number of suppliers in a market falls, the market will become more "concentrated", and the reduced levels of competition provides producers with greater opportunity to manipulate the price and/or quantity and therefore become **price makers**. The closest "market structure" to perfect competition is "**monopolistic competition**" where there are many buyers and sellers, ease of entry and exit and perfect information, but businesses do differentiate their product via methods such as advertising, promotions, product positioning, location, etc. The market structure that is most highly concentrated, and therefore the furthest away from perfect competition, is monopoly. [The relevance of market structures when examining the relationship between markets and efficiency is examined as extension on page 29.]

The role of free and competitive markets in promoting an efficient allocation of resources and improved living standards

The degree of competition within a market will influence the allocation of resources. In a competitive market where there are many buyers and sellers with easy access to enter or exit the market, and perfect information, producers will quickly alter how they use resources depending on where consumer demand is directed (consumer sovereignty). As consumer tastes and preferences change, then this ultimately leads to a change in relative prices and profit opportunities and results in a reallocation of resources towards the more desired output (e.g. relative price will rise and profit opportunities increase). Recall that **allocative efficiency** refers to producing goods and services that best satisfy the needs and wants of society as a whole. In a perfectly competitive market, if producers do not alter their production to satisfy the change in demand, a competitor will enter the market to meet that demand and increase their own profits. As such, given that all firms are assumed to have perfect information, they will recognise that higher profits will be made by producing what ***is*** in demand rather than what ***was*** in demand.

This will have the effect of boosting **dynamic efficiency** because firms will need to alter their own use of resources to meet the change in demand. If a firm is slow to meet changing demand then their competitors will happily extract the higher profits available by altering their own use of resources towards the production of more profitable goods and/or services. The relative speed with which producers of alcohol and/or cleaning products were able to pivot towards the product of hand sanitiser over 2020-21 is an example of a relatively high level of dynamic efficiency being displayed by Australian producers.

As firms compete on price, due to a lack of product differentiation (i.e. homogenous products), consumers will buy from the cheapest supplier (as consumers also have perfect knowledge) and firms are **price takers** (i.e**.** cannot set prices because of many sellers competing). This means that firms will need to produce using the lowest cost production methods. If a competitor finds a way to reduce input costs of production, then they can increase market share by lowering prices and increasing profit. It will therefore be in the interests of all firms to produce at the lowest cost price, which helps to maximise **productive/technical efficiency**.

Intertemporal efficiency relates to achieving the best balance between resources used for current and future consumption, such that living standards in the long term are not unduly damaged by current actions. Given that competitive markets are more likely to be conducive to maximising technical efficiency, to the extent that this results in businesses using fewer resources to produce any given combination of goods and services, it has the potential to increase the availability of resources for future generations, therefore improving intertemporal efficiency.

Similarly, competitive markets are likely to result in greater levels of capital investment as firms continually seek to gain a competitive advantage against their rivals. It is important that an economy maintains, and indeed increases, its stock of "capital" (human-made resources required to produce goods and services, such as machinery) which boosts or maintains our productive capacity and our ability to be dynamically efficient. A lack of capital investment will typically mean that more will be spent on consumption now, but at the expense of future production, as the stock of capital from which goods and services are produced wears out and is not replaced. Indeed, **capital deepening** (i.e. increasing the stock of capital available for production) is important now and in the future, helping us to achieve intertemporal efficiency.

However, it is indeed possible for competitive markets to have a negative impact on intertemporal efficiency to the extent that competitive pressures result in firms adopting production practices that threaten the environment or sustainability. Attempts by businesses to reduce production costs might lead to the use of inputs that result in third party (or social/environmental) costs that ultimately reduce our ability to produce goods and services in the future. For example, it is far cheaper to just pump pollution into the atmosphere or rivers over the short term. [This relates to market failures and negative externalities which will be covered shortly.]

Exam Tip: In perfectly competitive markets, businesses can only earn 'normal profits' in the long run. This means that the profit is just enough to provide incentive for the business to remain a going concern. Profit levels below 'normal profits' will encourage firms to exit the industry. Profits levels above 'normal profits' (sometimes called 'super-normal profits') will encourage entry of firms into the industry, thereby working to reduce industry profits back towards normal levels. Note that students are not required to demonstrate an understanding of normal/abnormal/super-normal profits in the current VCE Economics course.

Extension: The relevance of market structures when examining the relationship between markets and efficiency –

An alternative way to consider how competitive markets influence the efficiency of resource use is to consider what will happen in the absence of competitive markets. As a market becomes less competitive, the efficiency in the allocation of resources is likely to fall, providing incentives for governments to promote competition and reduce the incidence of anti-competitive behavior. Imagine what would happen if the market was highly concentrated, with one firm dominating the market, and the demand for a product increased? In a competitive environment, new suppliers would enter the market to meet the new demand. In this respect, firms in a competitive market would be '**price takers',** as they are limited in their power to raise prices. This is because any attempts to raise prices would result in a loss of market share and profits to the new entrants. However, in the case of a **monopoly**, supply can be maintained at current levels (or even further restricted), creating a shortage and forcing up the price. This enables the monopolist to increase profit at the expense of consumers. Technically, this means that the monopoly producer is able to increase the **'producer surplus'** by eroding any **'consumer surplus'** that exists when goods and services are purchased.

Exam Tip: A consumer surplus refers to the benefits that consumers receive when they purchase a product at a price that is lower than the value they place on the product (or the price they would be willing to pay). A producer surplus is effectively the difference between the price of a product and the marginal costs of production (or the price they would be willing to sell the product). Without competition to discipline a monopolist, the price charged will be higher, thereby eroding some of the consumer surplus and increasing the producer surplus. However, students are extremely unlikely to be asked about a consumer/producer surplus in the VCE examination and these terms are not specifically mentioned in the current study design.

Exam Tip: The current Study Design no longer makes specific reference to market structures, apart from perfect competition. Students are therefore not expected to demonstrate an understanding of monopolistic competition, oligopoly or monopoly. Instead, students are required to demonstrate an understanding of *'the role of free and competitive markets in promoting an efficient allocation of resources'*. In this respect, making reference to other market structures when discussing the effect on prices or efficiency can be useful in the examination. For example, when attempting to highlight why a very competitive market is likely to result in lower prices (and higher efficiency) it makes perfect sense to contrast the effects stemming from a (perfectly) competitive market structure with those that are likely to occur in a more concentrated market structure, such as oligopoly or monopoly.

Overall, the monopolist has what is regarded as '**market power**' and is therefore a **'price maker.**' It has the power to raise prices without compromising its market share (as it has a 100% share of the market) and/or level of profit. Indeed, as discussed earlier, a monopolist with a low price elasticity of demand has incentive to raise prices because it will lead to higher total revenue and profits. This is often considered to be an 'abuse of market power', which is an example of a market failure (but not one that is listed in the Study Design) that can be referred to when evaluating the role of markets in allocating resources.

A monopoly will typically result in an underallocation of resources to the production of a product, which means that '***allocative efficiency***' is not achieved. This is because the higher price reduces demand and leads to fewer resources being allocated to the production of the product compared to the outcome that would be expected in a more competitive market. Accordingly, there will be some consumers that are 'priced out of the market' by a monopolist's pricing decisions, causing this group of consumers to be 'worse-off' compared to the situation that would exist under a more competitive environment.

In addition, efficiency of production (e.g. productivity) may fall over time in the face of zero competition, as was the experience when Telstra was the sole supplier of telecommunications services in Australia. In addition, the monopolist is more likely to experience ***technical inefficiency*** because it has less incentive to ensure that its existing resources are used most effectively and hence technical/productive efficiency is not achieved. Complacency is more likely to set in and the monopolist may tolerate creeping inefficiencies that work to raise average costs, knowing that it can simply pass the higher costs to consumers. Reduced technical efficiency may also mean that resources are used up more quickly, compromising the achievement of **intertemporal efficiency.**

Accordingly, a highly concentrated market structure will tend to result in a misallocation of resources and a deterioration of average living standards, as Australians will be forced to pay higher prices for goods and services. In addition, a highly concentrated market structure leads to a more inequitable **distribution of income** over time, as a relatively small number of firms (and their owners) will reap the benefits of higher profits (super-normal profits) that stem from the erosion of consumer surpluses and the increase in producer surpluses.

Exam Tip: As noted earlier, Question 1a of the 2017 exam asked students to explain one effect of competitive markets on the efficiency of resource allocation. The best responses were those where 'a characteristic of competitive markets' was directly linked to its 'impact on efficiency'. For example, 'ease of entry and exit' ensures that resources can (quickly) flow towards area of greater demand (consumer sovereignty), boosting dynamic and allocative efficiency. Similarly, 'a large number of sellers' forces firms to compete aggressively on price, which helps to boost productivity (as a means of reducing costs and prices) and improves technical efficiency.

Exam Tip: Question 4C of the 2020 exam required students to describe both a strength and a weakness associated with the use of markets to allocate resources. Students needed to demonstrate an understanding of why/how markets are particularly effective at allocating resources (e.g. linking more competitive markets with higher levels of technical/allocative/dynamic efficiency and lower prices) and they should have recognised that the question was not about 'how' the market allocates resources (which was the subject of the previous question). In the case of weaknesses, students should have recognised the link to market failures (e.g. why the market does not always do a great job in achieving allocative efficiency).

Free and competitive markets and the impact on living standards

Economics is the study of how to allocate scarce resources to maximise living standards. Typically, we break living standards into two categories; material and non-material living standards.

Material living standards refer to individuals' access to goods and services (either bought or provided by governments or other providers). Real GDP per capita (or income per capita) gives an indication of the purchasing power of individuals in an economy. The higher a person's income the more goods and services they can consume and the higher their material standard of living will be.

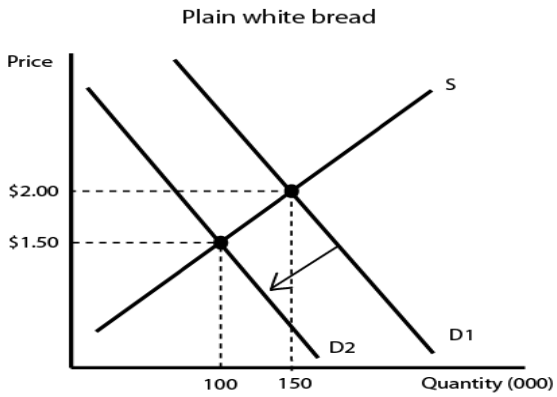
However, our living standards are influenced by more than just how much we are able to "consume", and increasingly, economists are taking into account the influence that "**non-material**" factors can have on our quality of life. For example, how crime and social unrest can influence our quality of life, as well as the degree or level of pollution in terms of air quality, water quality and noise. Many people who earn a high income have access to high material living standards but may have little leisure time to spend with their families or doing things that bring them pleasure, like bush walking or surfing. Equally, those unemployed or underemployed may have lots of "leisure" time, but access to material goods and services is likely to be much lower than those on high incomes.

Increasingly mental health is becoming recognised as an issue influencing our living standards and it is commonly believed that worthwhile employment provides a sense of purpose and value that tends to increase individuals' wellbeing. To some extent, a trade-off does exist between "work and play", and ideally, people will be free to choose how to allocate their own resources (e.g. their labour services) to maximise their standard of living.

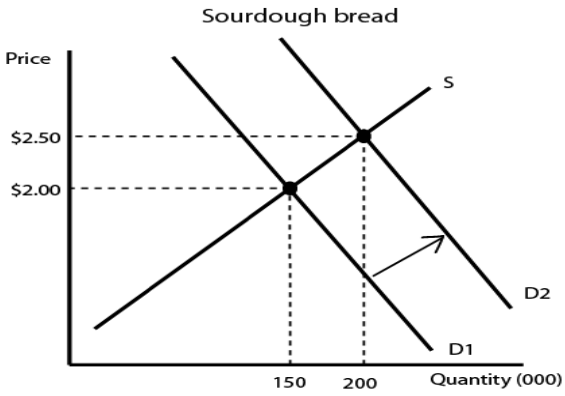
In our modern market capitalist economy, the three key economic questions of what, how and for whom to produce are typically answered via the price mechanism. Price is used to ration "scarce" goods and services such that resources will be allocated or used to maximise profits. However, in a competitive market this must involve producing what consumers wish to buy. If producers use resources to produce a good or service that is not in demand then profits will not be maximised and they will quickly reallocate resources to areas of greater demand – this is particularly true in a 'perfectly competitive' market, where it is assumed that economic agents have perfect information and there is perfect mobility of resources. Price changes then act to clear markets and ensure that as our desires and preferences change, producers are incentivised to alter their own behavior. Essentially, if markets are not producing what consumers want, then resources are not being used in a way that maximises living standards. [However, as will be discussed later, consumers do not always desire what is in the "interests of society", which at times requires government intervention to correct the market failure. Common examples include smoking, vaping, and illicit drugs.]

Throughout the economy, prices will be set for all goods and services. This means that any two goods or services can be compared or related to each other in terms of price. For instance, if a skateboard costs $50 and a bike costs $200, then the relative price of bikes to skateboards is 200/50 or 4:1. If there is an increase in the demand for skateboards then the price mechanism will ensure that the price of skateboards rise, let's say to $100, which results in a fall in the relative price of bikes. Producers are then incentivised to allocate fewer resources to the production of bikes (whose relative price has fallen) and more resources to the production of skateboards (whose relative price has risen). Failure to respond to the price signals in this way would not be rational as the opportunity costs associated with the production of bikes has increased and it would be profit maximising to allocate more resources to the production of skateboards.

Using demand and supply diagrams to illustrate, let's assume that bakers can use their resources to make plain white bread or sour dough bread. If the demand for sourdough bread increases (i.e. the demand curve shifts to the right), then the higher equilibrium price will, ceteris paribus, increase the profit available from producing sourdough bread compared to plain white bread. As a consequence, resources will move away from making the less profitable white bread towards the more profitable sourdough bread. The change in how resources are now used in the economy is "allocatively" efficient because it reflects society's changed preferences. In other words, the market has resulted in resources better satisfying society's needs and wants. This is illustrated in the diagram below.



Lower demand for white bread causes the (relative) price of white bread to fall which causes bakers to produce 50,000 fewer loaves of white bread. ***Less*** resources (e.g. labour and machinery) are used in the production of white bread. Note that the relative price of white bread has fallen from 1:1 to 1.5:2.5



The higher demand for sourdough bread causes the (relative) price of sourdough bread to rise which encourages bakers to produce an additional 50,000 loaves of sourdough. ***More*** resources (e.g. labour and machinery) are used in the production of sourdough bread. Note that the relative price of sourdough bread has risen from 1:1 to 2.5:1.5

The same analysis can be applied to the changes in demand and relative prices that occurred over the course of 2020-1. The ability of markets to quickly re-allocate resources to the production of much needed products such as hand sanitisers, face masks and personal protective equipment, was an example of a dynamically efficient economy, one which was quickly able to reallocate resources in such a way that allocative efficiency was achieved. The increased production (and consumption) of these products enhanced living standards above that which would have otherwise occurred during the COVID-19 pandemic.

Exam Tip: In the 2020 examination, students were required to 'explain how an increase in demand for a product might result in a change in relative prices, and explain how this would influence resource allocation and living standards'. The reference to living standards in the final part of the question proved problematic for some students. The best responses will have been those that linked the increased demand for the product (and change in relative prices) to consumer satisfaction/welfare becoming better off given that resources can flow to the production of goods and services demanded by society such that consumer satisfaction is maximised and allocative efficiency is more likely to be achieved.

Markets are typically dynamic, with demand and supply factors changing frequently. A change in the cost of production will alter the profit being made by producers and hence the relative profit (the profit from one product compared to another) and the quantity producers wish to produce. This in turn will lead to more resources being allocated towards the more profitable products and away from the relatively lower priced or less profitable products. Hence, the price mechanism will answer the question of "**what to produce**". The market will also ensure that goods and services are produced via the least cost method (**how to produce)** because if a producer finds a way to cut production costs (e.g. via the employment of new technology) it can reduce prices while maintaining the same profit margin and attract consumers. Consumers will therefore buy from the lowest cost producer, forcing other producers to also change the way they produce goods and services in order to achieve similar cost reductions (to do otherwise would ultimately result in reduced profits and potential exit from the market).

The "**for whom to produce**" question will be decided by consumer choices and incomes and their willingness to pay for various products, which in turn determines where resources will be allocated. As such the price mechanism will adjust to changes in demand and supply, to alter the relative price and relative profit so that resources do flow towards the production of goods and services that are in demand and hence satisfy society's needs and wants. However, markets do not always allocate resources in a way that maximises living standards – i.e. in a way that best satisfies the needs and wants of society as a whole. This means that when discussing the relationship between relative prices and living standards, it is always important to consider what happens when **markets fail** to allocate resources effectively, which is covered later in the Study Guide.

REVIEW/APPLICATION QUESTIONS 3 – Competitive markets and efficiency

1. ***Define the price or market mechanism.***
2. ***Identify three key assumptions for a free and perfectly competitive market to exist.***
3. ***Distinguish a price taker from a price maker.***
4. ***Distinguish between material and non-material living standards***
5. ***Explain how the price mechanism works to allocates more resources to the production of solar panels once a consumer subsidy is introduced. Distinguish this from the impact generated by a producer subsidy.***
6. ***Discuss how the price mechanism is used to answer the three key economic questions of what, how and for whom to produce. Tip ensure you explain the role of relative price and relative profit and consumer sovereignty***
7. ***Explain how free and competitive markets are likely to impact on allocative and dynamic efficiency.***
8. ***Explain why free and competitive markets are likely to be more dynamically efficient when compared to alternative market structures such as an oligopoly.***
9. ***Discuss how free and competitive markets are likely to force firms to be price takers not price makers.***

10. ***Explain why free and competitive markets are likely to lead to higher living standards for society as a whole.***
11. ***Explain why a lack of competition is likely to lead to a misallocation of resources and lower material and non-material living standards.***
12. ***Explain why in a free and competitive market producers are only able to make "normal profits".***
13. ***Describe how resources are likely to be reallocated following the negative publicity around flammable cladding in many apartment buildings. In your answer, refer to the role of relative prices.***
14. ***Explain how the price mechanism can solve a shortage of mining workers during a mining boom.***
15. ***Explain how the use of crops in fuel production (e.g. ethanol) has contributed to higher global food prices.***
16. ***Explain how the government can use the price mechanism to achieve allocative or intertemporal efficiency.***

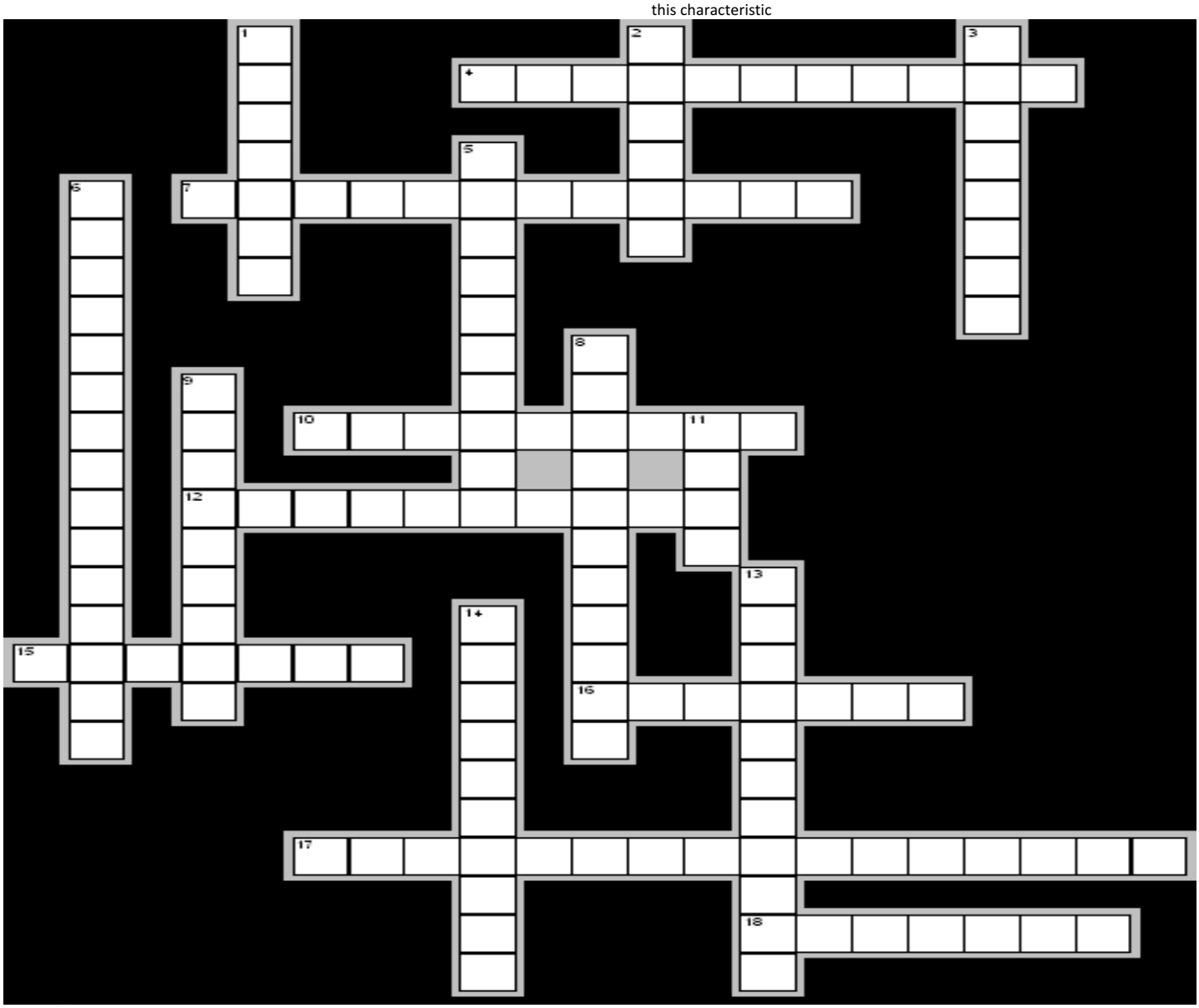
Quick revision crossword No 3
Factors influencing decision making and market structures

Across

4. This is assumed to be perfect in perfectly competitive markets
7. As we move from perfect competition to monopoly, the market structure becomes more?
10. Governments in any country will primarily be influenced by these factors
12. The actions of this body include efforts to discourage the consumption of certain products or encourage the consumption of others
15. Consumers seek to maximise this subject to a budget constraint
16. In economics, it is generally assumed that all businesses seek to maximise profit. This necessarily involves maximizing this
17. This describes the average costs of production for businesses falling with larger levels of output (3 words)
18. When the minimum efficient scale can only be reached by one firm, then we have this type of monopoly

Down

1. When two firms control or dominate the market (such as Coles and Woolworths)
2. In the long run, businesses can only make these profits in a perfectly competitive market
3. This type of firm is a price maker
5. The price of this product will rise during a housing construction boom. [Clue: the product is inserted between the walls and the external cladding)
6. Perfectly competitive markets require that these do not exist (3 words)
8. Firms in a competitive market have no market power and therefore are referred to as _____ _____ (2 words)
9. The banking industry is a good example of this type of market structure
11. The peak employee group that influences the behaviour of consumers, businesses and governments
13. This has a big influence on consumer choice
14. In perfectly competitive markets, goods and services are assumed to have this characteristic



Types of market failure, including public goods, externalities, asymmetric information and common access resources

Market failure occurs when resources are not allocated in a way that maximises national living standards or the economic welfare of all Australians. Markets, left unregulated, will tend to result in an over-allocation of resources to the production of some goods and services (e.g. tobacco) and/or an under-allocation of resources to the production of others (e.g. education). Accordingly, unregulated markets (like perfectly competitive markets where consumers ultimately determine what is produced) will typically lead to an inefficient allocation of resources that requires some form of government regulation or intervention.

For example, the profit motive and self-interest cause the market to over-produce a variety of goods and services that are not in the nation's best interest, such as drugs like speed, ice and ecstasy, and under-produce some goods and services that are in the nation's best interests, such as national defense and prisons. Some other problems inherent with markets are their tendency towards market concentration and anti-competitive behavior; the high incidence of corporate dishonesty; the lack of protection for the less privileged; and a lack of account for both positive and negative externalities. Accordingly, governments intervene to ensure that the nation's resources are re-allocated in such a way that the 'net benefits' to society are maximised. In other words, Australian governments will devise policies that provide incentives for resource owners to move their resources from one area to another such that we are closer to achieving the most efficient allocation of Australia's resources. In a broader sense, this means that government efforts are designed to improve 'allocative efficiency,' where this is defined as an allocation of resources to the production of goods and services that maximises living standards/welfare of Australians.

Exam Tip: Whilst there are many examples and sources of market failures, according to the current Study Design, students are only required to understand four sources of market failures. These are public goods, externalities, common access resources and asymmetric information.

Exam Tip: The strict theoretical/textbook definition of allocative efficiency refers to the wants of consumers being maximised as a result of producers being forced to price at the marginal costs of production. However, when a government seeks to alter the way resources are allocated in an economy, the focus is broader than 'the consumer' for the simple reason that consumers will not always make consumption decisions that are in their, or the nation's, best interest. Accordingly, allocative efficiency can be more broadly defined as the allocation of resources that provides the maximum net benefits for society.

Exam Tip: If asked in the examination to outline two reasons that might justify government intervention in markets to achieve a more efficient allocation of resources. Firstly, avoid reference to factors such as the removal of government regulations or dismantling of tariff protection. While these can help to achieve a more efficient allocation of resources, one needs to focus on examples of governments *'intervening'* in markets (as opposed to *'retreating'* from markets).

Provision of 'public goods'

Pure public goods are those that have the following characteristics:

- Non-depletable (or non-rivalrous) - one person's consumption does not diminish the ability of another person to enjoy the same consumption; and
- Non-excludable - you cannot exclude non-payers from enjoying the benefits that the good or service provides.

Examples of public goods include national defence, prisons, lighthouse services, street lighting, fire brigades and other emergency services.

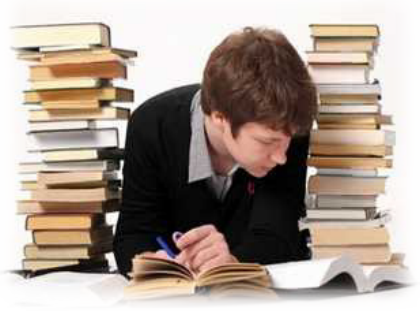
In economics, the problem of not being able to enforce payment from some consumers (i.e. non-excludability) is referred to as the ***free rider problem.*** For example, if there was no government provision/funding of lighthouse services, there is little to stop one ship from refusing to pay a private provider even though they use the lighthouse to prevent running into land. Similarly, if there were no government provision of national defence, there is little to stop any citizen from refusing to pay a producer for the service, even though they will still enjoy the safety that defense provides. The non-excludability of these 'public goods' creates the *free rider problem*.

Exam Tip: In the 2021 exam, MC Question 10 was the most difficult on the paper. It required students to select which of the following four options is not likely to be considered a public good': a fireworks display, street lighting, healthcare services and free-to-air TV broadcasts. Many students chose 'a fireworks display' or 'free-to-air TV broadcasts', failing to recognise that both 'goods' are more likely to be examples of public goods as they are both non-excludable and non-depletable, unlike healthcare services which is only partly non-excludable and partly non-depletable. Healthcare services is less a public good and more an example of a 'merit good' and/or a 'good' with positive externalities in consumption. See 'Externalities' below.

Externalities

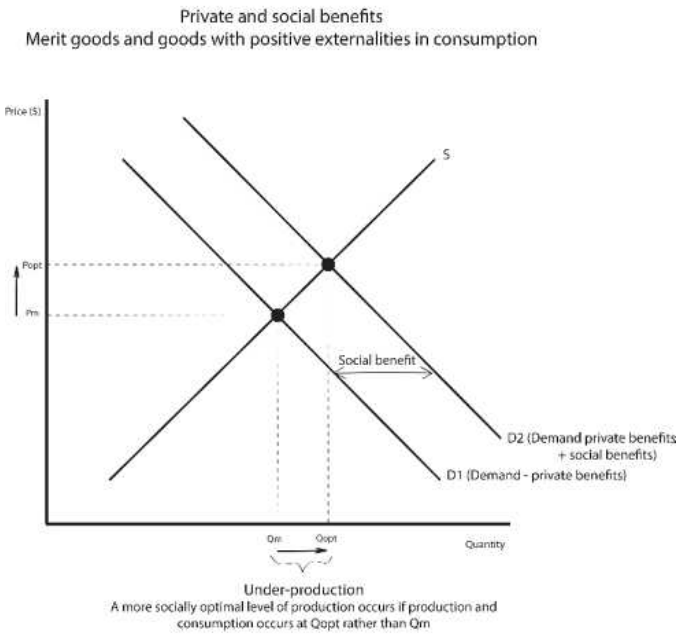
These are *costs* or *benefits* associated with the production or consumption of goods and services that are passed onto *third parties* or *spillover* to affect others. Externalities result in the production of *social costs* or *social benefits* faced by society more generally.

Products with positive externalities in consumption



The government also produces, or subsidises the production of other goods and services which, if left to the free market, are likely to be under-produced and therefore not in the *public interest*. These are sometimes called ***merit goods*** and/or goods with ***positive externalities in consumption***. For example, public parks, roads, transportation, health services, public housing, telecommunications, education, national broadcasting, libraries and scientific research. These are also examples of goods that have 'public good' characteristics in the sense that they are partially non-depletable and partially non-excludable. For example, education is partly non-depletable as one person's enjoyment of the service may not prevent another person from enjoying the service (e.g. a lecture provided at a university, especially if available online). In addition, education is partly non-excludable as you can't prevent non-payers from enjoying some of the 'social' or 'external' benefits that are provided by education – such as a more enlightened and tolerant society and improved productivity (as skills increase) leading to lower prices or higher quality.

Goods with positive externalities in consumption result in social benefits that are not captured by a market. The goods are under-produced to the extent that the socially optimal level of production is not achieved. Education is a good example, where a market will only ensure that production takes place where the private benefits equate to the private costs. The additional benefits that accrue to society more generally once a person receives years of education are not taken into account because a private consumer will generally not be prepared to pay the additional price for a benefit they will not directly receive. Accordingly, the government intervenes by subsidising private schools and private educators (e.g. VET FEE-HELP) or directly providing public education (schools/TAFE's and universities). This enables the production and consumption of education to take place closer to the 'socially optimal' level.



The most recent and visible example of a good with positive externalities in consumption is the COVID-19 vaccine. If we accept that there are no (long term) negative side effects associated with the vaccine, and that the vaccine prevents serious illness associated with contracting COVID-19, then it can be argued that one person's consumption of the vaccine has third party/social benefits to the extent that unvaccinated people are less likely to contract the virus.

Exam Tip: Question 3(d) of the 2021 exam required students to explain (using an example) how the consumption of a good or service may be associated with positive externalities. First, student should ensure that they refer to 'third party benefits' or 'external/social benefits' when explaining a positive externality. Second, students need to focus on the external benefits that are derived from the actual 'consumption' of the good as opposed to the 'purchase' of the good. For example, it is wrong to argue that the purchase of a chocolate bar results in positive externalities in consumption if the manufacturer promises to donate a proportion of the sales price of each chocolate bar to a charity that focuses on saving native forests. The actual 'consumption' of the chocolate bar is not resulting in third party/social benefits.

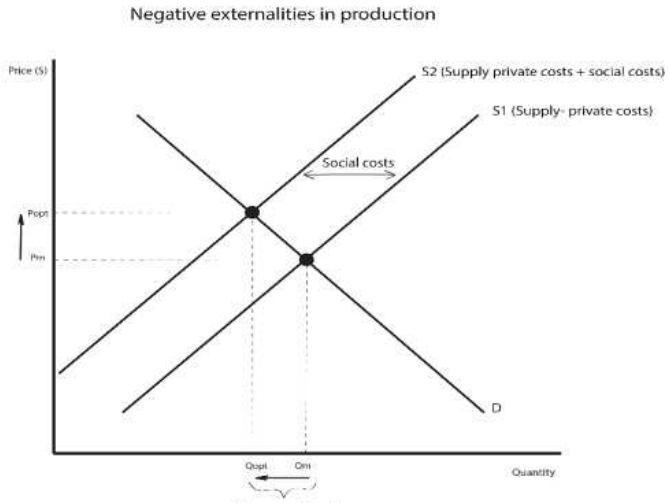
Externalities in production: are externalities that flow purely from the production of a good or service. A factory producing steel that allows its waste to flow down an adjacent river is an example of a negative externality in production. When taking its costs of production into account, it does not incorporate the costs of polluting the river, sometimes referred to as the *social costs* that are borne by other users of the river. In contrast, a business that invests in research and development (R&D) or training of its employees is seeking to derive benefits (i.e. profit) from their production. However, these activities will tend to confer benefits to third parties or society more generally, and are referred to as examples of positive externalities in production. For example, the third party benefits occur when trained employees move to a new employer or when the R&D leads to new technological inventions or breakthroughs that, when taken up by multiple producers, improves the welfare of society more generally.

Exam Tip: The exam setting panel is unlikely to set questions requiring you to re-produce D/S diagrams to show the private and social costs or benefits. They have been included here to assist in your understanding of market failures. Inclusion of these diagrams in the exam to support your analysis can assist students, but will not be necessary to gain full marks.

When a producer manufactures steel, it will typically only take into account the private costs associated with its production. It will generally not incorporate the costs that are passed onto others in the form of polluted air and rivers (social costs). If it did take into account these 'social costs' then it would charge a higher price (social price) and the level of steel consumption and production would fall to a 'socially optimal level of output'. Accordingly, governments force producers to take into account the social costs (i.e. internalise the negative externalities) via sanctions, such as fines for dumping waste or polluting 'public' property. Increasingly, big businesses are internalising the externalities of their own accord via an emphasis on corporate social responsibility, appreciating that public exposure could ultimately result in loss of market share and profits.

Exam Tip: In the 2023 exam, Q4c required students to explain one type of market failure that may be associated with the construction of new housing. It was easiest to focus on negative externalities, but other examples of market failures were also valid, with the exception of public goods. While the 'abuse of market power' as a market failure is also relevant in the context of the question, it is best to refer to those market failures listed in the current Study Design.

Pollution in the form of C02 emissions is an example of a negative externality in production (e.g. producing electricity at coal fired power stations) and consumption (e.g. fuel emissions from cars). All levels of government acknowledge the need to force economic agents to internalise this negative externality, however there exists much debate and conjecture about the best means to reduce C02 emissions – pricing carbon (e.g. via a carbon tax or renewable energy target) or direct action measures and the costs and benefits of these interventions. Current attempts to mitigate (reduce) emissions given current technology are complicated to say the least and have the potential to cause unintended consequences that reduce how efficiently resources are allocated, impacting negatively on current living standards.



Exam Tip: The 2023 exam also revealed that some students believe that market shortages/surpluses represent market failures. Students should be reminded that market disequilibrium is typically a feature of properly functioning markets and it does not represent market failure.

Exam Tip: A past exam included a three part question, worth 6 marks, where students were asked to explain what is meant by a market failure; to discuss why climate change might be considered an example of a market failure; and then to discuss one other example of a market failure. This was one of the most poorly handled questions on the exam. If a similar question was to appear on the current exam, the approach should be to assume that each part is allocated 2 marks, and then to allocate roughly equal time/space to each part. Too many students ignored at least one part, and most could not provide a good general explanation of 'market failure', instead providing an example as an explanation. Be sure that you know how to define or explain what is meant by 'market failure!

Negative externalities in consumption: these are negative third party/social costs that flow purely from the consumption of a good or service. Examples include the external costs associated with the consumption of illicit drugs, alcohol, cigarettes, and some firearms. In a free market, consumption of these goods and services (often referred to as *de-merit goods*) would be far greater than occurs currently. In other words, the market would tend to *over-produce* these goods and services for two main reasons.

a) Self-interested individuals only take into account the personal costs of consuming these goods and services and ignore the wider social costs. For example, a smoker will take account of the personal costs of smoking (e.g. financial cost, risk of illness, etc) but ignore the costs not borne by the smoker directly or the negative externality (e.g. passive smoking, additional health costs, missed work).

b) Individuals are sometimes incapable of making an informed judgment about the personal costs of consuming these goods and services. For example, some drug users (particularly the young) are simply unaware of (or ignore) the personal costs involved (e.g. loss of life or reduced cognitive ability). Behavioural economists may say that current enjoyment is given more value than the potential costs that may eventuate in the future and hence "we" overconsume.

Common access resources (CAR)

Common access resources are typically natural resources such as forests and pastures, National and State parks, grazing land, rivers and lakes and oceans and fisheries. They are prone to market failure because, whilst most goods and services are "owned" and can be bought and sold in markets, common access resources usually have no market price because they are not owned by anybody. Much like public goods, CAR are **non-excludable** because anybody is allowed to use them for free, however, unlike public goods, one person's use typically prevents others from using/enjoying them (i.e. CAR are **rivalrous/depletable**).

Common access resources are prone to market failure because it is difficult to exclude people from using them (as there is no price associated with their use) and one person's use reduces the capacity of others to use it equally. Because they are "common access" and usually owned by nobody, it is hard to put a price on their use, so people are prone to over use the resource. This typically leads to problems of "sustainability" (using resources now in a way that reduces the ability of future generations to meet their needs) which compromises the achievement of intertemporal efficiency.

The concept of CAR and market failure arose in the medieval period where graziers were allowed to graze their animals on "common land" for free (land owned by nobody). In 1968, *Garret Hardin* wrote a report on the "tragedy of the commons" in which he explained that it was in each grazier's interest to put any additional animals they owned on to the "common land" despite any damage that may be done by over grazing. This was considered a rational decision because the grazier achieved additional income (hence utility or wellbeing rose) whilst the cost was borne by all users. These individual decisions created market failure because their activities caused depletion, degradation and even destruction of the common resource.

The oceans, lakes and rivers are typically "common access", that is owned by nobody. In the absence of any regulation the fishing industry (particularly given modern technology) is likely to extract as many fish as possible because if they do not catch them somebody else will, reducing their own potential wellbeing/utility/income. This will often lead to over-fishing such that fish stocks are depleted over time because they are not being caught "sustainably."

Exam Tip: Question 3(b) of the 2021 exam required students to explain why there may be an inefficient allocation of resources in the fish market, referring to the characteristics of common access resources (CAR). Some students erred by focusing on 'negative externalities in production' when the focus should have been on CAR. The best performing students referred to both non-excludability and depletability and then made a link to either intertemporal efficiency and/or allocative efficiency as they explained why, without government intervention, the existence of CAR leads to an overallocation of resources to activities such as fishing, which accelerates resource depletion and leads to a socially sub-optimal allocation of resources..

Exam Tip: The 2017 exam asked students to distinguish between Public Goods and Common Access Resources. Ideally students should define the two key terms, provide examples and then highlight a key difference (e.g. CAR are depletable/rivalrous). It is incorrect to say that CAR have no restrictions, rather CAR are typically hard to "police" and hence hard to exclude. Students often provide roads and hospitals as examples of "public goods". Whilst they exhibit some public good characteristics (such as being partially non-depletable and partially non-excludable) they are really examples of goods with positive externalities in consumption. Better examples of public goods are street lighting, national defence and lighhouses.

Asymmetric information

One of the essential assumptions made for a perfectly competitive market is that buyers and sellers possess 'perfect information.' This enables economic transactions to be undertaken with certainty about the value of what is being bought and sold in particular markets. Buyers will typically be motivated to buy the cheapest and best quality goods and services, while producers will be motivated to produce highest quality goods and services at the lowest prices (that allows normal profits to be made) or lose customers to their competition. In reality, markets rarely operate in this environment. Most markets are characterised by some form of information asymmetry, where one party to a transaction knows more about the product than the other party.

Asymmetric information therefore refers to information that is one sided. Either the buyer or the seller (but typically the seller) has more information about a transaction than the other party. This creates an unfair advantage and distorts the allocation of resources and represents a market failure as there will be an over or under allocation of resources to the production of certain goods or services over time.

For instance, a seller of a car knows far more about the history of the vehicle than the buyer. The seller may well be selling the vehicle because of a fault that will soon require fixing. However, without a very thorough check of the vehicle the buyer is unlikely to be aware that it is likely to require some expensive maintenance and as a result may well pay a higher price for the vehicle than they would had they been aware of the problem. In this respect, asymmetric information leads to an over allocation of resources to the used vehicle market in the short to medium term. However, in the longer term, as people hear stories of "lemons" (cars with defects), it is likely that buyers will be less willing to purchase used cars for fear of being 'ripped off'. This represents a market failure because too few resources will be allocated to the used car market. In simple terms, there will be many foregone transactions in the economy that had the potential to make both parties better off (e.g. the buyers and sellers of used cars). Too few resources will flow to the production of used cars and too many to the production of new cars, wasting finite resources, causing environmental damage in their production and compromising the achievement of intertemporal efficiency. This means that the market fails to deliver outcomes that are in the best interests of society and a sub-optimal allocation of resources occurs.

Sometimes businesses will seek to mislead or deceive consumers by making false claims about the quality or price of a good or service. This can create demand for a product that would otherwise not occur, and therefore lead to an over allocation of resources to the production of that product, particularly in the short term. However, over the longer term, the increased incidence of misleading and deceptive conduct that would occur in an unregulated environment may actually serve to stifle consumer spending on some goods and services. This ultimately leads to a less efficient allocation of resources as viable economic transactions, ones that have the potential to make two or more parties better off, will not occur in the long run. For example, over recent years, some egg farmers labelled their 'barn laid eggs' as 'free range eggs', charging a premium in the process. Consumers were therefore duped into paying for a premium product (free range eggs), when they were actually provided with an inferior product (barn laid eggs). This contributes to a less efficient allocation of resources in the longer term because consumers will be much more reluctant to purchase free range eggs as they will never be certain that they are being provided with the product they paid a premium for. As a consequence, the market(s) for free range eggs will become more scarce, or even disappear, resulting in a valuable economic transaction not taking place - one which has the potential to make genuine farmers of free range eggs and consumers better off. As a consequence, there will be an under-allocation of resources to the production of products that are valuable for society and allocative efficiency is therefore undermined.

Other Recent examples of asymmetric information in action include the following:

- In November 2023, the ACCC commenced legal proceedings against **'Express Online Training' (EOT)** who allegedly made misleading statements to consumers who were seeking to attain an RSA certificate. EOT promised *'Same Day Certificate"; "Only Pay After You Pass"; or, "Best of all – with us you don't have to pay until you pass!"* These representations were allegedly false and caused consumers to enrol in courses with EOT that may not have occurred otherwise.
- In June 2022, **Samsung Electronics Pty Ltd** was ordered to pay $14 million in penalties for misleading claims about the water resistance of its mobile phones. Samsung published ads online showing someone surfing with a Samsung Galaxy phone and another with a phone in a pool of water. It turns out water could in fact damage the phones.
- In December 2022, **Fowler Homes Pty Ltd** admitted to using unfair contract terms incorporating a clause (called a 'non-disparagement' clause) in their standard building contract which would prevent customers from making any negative comments or reviews about their experiences with the builder. The ACCC ordered they remove these clauses from their contracts and allow current customers to provide honest information to any potential customers.

- In late 2020, the ACCC instituted proceedings against **Lorna Jane Pty Ltd** for alleged false or misleading claims about its 'Anti-virus Activewear', In July 2020, Lorna Jane claimed that its 'Anti-virus Activewear', which was sprayed with a substance called 'LJ Shield', eliminated and stopped the spread of COVID-19 and provided protection against viruses and pathogens, including COVID-19, when this was not the case.
- In early 2020, the Federal Court found **Trivago** made misleading representations about hotel room rates both on its website and television advertising. The Court ruled that Trivago misled consumers by representing its website would quickly and easily help users identify the cheapest rates available for a given hotel. In fact, Trivago used an algorithm which placed significant weight on which online hotel booking site paid Trivago the highest cost-per-click fee in determining its website rankings and often did not highlight the cheapest rates for consumers.

- In 2016, the Federal Court found that **Snowdale Holdings** made false or misleading representations that its eggs were "free range" in contravention of the Australian Consumer Law. The Court found that Snowdale represented that the eggs were laid by hens which roamed freely on an open range on most days. But this was untrue as the hens were housed in steel industrial style sheds.

In all of these cases, the misinformation to "consumers" resulted in a higher level of demand for the product than would otherwise be the case if consumers had perfect knowledge. This led to an over allocation of resources to the production of these products during the relevant time frame and an under allocation of resources to areas that would have been in higher demand had consumers been aware of the "facts". For instance, it is unlikely that consumers would have bought free range eggs had they been aware of the truth. Importantly, in the **long run**, it has the potential to reduce demand for these types of products because consumers will be skeptical about the claims made by companies when promoting their goods and services. This is not (allocatively) efficient because transactions that have the potential to make both parties (producers and consumers) better off will not take place.

Overall, in the presence of asymmetric information, markets will tend to over or under produce certain goods and services such that allocative efficiency is not achieved.

Exam Tip: In the 2018 examination, students were required to explain how either externalities or asymmetric information would result in market failure. While it is relatively easy for students to describe an externality and/or asymmetric information in isolation, it is much more difficult to establish the important link to market failure. Students should remember to articulate what is meant by externalities/asymmetric information before explaining how, in the absence of government regulation, each would lead to a socially sub-optimal allocation of resources (e.g. there would be an overallocation of resources to the production of goods containing negative externalities reducing allocative efficiency making society worse off).

The role and effect of indirect taxation, subsidies, regulations, advertising and direct provision as forms of government intervention in the market to address market failure

Given that markets, if left to operate "freely" (i.e. without any intervention), have a tendency to fail, governments frequently intervene with the intention of improving the way resources are allocated such that allocative efficiency is achieved. In this section we will look at specific ways that governments can intervene using indirect taxation, subsidies, government provision, regulation and advertising to address market failure.

Exam Tip: In both the 2022 and 2020 exams, students were required to use a fully labelled D/S diagrams to explain/analyse how the government could rectify a market failure (and achieve a more efficient allocation of resources). For these questions it is important to choose a form of intervention (and 'market failure') that can easily be illustrated via a D/S diagram. Those students who chose taxes, subsidies, or government advertising as their form of intervention to address externalities could more easily illustrate their response with reference to a D/S diagram compared to those who focused on regulations (or direct government provision) to address public goods, asymmetric information or common access resources. It's very difficult to illustrate public goods or common access resources using a D/S diagram as they don't have a market price, which means the choice of both the market failure and the government's response is very important.

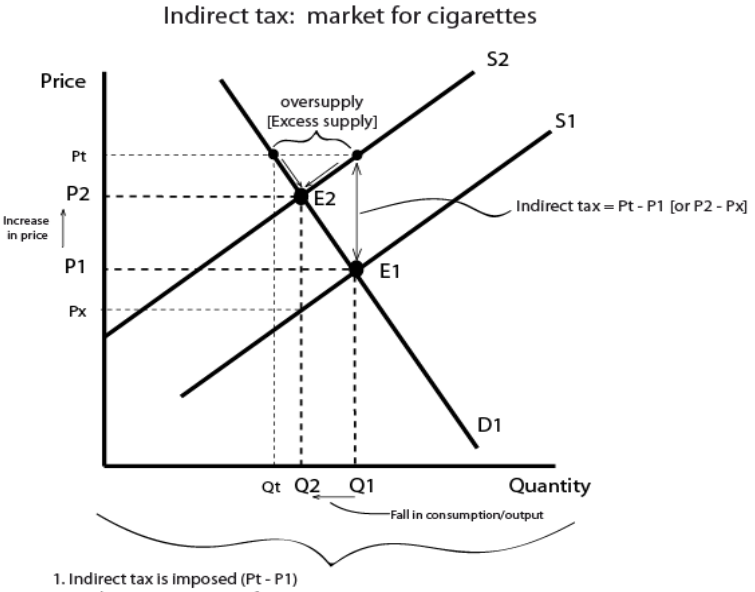
Exam Tip: The choice of market failure was also important for those students sitting the 2023 exam. Q4c required students to 'explain one type of market failure that may be associated with the construction of new housing'. It was easiest to focus on externalities, or even asymmetric information and common access resources. However, those students who attempted to focus on public goods struggled to score highly..

Indirect taxation

An indirect tax is a tax that is usually levied (charged) to producers/suppliers but the consumer ultimately pays the tax (indirectly) because suppliers typically pass on the added cost in the form of higher prices. The government can and does impose indirect taxes (often called excise taxes) as a means of rectifying market failure such as negative externalities associated with the consumption of products like cigarettes, alcohol, and fuel. They also used a carbon tax on fossil fuel energy as a means to reduce the negative externalities associated with carbon dioxide (since discarded). To illustrate how indirect taxes work to reallocate resources, we will examine the tobacco market, where the excise on tobacco was raised by 12.5% per year up between 2013 and 2020 and by a further 5% per year between 2023 and 2025. Referring to the diagram below, we will assume that the market is initially in equilibrium (E1), with a price of P1 and Q1 packets of cigarettes sold.

The increase in excise tax causes the costs of production to rise, which shifts the supply curve to the left (from S1 to S2). Producers will seek to pass this tax on to consumers in order to maintain their profits by charging Pt. However, at this higher price consumers will only be willing to buy Qt, so there will be an "excess supply" of cigarettes (Q1-Qt). Producers will then lower their prices to eliminate the surplus, causing supply to contract along the new supply curve (S2). As the price falls below Pt, demand will expand along the original demand curve (D1) until a new equilibrium is reached at E2, where the price is now P2 and the quantity bought and sold is Q2.

When compared to the original equilibrium (E1), the quantity of cigarettes produced and bought at the new equilibrium (E2), will fall by Q1 - Q2 and the price will rise by P2 - P1. Given that cigarettes have a low price elasticity of demand (i.e. a price inelastic demand curve) most of the indirect tax (Pt - P1) will be passed on to consumers (P2 - P1) and a smaller portion P1 - Px will effectively be paid by the producer.



1. Indirect tax is imposed (Pt - P1)
2. Producers increase price from P1 to Pt
3. Demand falls from Q1 to Qt (contraction of demand)
4. Excess supply created at Pt (Q1 - Qt)
5. Price falls back to E2
6. Demand increases (expansion) and supply falls (contraction)
7. New equilibrium at E2, with a higher price overall (P2) and a lower quantity (Q2)
8. Tax burden faced by consumer = P2 - P1
9. Tax burden faced by producer = P1 - Px

The tax will therefore lead to less smoking (Q1 - Q2), reducing the negative externalities associated with smoking and cigarette consumption. In so doing the government will earn revenue (improving the budget outcome) that can be used to potentially fund **advertising** to increase consumer knowledge about the negative externalities associated with smoking (such as the increased health risks), which will then shift the demand curve to the left, further reducing demand and output. An indirect tax can therefore be used to address negative externalities by raising prices, reducing production and consumption, and diverting resources towards more socially optimal production outcomes.

The **fuel excise** currently being paid by consumers and producers was originally designed to raise revenue to fund roads (due to the price inelastic nature of the demand for petrol). However, by increasing the price of fuel, the tax also reduces demand and therefore helps to internalise the negative externalities associated with fuel consumption, such as particulates in the air and carbon dioxide emissions. This means that the tax, by raising the price of fuel, forces businesses and consumers to ration demand, which goes some way to reallocating resources away from the production of 'dirty' goods to those with fewer (or zero) negative externalities in production or consumption (e.g. the purchase of a bicycle as a form of inner city transportation…or walking!!).

Subsidies

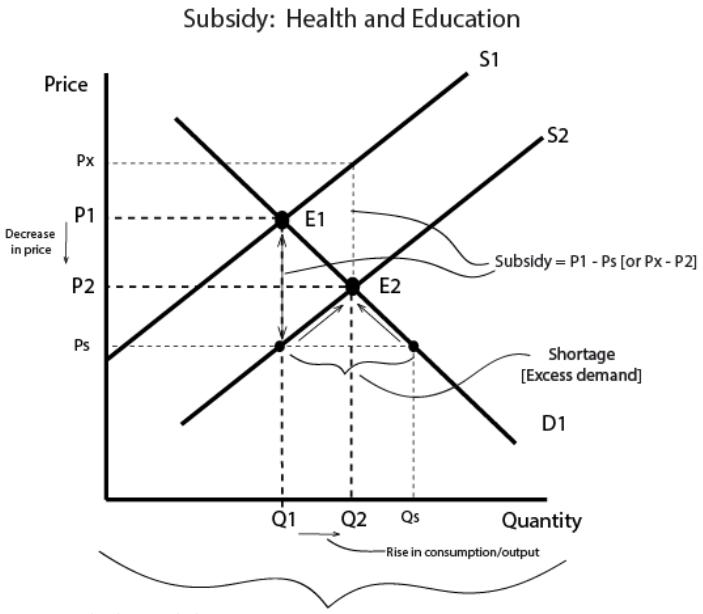
A subsidy is a payment to a producer or consumer (usually producer) designed to increase the production and consumption of a good or service. A producer subsidy has the effect of an "anti-tax", where instead of adding to costs and lowering profit it reduces costs and increases profit. Hence, producers are more willing to produce at any given price, shifting the supply curve to the right.

Positive externalities occur where additional benefits (above the price charged) accrue to society in general when a good or service is produced and/or consumed. For instance, providing education for everybody should increase productivity (because we are more skilled) and potentially reduce crime (e.g. because there is a higher chance of employment) as well as improve social cohesion via greater tolerance and understanding of differences. Education will therefore create benefits to society above the pure cost of education to the purchaser, so it is in society's interest to ensure that individuals do have a good education (more productive, lower unemployment, less crime). Likewise, health is also funded to ensure everybody has access to a reasonable health system because of the positive externalities associated with its consumption (e.g. can go back to work and be productive, mental health

of themselves and family and friends improves, can rectify problems before they get worse!) bringing both material and non-material future benefits.

The government therefore provides direct subsidies to private educators and health providers as well as directly providing government hospitals and schools (potentially lowers the cost to zero for these govt services), increasing the consumption of health and education which then requires more resources to be allocated to their production. In the case of a subsidy to a private school or hospital, the subsidy reduces the costs of production and therefore increases the reward or return they receive for selling their product/service. The subsidy is usually paid to the producer based on the quantity they actually sell (unit subsidy). So, in order to receive a greater government subsidy, producers will lower the price they charge consumers in order to attract more customers.

As shown in the diagram to the right, the subsidy will shift the supply curve right (from S1 to S2) as each unit of production receives the same amount of subsidy. Initially, equilibrium resides at E1, with the price of P1 and the quantity sold Q1. The subsidy will then create an incentive for producers to lower their price, by the amount of the subsidy to Ps, in order to attract additional sales. However, a price of Ps leads to such a large increase in demand (Q1 to Qs) that a shortage (excess demand) is created (Qs – Q1) which eventually forces the price back up to P2 over time. As price rises towards P2, the shortage gets smaller and smaller until equilibrium is reached at E2.



1. Subsidy provided (P1 - Ps)
2. Producers decrease price from P1 to Ps
3. Demand rises from Q1 to Qs (expansion of demand)
4. Excess demand created at Ps (Qs - Q1)
5. Price rises back to E2
6. Demand decreases (contraction) and supply increases (expansion)
7. New equilibrium at E2, with a lower price overall (P2) and a higher quantity (Q2)
8. The benefit of the subsidy for consumers = P1 - P2
9. The benefit of the subsidy for producers = Px - P1

[**Note:** Px is effectively the price recieved by producers which is made up of the price paid by consumers (P2) and the amount of the subsidy (Px - P2)]

When compared to the original equilibrium (E1), the production and consumption of health and education at E2 will rise from Q1 to Q2 and price falls from P1 to P2. The subsidy will therefore help to internalise the positive externalities associated with the production and consumption of health and education. By decreasing the price, subsidies will increase the consumption and production of these goods/services and therefore help to achieve a more socially optimal allocation of resources (allocative efficiency).

Exam Tip: As was the case for indirect taxes, the slope of the demand curve (i.e. price elasticity of demand) ultimately determines how the benefits of the subsidy are shared between producers and consumers. As the PED falls, the benefit of the subsidy is enjoyed more by consumers than producers. At the extreme, a vertical demand curve (i.e. a PED = O) will see consumers receiving all of the benefit of the subsidy because the price falls by the entire amount of the subsidy. Once again, knowledge of how a subsidy is shared between producers and consumers is not required knowledge in the current VCE Study Design.

How quickly markets respond to government incentives will typically depend on how much competition there is in the market. The closer to perfect competition the market is, the more dynamically efficient it is likely to be, and the more quickly it is likely to respond to these types of government incentives.

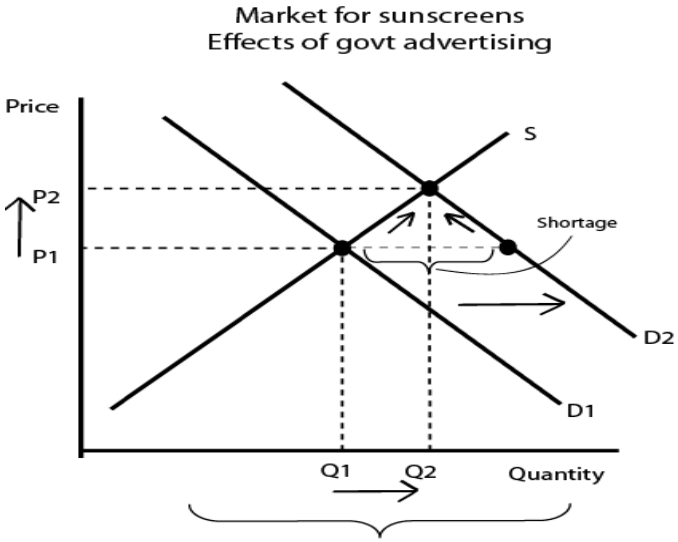
Advertising

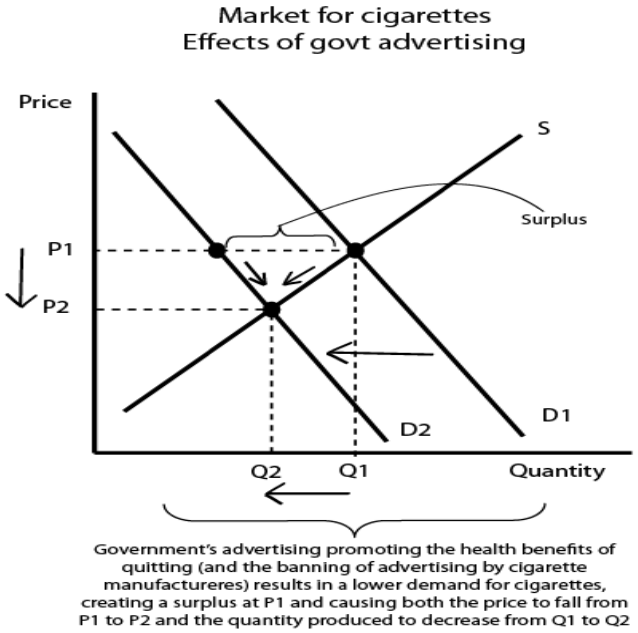
Governments use advertising to increase demand where positive externalities accrue from consumption or to decrease demand where negative externalities occur. Advertising does this by increasing the awareness of consumers of the impact of their consumption decisions on their own and others' living standards, which changes "**tastes and preferences**" as a consequence of them becoming more informed decision makers. Recall that a change in tastes and preferences will shift the demand curve, changing the equilibrium price and quantity and alter the allocation of resources.

To illustrate, the government runs advertisements designed to ensure we use sunscreen, hats and cover up to prevent skin cancer. This should increase our demand for skin protection, shifting the demand for these items to the right. This will cause an undersupply (i.e. shortage) at the original price and so, in order to increase profits, producers will increase the price, which in turn will lead to a contraction in demand along the new demand curve and an expansion along the supply curve. In the process more resources will be allocated towards the goods and services such as sunscreen and hats, and away from more damaging production such as "tanning oil" and solariums.

Alternatively, where there are negative externalities in consumption the government seeks to make us more aware of the long term consequences to ourselves and society from over consuming. A common example is smoking. Originally firms were allowed to actively advertise cigarettes to promote demand but as the government and society has become aware of the significant and potentially fatal consequences of smoking the government has banned tobacco advertising via "regulation" and run successful advertising campaigns that promote understanding of the damage to the health (and finances!) of the smoker and those around them from "passive" smoking. This has the effect of shifting the demand curve to the left. This creates an oversupply and so producers need to lower their prices, resulting in reduced profits and a reallocation of resources away from cigarette/tobacco manufacturing.

The effects of government advertising on the markets for sunscreens and cigarettes are illustrated in the diagrams below.





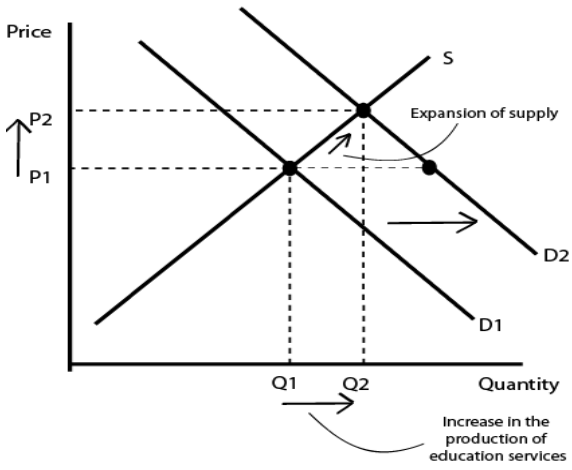
The government advertising can also help to address market failure in the form of "asymmetric information". For instance, it actively encourages more healthy lifestyles by promoting anti-smoking campaigns that inform consumers of the negative externalities associated with smoking and the benefits of giving up (healthier, more active, longer life expectancy, increased discretionary income). This has the effect of shifting the demand curve to the left as consumers become more informed and aware of the dangers of smoking, once again resulting in a reallocation of resources away from smoking and towards other products that have a higher relative price. The government can also promote healthier eating and drinking, and inform people about the risks of diabetes from too much sugar. These campaigns are designed to prevent imperfect or asymmetric information leading to the wrong or inefficient choices by consumers. Educating the public about the risks associated with the consumption of some goods and services will therefore help to change consumer preferences, reduce consumption and encourage a reallocation of resources to more socially desirable outcomes and raises overall living standards in the long term.

Government regulation

Governments (federal and state) can also use regulation to alter consumer and producer behaviour and hence how resources are allocated. A regulation is a law or rule that must be adhered to or consequences, such as fines and imprisonment, can be imposed. These consequences will then alter consumer or producer behaviour. For instance, the government has regulated that smoking can no longer take place in buildings and indeed many states make it illegal to smoke outdoors in "public places". This has meant that people have less time or ability to smoke and so demand for tobacco products has declined. This shifts the demand curve to the left, once again leading to a contraction in supply and so fewer resources are allocated towards socially undesirable activities.

In Victoria, the government mandates that students must attend school until they are at least 17. As shown in the adjacent diagram, this shifts the demand for education to the right because in a free market some may decide that education is not for them and instead enter the workforce at a younger age. This increased demand for education results in an increase in supply (expansion along supply curve) and an increase in the production of education services. This increases the allocation of resources towards the production of goods and services that are more socially desirable outcomes (due to the positive externalities discussed earlier).

Market for education services
Effect of minimum school leaving age (17)



In relation to **common access resources,** legislation enforced by penalties is typically used to protect the environment. These regulations are imposed internationally, nationally and by state governments. For example, the use of CFCs were banned in the 1980's to prevent ongoing damage to the ozone layer in the atmosphere that protects us from UV radiation.

Exam Tip: Note that students often get confused by why demand has increased despite a higher price. Remember that the analysis should start with what comes first. In this instance it is demand for education services that shifts to the right, which then leads to education service providers raising prices, which then leads to a contraction along the new demand curve in response to the higher (equilibrium) price.

In order to protect ducks, various governments impose duck hunting seasons and catch sizes. Fishing stocks are protected commercially and recreationally by a huge variety of legislation from what can be caught, to how many and what size can be caught, as well as where and how fishing can be undertaken (e.g. marine parks). We also have national and state parks that restrict the activities that can take place.

Generally, government regulatory action to reduce the problems associated with negative externalities in production or consumption might typically include:

- Laws preventing the pollution of the environment.
- Laws preventing the depletion of natural resources (e.g. species/ size and quantity restrictions on fishing).
- Prohibiting the use of some materials (e.g. some CFC's).
- The establishment of the Environmental Protection Authority to monitor, report and take action against polluters (enforcement of laws).
- Project scrutiny by government agencies to examine the environmental impact of building projects;
- Carbon pricing such as an emissions trading scheme.
- Other miscellaneous laws designed to reduce consumption, such as those forcing cigarette manufacturers to use only plain packaging for cigarettes or those warning manufacturers to include warning labels on their products.

Exam Tip: Question 3(c) of the 2021 exam required students to explain one example of government intervention that could be utilised to reduce the degree of market failure associated with common access resources (CAR). Most students were able to outline a relevant government regulation (e.g. licenses and quotas) but spend insufficient time explaining how it addresses the market failure associated with CAR. In addition, many students identified indirect taxes and/or subsidies as possible policy solutions without adequately explaining how they could be applied effectively in the context of the question. When referring to taxes or subsidies, students should be prepared to acknowledge the role of the market (via government engineered changes to relative prices) in shifting resources away from harmful production and towards activities that are in society's best interests.

In relation to *asymmetric information*, government regulatory or legislative measures to assist in reducing the inefficiencies associated with this market failure include the following:

- Trade Practices Legislation to reduce the incidence of misleading and deceptive conduct on behalf of businesses. For example, the fines imposed on the energy companies for misleading consumers.
- Other miscellaneous consumer protection laws that seek to protect consumers from unfair business practices, such as laws relating to warranties, defective products and product disclosures.
- Contract laws that seek to reduce the extent of *principal/agent* or *adverse selection* problems.
- Employment laws that provide protection to both employers and employees that may face *principal/agent* problems.
- Laws enabling insurance companies to contain exclusion clauses in some contracts (such as the right to refuse an insurance payout to an insured driver who was involved in an accident and who had a blood alcohol reading above the legal limit).

- Laws to help prevent workplaces being damaging to, or unsafe for, staff and customers (Occupational Health and Safety or Workcover laws).
- Laws to prevent workers not being provided with equal opportunities as others (Equal Opportunity laws).
- Laws to prevent workers or customers being discriminated against on the basis of race, colour, religion, etc. (Anti-discrimination legislation).
- Laws to prevent investors being 'ripped off' by unscrupulous company directors and/or insider trading activity (Corporations Law).

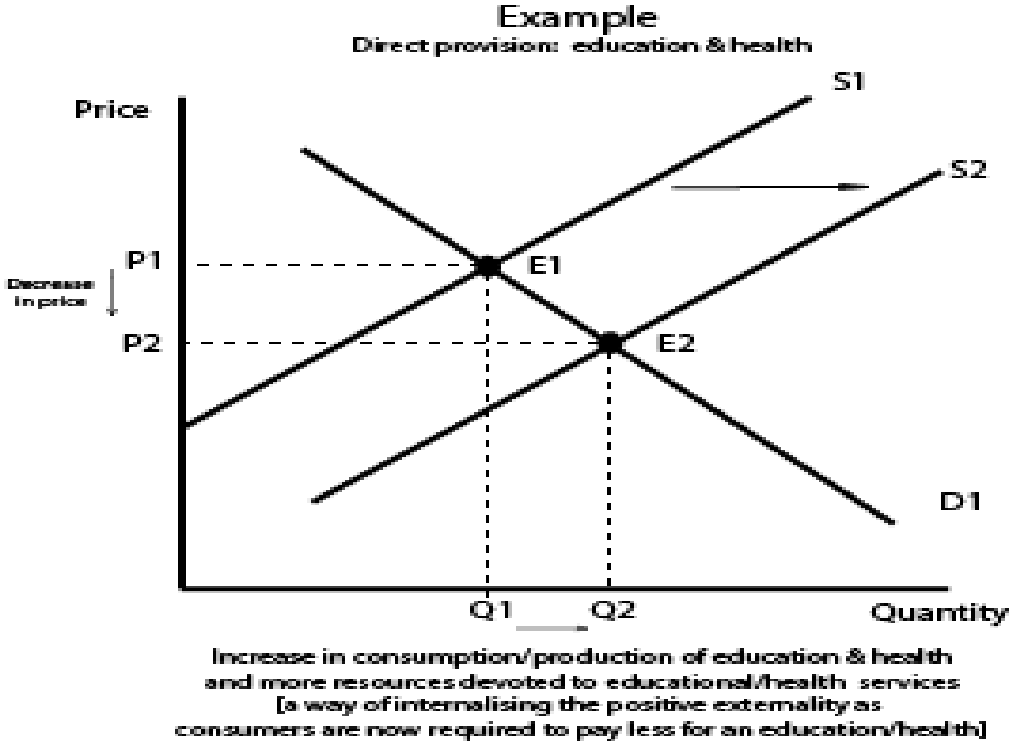
Exam Tip: When explaining the effect of a government intervention, It is important for students to focus less on the 'description of the action' (e.g. the details relating to a change in indirect taxes) and more on 'how the action works to address the market failure and improve the allocation of the resources'. In the case of an indirect tax students should focus on how the indirect tax forces suppliers to internalise the social costs and therefore correct the overallocation of resources to that particular market. This is more challenging and requires students to demonstrate an understanding of key economic relationships as opposed to writing down rote learned details about a particular policy initiative.

Direct provision

Governments can also intervene in the market by directly providing goods and services via their various government departments. When a government does this, they are effectively increasing the supply of a good or service (shifting the supply curve to the right).

As outlined above, school education is a positive externality, because it provides benefits to broader society (e.g. social benefits are greater than private benefits). In response the government uses subsidies to correct this market failure and allocated more resources towards schooling. In Australia, these types of schools are broadly known as *private or independent* schools because they are operated by private organisations, even though they have both private (school fees) and public funding (subsidies). However, the government also directly provides school education services via The Department of Education. These government schools are known as *public schools* because they are operated by and funded by the government. Another example relates to the public and private hospital system in Australia, where the Department of Health provides a range of healthcare services including hospitals to Victorians.

The government will also provide certain public goods which are underproduced by the market. Local councils are often responsible for the construction and maintenance of footpaths, streetlamps, and roads in a local area, all of which are examples of public goods. Whilst we don't draw a demand and supply diagram for public goods (as there is no market price), the government is effectively increasing the allocation of resources to these markets to ensure that a more socially optimal allocation of resources is achieved.



QUICK QUIZ 3: MARKET FAILURE AND GOVERNMENT INTERVENTIONS

For each of the market failures listed in the left hand column of the table, complete the necessary information in the adjacent row. The first one has been completed to provide an idea of the approach that could be used.

Type of failure	Characteristics	Examples	Why the market fails?	Example of Government interventions	Impact of intervention
Negative externality in production	The production of a product Imposes costs(spillovers) on third parties who are not involved in the original transaction	Carbon emissions from coal fired electricity (CFE) production	Social costs are not internalised by the market and too many resources are allocated to production of CFE	Carbon tax	Higher price of CFE Lower demand Reduced supply Fewer resources allocated to CFE production
Negative externality in consumption					
Positive externality: production					
Positive externality: Consumption					
Asymmetric information					
Common access resources					
Public goods					

One example of a government intervention in markets that unintentionally leads to a decrease in one of allocative, productive, dynamic or intertemporal efficiency

We have already seen that unregulated markets have a tendency to "fail" by not achieving an allocation of resources that best satisfies society's needs and wants (allocative efficiency). As a consequence, governments frequently intervene to alter how resources are used within an economy, with the intention of improving overall living standards. However, government intervention frequently comes with unintended consequences that, in some cases, leads to a less efficient allocation of resources and a reduction in living standards.

Governments intervene in many ways, as we have seen above, via the implementation of indirect taxes (e.g. excise tax on fuel, alcohol and tobacco), subsidies (e.g. renewable energy) government regulations (e.g. E10 fuel/ energy markets via RET/minimum wage/ plain packaging laws) and advertising (e.g. sunscreen and smoking) with the intention of improving efficiency in the allocation of resources. However, given that there are a variety of potential solutions to overcome the "misallocation of resources" that frequently occur in unregulated markets, any policy response runs the risk of decreasing economic efficiency and creating 'government failure'. This will occur if the costs of the intervention outweigh any intended benefits from the intervention, such that overall living standards fall as a consequence of the intervention.

Examples of government intervention and unintended consequences:

Excise on tobacco and alcohol

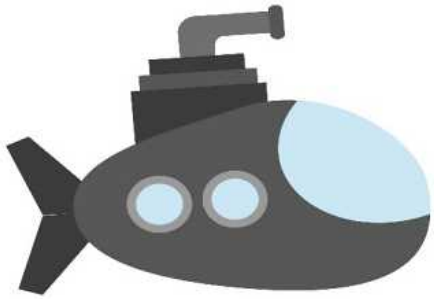
In the market for traditional cigarettes, the government has attempted to achieve a more efficient allocation of resources via the implementation and increase of indirect taxes over time. This includes the legislated 5% per annum increase over the next three years (2023-2025). While this has certainly helped to raise the relative price of traditional cigarettes, it has reduced the relative price of other (substitute) products, such as black-market cigarettes and/or e-cigarettes, which has resulted in higher demand and production. Given that the production of black-market goods [and/or e-cigarettes] create their own social costs, such as the proliferation of crime [or adverse health effects from e-cigarette consumption], this has a negative impact on allocative efficiency because it leads to an over-allocation of resource to the production of goods and/or services that are not in society's best interests.

A similar problem occurs in relation to the excise on alcohol, including the tax on alcopops (alcoholic beverages that resemble soft drinks). While these taxes are clearly designed to reduce the negative externalities associated with the consumption of alcohol, they have the perverse effect of encouraging the consumption of other potentially more harmful drugs whose relative prices is reduced following the introduction or increase in excise on alcohol. This is particularly problematic in the case of younger Australians (e.g. students) who are more likely to be lower income earners with greater sensitivity to the level (or change) in prices of competing (mind altering) products. Faced with the choice of consuming alcohol or illicit drugs, younger Australians will increasingly turn to the consumption of illicit drugs following any increase in excise on alcohol. This occurs because the tax effectively reduces the relative price of illicit drugs, discouraging the consumption of alcohol and encouraging the consumption of illicit drugs. Accordingly, the excise on alcohol has the unintended consequence of more resources flowing to the production of a substitute product (illicit drugs) which has the potential to have a net negative effect on efficiency in the allocation of resources and living standards.

Reneged government contracts

Federal and state governments will often enter into contractual obligations with the private sector for the provision of goods or services, including infrastructure projects and major events. These contracts are typically completed and deliver outcomes as intended by the government. However, on occasions, contracts are entered into that are cancelled or reneged, often for political reasons as governments change. This results in penalties being paid from the government to the private contractor for the 'losses' incurred as a consequence of the private contractor performing preparatory work, in addition to the potential loss of other contracts. Typically, the penalty clauses contained in these contracts are stacked in favour of the private contractor which comes at a huge expense to the government, and by extension, taxpayers. It effectively means that millions or even billions of dollars are delivered from the government sector to the private sector for very little (or nothing) in return. This comes at a huge opportunity cost and leads to an inefficient allocation of resources as the money forgone cannot be used in the production of other much needed government services, including health, education, or aged care services.

High profile examples include the Victorian Government's decision to cancel the contract to host the **2026 Commonwealth Games** on the basis that the projected cost to Victorian taxpayers had 'blown out' to excessive levels (i.e. more than $6 billion). The reneging of the contract resulted in the Victorian government making a compensation payment of $380 million to the major bodies involved in organising the games (e.g. the Commonwealth Games Federation). While this $380 million cannot be used to fund other Victorian government projects (potentially representing government failure), it can also be argued that it was a rational economic decision given the cost blowouts. Ultimately, it becomes a value judgement: Did the payment of the $380 million perversely deliver net economic benefits for Victorians on the basis that more than $6 billion was otherwise saved?



In late 2021, the Federal Government cancelled a **$90 billion submarine contract** it entered into with France which involved the construction of 12 conventionally powered submarines. Instead, the government eventually entered into a partnership with the United Kingdom and the United States (AUKUS) that involved a commitment to spend up to $368 billion on a fleet of up to eight nuclear powered submarines. The reneged French contract ultimately cost Australian taxpayers approximately $3.4 billion (close to $1 billion of which was paid directly to the French naval contractor). Once again, this comes at a huge opportunity cost given that the money cannot be otherwise spent on the provision of other government services.

In 2015, the new Victorian Government cancelled the contract to build the **East West link freeway project**, which was entered into by the previous government. The cancellation ultimately cost the Victorian taxpayer in excess of $1 billion in compensation payable to the private sector consortium. Again, this can represent another example of government failure given that the funds paid to the consortium, which delivered virtually zero economic benefit, could not be used on other Victorian projects that had the potential to deliver significant benefits for Victorian communities.

Over regulation

It can also be argued that government failure occurs if the costs of any given government intervention are greater than they could otherwise be (i.e. the opportunity cost of government intervention is not minimised). For example, a 2006 report by the Productivity Commission found that as a society we are potentially too risk averse, which leads to excessive and costly regulation (i.e. too much red tape!). The Commission found that:

> ***"… regulatory burdens fall disproportionately on the economy's many small (including 'micro') businesses, which lack the resources to deal with them. Tailoring regulation to limit the impact on small business and keeping regulatory costs down generally are essential if the 'engine room' of employment and economic growth is to prosper."***
>
> "***Australia clearly could not function well without regulation. However, in the Taskforce's view, there is too much regulation and, in many cases, it imposes excessive and unnecessary costs on business. In so doing, it also imposes costs on the wider Australian community, through higher prices, less innovation and reduced choice***."
>
> *https://www.pc.gov.au/research/supporting/regulation-taskforce/report/regulation-taskforce2.pdf*

This over regulation can reduce profits and increase losses, resulting in fewer resources flowing to the establishment and maintenance of businesses in Australia. Small businesses are a large employer and also provide important competition within markets which promotes the need to be both technically efficient (e.g. forces firms to find more effective production methods to reduce costs and maximise output) and dynamically efficient (e.g. forces firms to become more responsive to changes in tastes and preferences in order to gain market share and capture more profit). Ultimately, this excessive regulation leads to the nation's resources being allocated to the production of goods and services in a way that does not maximise living standards – which means that allocative efficiency is not achieved.

Whilst both the last Labor and Liberal Governments have stated their desire to reduce this excessive regulation, there is little doubt that we remain over regulated and, as recently as November 2019, the Prime Minister stated "*Our Deregulation Agenda has a laser focus on reducing the regulatory compliance burden on business*"
https://www.pm.gov.au/media/new-measures-delivering-deregulation-australian-business

Under regulation and underfunding of compliance: the case of flammable cladding

Government failure can also occur if regulation or funding for "compliance" is withdrawn or reduced inappropriately, demonstrating that getting the balance right is not easy, especially with so many vested interests to consider. This can be seen in the construction industry with a significant number of modern apartments being unsafe due to flammable cladding and other

faults. This has a number of causes, the core of which was the desire for builders/construction industry to cut costs, followed by the failure of government regulation.
The reduction in government funding for building inspections led to less enforcement of regulations and lower compliance levels by builders. Builders took advantage of the reduced number of inspections to 'cut corners', leading to many problems, such as people being evicted from their properties, others unable to get insurance without expensive fixes and building surveyors (who are responsible for making the final call on the quality of construction projects) finding it harder to get indemnity insurance. This, according to many recent reports, had (and has) the potential to cause a slow down and eventual freeze in new construction https://www.abc.net.au/news/2019-06-25/flammable-cladding-website-suggests-how-government-will-respond/11244182.
Other problems have also been found in the general quality of some buildings, leading to accusations of "cowboy/ dodgy" builders, which is also likely to reduce the demand for modern apartments and hinder the future flow of resources towards building new apartments.

As a consequence, many owners will be regretting their decisions to buy, and the demand for new apartments is likely to fall. In reality, too many resources flowed to building apartment blocks that would not have been bought if buyers were aware of the problems. In this respect, it is an example of asymmetric information as a market failure and ultimately reduces the ability to achieve allocative efficiency in the economy. State governments, who are responsible for building regulations and compliance, are potentially faced with heavy costs in helping to rectify the problems that they inadvertently contributed towards. The Victorian government is providing $300 million in funding and raising another $300m from levies on new construction to help rectify the problems and restore faith in modern apartments. These funds can no longer be used to fund other improvements or projects that the government could have spent the $300m on, meaning that it comes at a significant opportunity cost and further hinders the ability to achieve allocative efficiency and improve living standards.

Vocational educational training: VET FEE-HELP

As discussed under market failure, given that education contains public good characteristics (i.e. it is a merit good or a good with positive externalities in consumption) there will typically be an under-allocation of resources to its production unless the government intervenes. Employers are typically reluctant to invest in industry level and general skills training (as opposed to firm specific skills training) because employers cannot prevent workers from leaving a firm nor can they recoup the cost of training if they leave. As a result, governments intervene to ensure that a more optimal level of resources are allocated to education in general.

Vocational Education and Training (VET) is designed to equip students to gain qualifications for many types of employment (e.g. Certificates 1/2/3/4 in Hospitality or Aged and Community Care) as well as specific skills to help them in the workforce. During the early and mid-2000's, State governments increasingly moved away from Government run educational provision towards a more market-based system where private RTO'S (Recognised Training Organisations) competed to attract customers. It was felt that this would boost technical efficiency by "*creating incentives for public and private training providers to minimise costs. It would also raise allocative efficiency by more closely tying training provision to user demand and lift dynamic efficiency by* promoting innovation in service delivery."

Victoria and South Australia moved early in deregulating their VET training by reducing barriers to entry and handing out hundreds of licenses to new "colleges". Funding was offered under a "VET FEE-HELP" scheme, similar to the potentially more successful University HECS debt model. It was hoped that courses would quickly respond to fast changing industry requirements (dynamic and allocative efficiency). Instead many wrote the cheapest possible course curriculums, providing them online and reducing the quality and length of courses, whilst still charging the government full prices. It was found that many offered bribes to attract new customers such as Ipad's, trips to Bali and splitting the government training subsidy. These incentives were used to attract students with low educational achievements and an investigation by *The Age* found that operators even targeted vulnerable people or groups, such as those with intellectual and other disabilities, remote Aboriginal communities and immigrants with limited English.

According to government figures this scheme has cost taxpayers more than $7.5 billion, including loans that will never be repaid, and left many owing thousands for courses they never finished or for qualifications not fit for purpose. It also undermined the integrity and trust in VET training and potentially reduced the skills of the workforce with many firms and industry sectors claiming that, despite relatively high underutilisation rates (unemployment and underemployment combined), they struggle to find skilled workers. This makes it harder to improve productivity and boost our international competitiveness, undermining the ability to minimise costs (technical efficiency), quickly alter production (dynamic efficiency) or achieve the best allocation of resources to improve living standards (allocative efficiency). This huge sum of money could also have been used elsewhere in the economy such as government provided education and training (our TAFE system has seen reduced funding). The Joyce review into vocational

training found that *"most of the leading large scale (commercial) providers have been exposed as essentially fraudulent, exploiting government subsidies and leaving students with worthless qualifications.*" The regulator ASQA in 2015/16 cancelled the registration of 69 RTO's and by 2017/18 this had risen to 322.

In principle, the policy of adopting a more market-based system was potentially sound with The Age writing "the government's proposed changes to vocational educational sector are welcome, this debacle is a reminder that great care is needed when competitive principals are added to such areas as human services and education. With under-resourced regulators, inadequate sanctions and flawed legislation, the path to corruption and market failure was a disaster waiting to happen."

This highlights the difficulty in creating sound legislation with adequate funding to oversee its implementation and shows clearly that well intentioned government policy often leads to unintended consequences and potentially creates a combination of both market failure and government failure, reducing the economy's ability to achieve dynamic, technical and allocative efficiency.

Tax incentives contributing to housing affordability issues

The current tax laws in relation to negative gearing and capital gains tax concessions have negatively impacted on allocative efficiency in the Australian economy. Negative gearing allows investors to enjoy tax advantages not available on other types of investments (e.g. effectively offsetting interest costs against other taxable income) and these tax advantages for investing in housing are compounded by the 50% tax concession on capital gains. The operation of both tax concessions continues to fuel speculative investment in Australia's housing stock, which is a major factor behind the booming housing market up to 2022. By making it financially attractive to borrow and invest in houses, it has resulted in investors flocking to the market, causing house prices to rise so much that it has created a real housing affordability issue. This is characterised by younger Australians, who desire a house as a residence, rather than an investment, being locked out of the housing market. It therefore has led to an (allocatively) inefficient allocation of resources given that it has resulted in an undesirable social outcome. The increasing supply of housing stock owned by investors, at the expense of other Australians who are (or will be) forced to rent, prevents them from realising 'the dream' to own one's home. The removal of these tax laws therefore has the potential to make society better off, with more of the nation's resources devoted to the production and sale of owner-occupied dwellings.

The fast roll out of Jobkeeper in 2020

The JobKeeper wage subsidy was introduced in 2020 and involved the government effectively subsidising 'eligible employers' (e.g. businesses suffering a 30+ percent decline in revenue) by paying their employees $750 each per week [until September 2020 and at a reduced rate thereafter with the program ending in March 2021]. Its purpose was to support income and spending in the economy, as well as to discourage employers from dismissing employees during the 2020 economic downturn. While it certainly helped to assist with the economic recovery, there were several businesses who continued to receive support during the first six months of the program whose turnover (sales levels) actually increased. This was due to a design error in the scheme where businesses only needed to report a 'predicted' 30% fall in turnover [50% for large companies] in the first month of the program in order to receive the full wage subsidies for the first six months. This meant the profitable businesses that ultimately didn't suffer during the downturn were in receipt of subsidies that were not justified. This was an example of an unintended consequence of the initiative which had a negative impact on efficiency because the unwarranted subsidies came at an excessive opportunity cost, reducing allocative efficiency, given that the money could have been better used to assist with economic recovery in some other way, such as directing those funds to those with more genuine need for income support or spending on some other government program that would have better served the economy or society.

Exam Tip: In the 2023 study design, students no longer need to include a 'contemporary' example of government failure. This means that students have more scope to choose an example from the past that is interesting and memorable. The new study design also states that students need to explain how the chosen example impacts on one specific type of efficiency (allocative, productive, dynamic or inter-termporaral). While it is very **unlikely** that the exam will ask students to refer to a specific efficiency, such as inter-temporary, it is not impossible. The safest approach is to be prepared with an example (or examples) that can be linked to each type of efficiency.

Exam Tip: Technically, the Study Design requires students to think in terms of government failure in the sense that the government intervention led to a 'net' reduction in economic efficiency. The best responses will be those that attempt to make this argument. For example, in relation to subsidies provided to private vocational colleges (or subsidies provided to industries more generally), economic efficiency would decrease if it could be shown that the benefits of the subsidies are outweighed by the costs in terms of the rorting, waste and/or inefficiencies that became entrenched. Indeed, this point was made in the 2017 Examination Report where it was pointed out that students needed to do more than simply refer to unintended consequences - instead, they were required to make a link to 'reduced efficiency'.

REVIEW/APPLICATION QUESTIONS 4 – market failures and government intervention

1. ***Define what is meant by a market failure.***
2. ***With respect to 'public goods', what is meant by 'non-excludable' and non-rivalrous' (non-depletable).***
3. ***Identify two examples of a market failure (except externalities) and explain how each leads to an inefficient allocation of resources.***
4. ***Explain what is meant by the 'free rider principle' (or 'free rider problem') using an example like prison or defense services as the public good in question.***
5. ***Explain why a 'free market' is unlikely to provide a large fireworks display on new year's eve.***
6. ***Explain how the government overcomes the market failure related to public goods.***
7. ***Distinguish 'positive externalities from 'negative externalities'***
8. ***List one other 'positive externality' apart from health and education and outline why you consider it to be a 'positive externality'***
9. ***List one other 'negative externality of consumption' apart from tobacco, alcohol, and illegal drugs and outline why it is considered to be a 'negative externality'.***
10. ***Define the term 'externalities' and distinguish 'positive' from 'negative' externalities. In your answer, refer to 'social' costs and benefits.***
11. ***Explain how the government overcomes the market failure related to the existence of negative externalities in consumption.***
12. ***Explain how the government overcomes the market failure related to the existence of negative externalities in production.***
13. ***Explain how the government overcomes the market failure related to the existence of positive externalities in consumption.***
14. ***Explain how the government overcomes the market failure related to the existence of positive externalities in production.***
15. ***Explain what is meant by 'asymmetric information' in your answer refer to one contemporary example of asymmetric information.***
16. ***Draw a D/S diagram for the sugar market showing before and after a successful government advertising campaign about the dangers of high sugar consumption causing diabetes. Explain how the new equilibrium is achieved.***
17. ***Discuss why the government intervenes in the tobacco market? Ensure that you demonstrate an understanding of market failure and negative externalities.***
18. ***How does the government use indirect taxation on tobacco to improve the allocation of resources in the economy.***
19. ***Using an example of your choice explain why government intervention can lead to unintended consequences that reduce the efficiency of resource allocation.***
20. ***Using demand and supply diagrams show the impact of your selected example on the market in question [Show the old and new equilibrium price and quantity].***
21. ***Using these diagrams in your explanation discuss how relative prices have changed to alter the allocation of resources.***
22. ***Discuss why deregulation of vocational educational training has created market failure.***
23. ***Draw separate D/S diagrams for the events described below, and examine the impact on the market in terms of prices, production levels and resource allocation. You should attempt to justify why the government has intervened for each scenario.*** **(Tip: you must shift one of the D/S curves for each example and consider efficiencies and market failure.)**

i. ***In the market for cigarettes, the government increases tax (excise) on tobacco;***
ii. ***In the market for cars, the government reduces taxes on imports (tariffs);***
iii. ***In the market for LPG conversions, the government provides a cash grant to consumers who convert their cars from petrol to LPG;***
iv. ***In the market for fish, the government reduces the number of fishing permits in existence;***
v. ***In the market for motor vehicles, the government provides a subsidy to manufactures that produce environmentally friendly (i.e. 'green) vehicles;***
vi. ***In the market for water, the government builds a desalination plant in Wonthaggi;***
vii. ***In the market for housing in Wonthaggi, the government builds a desalination plant in the township;***
viii. ***In the market for electricity, the government provides rebates for households and businesses who install solar panels;***
ix. ***In the market for ready to drink mixed alcoholic beverages (i.e. alcopops), the government increases the indirect tax for these products;***
x. ***In the market for home insulation, the government provides a rebate for installation by households;***
xi. ***In the market for solar panels, the government provides a consumer subsidy;***
xii. ***In the market for electricity, the government repeals the carbon tax;'***
xiii. ***In the market for groceries, Coles and Woolworths collude against rival Aldi; and***
xiv. ***In the market for air-conditioners, Mitsubishi Electric induces one of its dealers to sell its branded air-conditioners at a higher price.***

24. ***Explain one example of government intervention that unintentionally leads to a decrease in allocative efficiency***
25. ***Explain one example of government intervention that unintentionally leads to a decrease in productive efficiency***
26. ***Explain one example of government intervention that unintentionally leads to a decrease in inter-temporary efficiency***
27. ***Explain one example of government intervention that unintentionally leads to a decrease in dynamic efficiency***

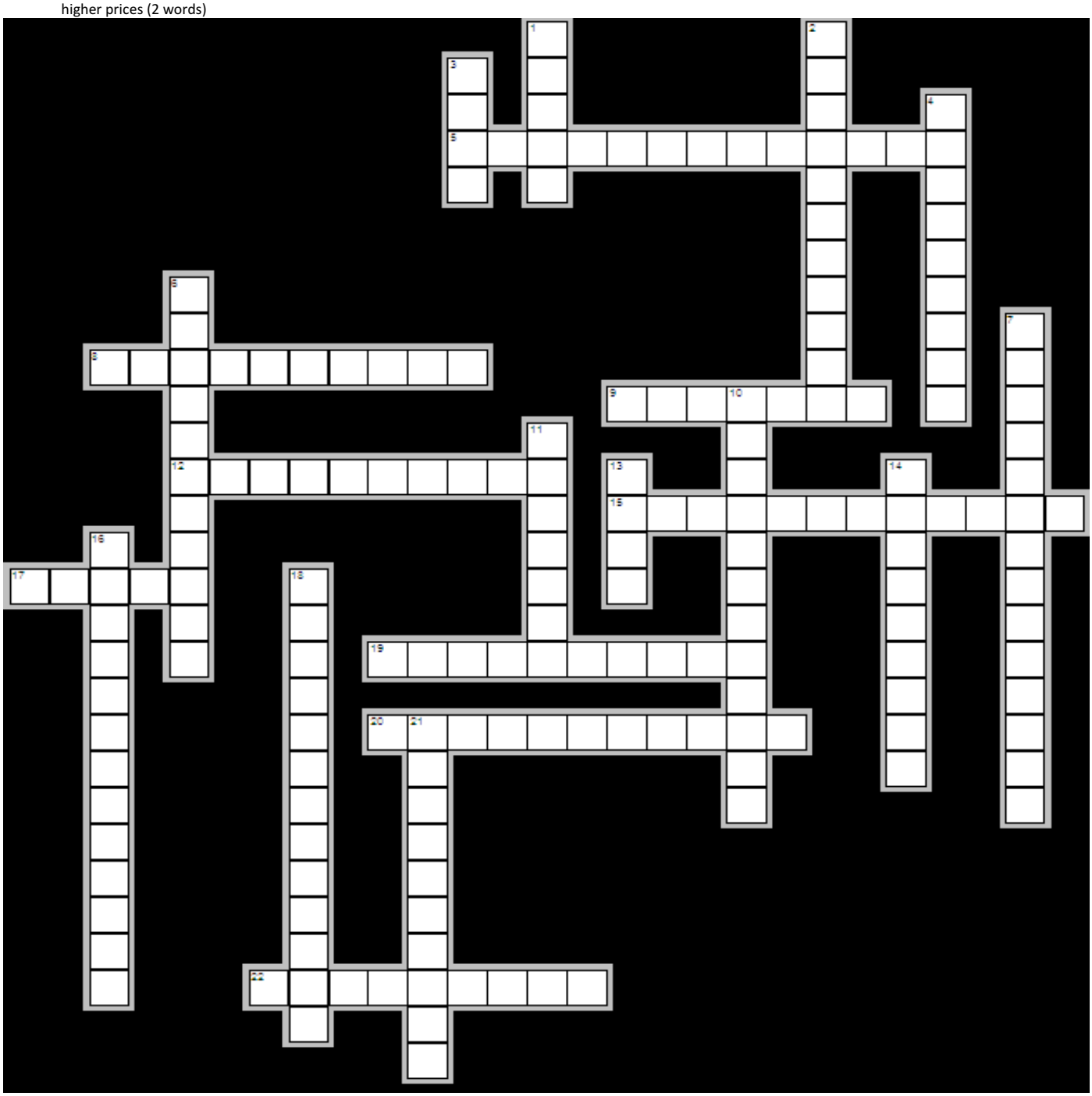
Quick revision crossword No 4
Market Failures

Across

5. Some argue this to be the greatest market failure the world has seen (2 words)
8. Public goods do not have this characteristic
9. A means by which the government can promote the production of merit goods (or goods with positive externalities)
12. These types of services are a common example of public goods
15. This is what causes producers to ignore the social costs associated with the production of some products (2 words)
17. The imposition of these is used to reduce the consumption and production of de-merit goods (or goods with negative externalities)
19. Private goods have this characteristic
20. The term used to describe the situation where dominant firms behave uncompetitively (2 words)
22. The problem of not being able to enforce payment from some consumers (2 words)

Down

1. These types of goods are also referred to as goods with positive externalities in production or consumption
2. A form of asymmetric information that involves an insured party failing to reduce risk taking behaviour and causing insurance companies to charge higher prices (2 words)
3. The competition watchdog (acronym)
4. This type of efficiency is likely to be compromised when a monopoly exists
6. Two words used to describe the third party (or spillover) effects stemming from negative externalities (2 words)
7. A classic example of a negative externality in consumption (2 words)
10. This is what causes consumers to ignore the social costs associated with the consumption of some products (2 words)
11. Unregulated markets will tend to cause a reduction in this
13. The acronym for Australia's version of an emissions trading scheme (ETS) that did not achieve parliamentary approval
14. The common example of a negative externality in production
16. Costs or benefits associated with the production or consumption of goods and services that are passed onto 'third parties
18. Occurs when markets, left unregulated, will tend to result in an over-allocation of resources to the production of some goods and services and an under-allocation of resources to the production of others (2 words)
21. Information of this variety creates a market failure



TEST YOURSELF : 50 MULTIPLE CHOICE QUESTIONS – AREA OF STUDY 1

1. In Australia, resources are allocated via

(a) 'The market' primarily, with some government involvement
(b) Government decision making, with a limited role for 'the market'
(c) consumers and their demand for goods and services
(d) producers and their demands for scarce resources

2. Which of the following is not regarded as being a 'factor of production'?

(a) capital
(b) natural resources
(c) money
(d) labour

3. The opportunity cost of producing a given commodity is:

(a) the price at which the commodity sells in the market place
(b) the best alternative jobs which the workers employed in its production could have obtained
(c) the value of the best foregone alternative which the resources used in its production could have produced
(d) the price paid for the resources used in its production

Andre Pitts, a student, can use his precious time after school either watching sport on TV or studying. The following are the various combinations he can choose (measured in hours):

TV(hours)	0	1	2	3	4	5
Study (Work requirements done)	20	16	12	8	4	0

4. The opportunity cost of Andre increasing his TV sports viewing time from one hour to four hours is:

(a) 12 work requirements
(b) 16 work requirements
(c) 8 work requirements
(d) 4 work requirements

5. When the price of a product is below equilibrium

(a) it means that there is excess supply and price will fall
(b) it means that there is excess demand and price will fall
(c) it means that there is excess supply and price will rise
(d) it means that there is excess demand and price will rise

6. Which one of the following statements is not true?

(a) the basic economic problem is one of choice
(b) choice is necessary because of limited wants and needs
(c) the means available to satisfy wants are limited
(d) entrepreneurship is a specialised form of labour resources

7. With respect to a production possibility curve, which of the following statements is false?

(a) unemployment is likely to occur when the economy is producing inside the frontier
(b) inflation is likely to occur when demand is at a point beyond the frontier (i.e. outside the curve)
(c) at a point in time, an economy cannot possibly produce at two different points along the frontier
(d) a movement along the curve, from one point to another, is unrelated to the concept of opportunity cost

8. Which of the following is <u>not</u> likely to shift the production possibility curve outwards in the longer term?

(a) an improvement in technology
(b) an decrease in the savings ratio (i.e. people saving less)
(c) an increase in the population
(d) an increase in the efficiency of labour

9. A firm will:

(a) seek to achieve an inelastic (i.e. STEEP) demand curve
(b) seek to achieve an elastic (i.e. FLAT) demand curve
(c) seek to promote competition in its industry
(d) seek to minimise profits and maximise costs

10. Any excess supply of a commodity indicates that

(a) the price in the market is too high
(b) inappropriate technology was applied causing over production
(c) resources are being wasted or used inefficiently
(d) poor marketing and promotion has left a shortfall in demand

11. If market equilibrium is $1.40 cents per litre for petrol, any attempt by government to place a <u>minimum</u> price of $1.60 to reduce petrol consumption, this will cause

(a) supply to increase, demand to fall, price to rise and excess supply
(b) supply to fall, demand to fall, price to fall and excess supply
(c) supply to increase, demand to fall, price to fall and excess demand
(d) supply to fall, demand to increase, price to rise and excess supply

12. The factor "entrepreneurship" is different to "labour" as entrepreneurship

(a) involves financial risk taking whereas labour generally does not
(b) is rewarded with money whilst labour is not
(c) is a capital resource whereas labour is a human resource
(d) is paid more than labour resources

13. Microeconomics examines all of the following with the exception of

(a) changes in Australia's rate of unemployment
(b) changes in pricing policies for the steel industry
(c) structural change in the telecommunications industry
(d) labour market reform via the introduction of Workchoices legislation

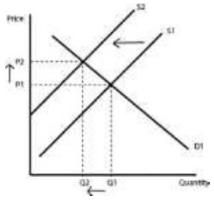
14. With respect to the market for oranges, which of the following statements is correct

(a) the price will rise when the supply curve shifts to the right
(b) the price will rise when the demand curve shifts to the left
(c) the price will fall when the demand for orange juice increases
(d) the price will rise when the price of mandarins (a substitute) increases

15. The government will intervene in the marketplace because

(a) a market will usually result in lower productivity levels in the economy
(b) a market results in higher levels of unemployment
(c) a market will not allocate resources in ways that maximise national welfare
(d) a market will typically be associated with lower rates of inflation

16. Which of the following would be most likely to cause a shift from S_1 to S_2?



(a) a decrease in the price of the commodity
(b) a boost in government subsidies
(c) a reduction in transport and freight charges
(d) an increase in the cost of raw materials

17. A movement back down the supply curve for beef (a contraction of supply) is most likely to be caused by

(a) a decrease in the price of pork
(b) drought conditions in cattle grazing areas
(c) a decrease in the price of beef
(d) a tax placed on the production of beef

18. Which of the following is <u>least</u> likely to be a government action that reduces smoking:

(a) an increase in excise on tobacco
(b) banning cigarette advertising
(c) regulations that prohibit smoking indoors
(d) the re-introduction of a carbon tax

19. The discovery of a major new oil deposit would result in

(a) a movement upwards (expansion) along the supply curve for oil
(b) a movement downwards (contraction) along the supply curve for oil
(c) a shift to the right to a new supply curve for oil
(d) a shift to the left to a new supply curve for oil

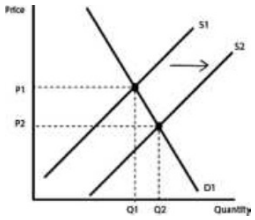
20. The 'law of supply' suggests that

(a) price and quantity supplied are positively related
(b) price and quantity supplied are inversely related
(c) increases in supply curve are caused by a price fall
(d) supply will expand until market equilibrium is reached

21. Assume that we are operating in a purely competitive market and that Coke and Pepsi are close substitutes. A heat wave is likely to:

(a) increase the price of Coke with the price of Pepsi remaining constant
(b) increase the price of Pepsi and Coke
(c) not affect the price of either Coke or Pepsi
(d) decrease the price of Coke and increase the price of Pepsi

22. Which of the following is most likely to cause the change in equilibrium as illustrated in the adjacent diagram?



(a) higher cost of materials
(b) higher government subsidies
(c) higher business taxes
(d) higher interest rates

23. With respect to demand and supply for petrol

(a) the price will rise when labour becomes cheaper
(b) the price will rise when the demand curve shifts to the left
(c) the price will fall when the demand for cars increases
(d) the price will fall when the price of LPG (a substitute) decreases

24. When the price of bananas is above equilibrium, the following will occur in that market for bananas

(a) the price will increase because of excess supply
(b) the price will decrease because of excess demand
(c) the price will decrease because of excess supply
(d) the price will increase because of excess demand

25. In the market for motor vehicles, a rise in productivity is likely to

(a) cause supply to increase and price to rise
(b) cause supply to decrease and price to rise
(c) cause supply to increase and price to fall
(d) cause supply to decrease and price to fall

26. In the market for any good or service

(a) the price will rise if there is excess demand in the market
(b) the price will rise if there is excess supply in the market
(c) the price will fall if the price of a substitute increases
(d) the price will fall if the price of a complement decreases

27. A product that experiences a 50% increase in demand in response to a 100% reduction in price has a price elasticity of demand that is relatively:

(a) elastic
(b) unit elastic
(c) inelastic
(d) elastic and inelastic

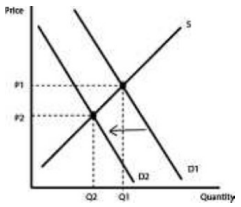
28. For basic foodstuffs such as bread and milk, price elasticity of demand tends to be:

(a) close to zero
(b) greater than negative one
(c) equal to negative one
(d) relatively elastic

29. Which of the following conditions are not consistent with a market that is perfectly competitive?

(a) few buyers and sellers
(b) firms sell homogeneous or identical products
(c) there is a high degree of mobility of firms
(d) no individual seller can influence the market price

30. Which of the following would be most likely to cause a shift from D1 to D2 in the market for guns?



(a) increased incidence of wars around the world
(b) the removal of shooting events from all Olympic competitions
(c) the removal of government assistance to weapons manufacturers
(d) the removal of government restrictions on gun ownership

31. If the government decided to legalise the consumption and production of marijuana.
a) The price of marijuana will increase and the production of marijuana will decrease
b) The price of marijuana will drop and the production of marijuana will increase
c) The price of marijuana will drop and the production of marijuana will decrease
d) Everyone smoking normal tobacco will switch to consuming marijuana

32. If brands A and B are substitutes then a decrease in the price of B will
(a) decrease the demand for A
(b) increase the demand for A
(c) increase the supply of B
(d) decrease the supply of A

33. Which one of the following is NOT a reason for the government intervening in the Australian economy?
a) to promote the production of public goods
b) to protect against or prevent the incidence of positive externalities
c) to reduce the rate of depletion of common access resources
d) to reduce the incidence of corporate fraud

34. Which of the following would be most likely to cause a shift of the supply curve for a product to the left?
(a) a decrease in taxes paid by the industry
(b) a removal of government subsidies to that industry
(c) a rise in productivity
(d) a decrease in the cost of raw materials

35. Which of the following would be most likely to cause a shift of the demand curve to the right?
(a) a decrease in the price of the good
(b) an introduction of a government subsidy to that industry
(c) a reduction in the price of a substitute good
(d) a decrease in rates of personal income tax

36. Which of the following is the least convincing reason for government intervention in markets?
(a) pollution from factories
(b) non production of socially desirable services such as defence or prisons
(c) higher prices of goods and services over time
(d) an underallocation of resources to the production of goods with positive externalities in consumption

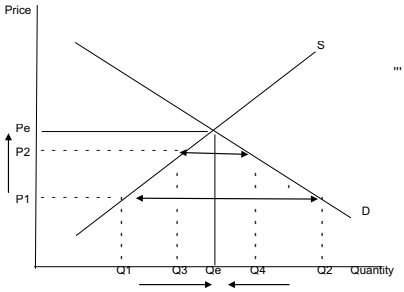
37. In competitive markets, an increase in the demand for a product will most likely result in
(a) a decrease in the production of that product
(b) an increase in the production of a substitute product
(c) an increase in the price of a substitute product
(d) an increase in the price of a complimentary product

38. A large percentage fall in the price of a product that leads to a very small increase in quantity demanded means that
(a) price elasticity of demand is low and the value of sales will rise
(b) price elasticity of demand is high and the value of sales will rise
(c) price elasticity of demand is low and the value of sales will fall
(d) price elasticity of demand is high and the value of sales will fall

39. In a competitive market
(a) if the price of one commodity decreases and the demand for related commodity increases the two goods are likely to be compliments
(b) an increase in price tends to reduce excess supply of a commodity
(c) a decrease in the price tends to reduce excess demand for a commodity
(d) if two commodities are substitutes, an increase in the price of one will lead to a decrease in the price of the other

40. Which of the following best describes what is happening in the adjacent market?

(a) the market was in excess supply with price too low and the price is increasing towards equilibrium
(b) the market was in excess demand with price too high and the price is falling towards equilibrium
(c) the market was in excess demand with price too low and the price is rising towards equilibrium
(d) the market was in excess supply with price too high and the price is falling towards equilibrium



41. Which of the four events described below could usually be expected to cause an increase in the demand for coffee in a competitive market?

(a) a rise in the income of consumers
(b) an increase in the price of sugar (a complementary product)
(c) a decrease in the price of tea (a substitute product)
(d) a shift in consumer preferences towards tea

42. If a product has been the subject of negative publicity due to a poor safety record, this is likely to

(a) cause a shift to the left of the demand curve
(b) cause a movement down along the demand curve
(c) cause a shift to the left of the demand curve and a lower price elasticity of demand
(d) cause a shift to the left of the demand curve and a higher price elasticity of demand

43. The Headmaster and Board at a private school is contemplating whether rising production costs (brought about by a 5 per cent increase in teacher salaries) can be passed on in the form of higher school fees.

(a) they should be concerned about a possible fall in enrolments if the demand for places at the school is price elastic
(b) they should be concerned about a possible fall in enrolments if the demand for places at the school is price inelastic
(c) price elasticity of demand for places at a school is never a consideration for the Headmaster or the Board
(d) The income of parents is not a factor affecting the price elasticity of demand for places at private schools

44. When a farmer falsely claims that barn laid eggs are free range eggs, this is an example of which type of market failure?

(a) asymmetric information
(b) market power
(c) externalities
(d) public goods

45. Which of the following events is most likely to decrease the price of petrol?

(a) the increase in excise tax on petrol
(b) the success of an advertising campaign promoting petrol over LPG
(c) cheaper LPG supplies
(d) a war in the middle east disrupting petrol supplies

46. Higher petrol prices are most likely to result in all of the following <u>except</u>:

(a) an increase in the demand for larger vehicles, like 4WDs
(b) a higher price for LPG
(c) an increased demand for public transport
(d) an increased exploration effort by companies mining for oil

47. If a company has been found guilty of misleading and deceiving consumers it will tend to result in

(a) higher prices and greater production
(b) lower prices and greater production
(c) higher prices and less production
(d) lower prices and less production

48. A private producer is unlikely to provide prison services without some government financing or assistance because

(a) it would be too costly to produce
(b) prisoners would not have the money to pay for the service
(c) it would be too difficult to extract payment from all users of the service
(d) there would not be a demand for the service

49. With respect to demand and supply in the labour market for teachers

(a) a wage above the market clearing level will not result in unemployment
(b) higher wages for English teachers is a potential solution to the problem of over-supply of English teachers
(c) higher wages for Maths teachers is a potential solution to the problem of under-supply of Maths teachers
(d) differential pay rates in the teaching profession will alleviate shortages and will not have any impact on teacher morale across the State

50. Which of the following is <u>not</u> a factor affecting the price elasticity of demand for a brand new 40 foot yacht?

(a) the availability and price of substitute goods (e.g. smaller yachts, speed boats, etc)
(b) the income of consumers or buyers
(c) the importance of the good to potential buyers (e.g. whether it is considered a necessity or luxury)
(d) the availability of raw materials used in its production

Answers to multiple choice questions appear at the end of the Study Guide.

UNIT 3: MINI EXAM NO. 1

UNIT 3 AREA OF STUDY 1 (Total marks = 60)

<u>Section A:</u> Multiple choice (total marks = 15)

<u>Section B:</u> Short answer questions (total marks = 45)

Section A: multiple choice (15 MARKS)

1 The price of electric cars will fall if

(a) the government removes road user charges for owners of electric cars
(b) The price of petrol increases above $2 per litre
(c) The price of electricity falls
(d) There are continuing technological advances in the electric car manufacturing industry

2 If a nation improves efficiency via the introduction of new technology, then the change may be illustrated graphically by

(a) a movement along the production possibility curve
(b) a shift outwards of the production possibility curve
(c) a shift inwards of the production possibility curve
(d) a shift towards the production possibility curve

3 New technology that improves the storage life of most fruit and vegetables will tend to:

(a) increase the price elasticity of demand
(b) reduce the price elasticity of demand
(c) increase the price elasticity of supply
(d) reduce the price elasticity of supply

4. In 2022 the Federal Court found that BlueScope engaged in cartel conduct with another supplier in relation to the supply of steel products in Australia. Which of the following best describes the ultimate reason for this type of government intervention?

(a) protect against the incidence of negative externalities
(b) promote competition in the economy
(c) to protect against corporate fraud and dishonesty
(d) limit the production of undesirable (or de-merit) goods in the economy

5. Which of the following factors is <u>not</u> likely to be a factor that results in higher supply of a product in the market place?

(a) an increase in the price of a substitute product
(b) an increase in productivity at the firm producing the good
(c) a reduction in labour costs at the firm producing the good
(d) the removal of a government subsidy to the supplier of that product

6 Which of the following factors is <u>not</u> likely to be a factor that results in higher demand for a product in the market place?

(a) an increase in productivity at the firm producing the good
(b) lower tax rates
(c) higher consumer confidence
(d) an increase in the price of a complement

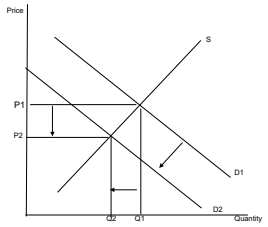
7 A business will be operating in a less competitive market if:

(a) it faces a very elastic demand curve
(b) it faces no competition from imports
(c) there are no substitute products in that market
(d) it has lots of competing businesses in that market

8 Which of the following market failures is most relevant in relation to climate change?'

(a) Externalities
(b) Public goods
(c) Common access resources
(d) Asymmetric information

9. In the market for 'large cars', which of the following best explains the change in market conditions as depicted in the D/S diagram?



(a) poor safety record of smaller cars
(b) lower costs of production for manufacturers of large cars
(c) rising petrol prices
(d) bigger and better roads

10. Natural disasters in parts of Australia over recent years are most likely to have caused

(a) the price of agricultural items to fall
(b) the production of agricultural items to increase in the short term
(c) the income of farmers to increase
(d) the price and quantity of imported agricultural products to rise

11. Which of the following is unlikely to be an example of a market failure?

(a) Non-production of prison services
(b) Greed of some entrepreneurs
(c) Pollution from factories
(d) Depletion of common access resources

12. Which of the following is least likely to be an example of a service that results in positive externalities?

(a) Gambling
(b) Education
(c) Scientific research
(d) Health

13. Which of the following is unlikely to be an example of government intervention to reduce the harmful effects of smoking cigarettes?

(a) Indirect taxes
(b) Regulation
(c) Advertising
(d) Subsidies

14. The relative shortage of tradesmen is likely to have which of the following effects in the construction industry?

(a) Higher prices for buildings as the demand is likely to increase in line with rising incomes
(b) Higher prices for buildings as the costs of production for construction companies is likely to rise
(c) Lower prices for buildings as demand is likely to fall in light of higher production costs
(d) Lower prices for buildings as the costs of production for construction companies is likely to fall.

15. With respect to the price elasticity of demand (PED):

(a) Businesses prefer to have a flat curve (i.e. a high PED for their products)
(b) Lower PEDs are consistent with lots of competition
(c) A low PEDs for a business means it can increase price and actually make more profit
(d) The PED will increase in response to successful advertising campaigns

STRUCTURED QUESTIONS (45 MARKS)

Question 1 (25 marks)

(a) Explain how an increase in the price of a substitute can affect the supply of a product. Use a fully labeled demand and supply diagram to illustrate. (4 marks)
(b) Discuss how an increase in productivity at Kraft foods may affect the market for Kraft products. (4 marks)
(c) Explain what is meant by an 'efficient allocation of resources'. (2 marks)
(d) Define technical efficiency and discuss how an increase in technical efficiency can improve living standards. (3 marks)
(e) Discuss how changes in relative prices can result in a reallocation of the nation's resources. (4 marks)
(f) Explain why a business will prefer a low price elasticity of demand (PED) for its product and discuss one factor that might cause the PED to increase. (4 marks)
(g) *In free and perfectly competitive markets, it is assumed that there are lots of buyers and sellers, there are no barriers to entry or exit and products are homogenous.* Explain why markets are likely to be less competitive when any <u>two</u> of the above conditions are not met. (4 marks)

Question 2 (20 marks)

(a) Define a market failure. (2 marks)
(b) Explain how asymmetric information may contribute to an inefficient allocation of resources and discuss one government action to account for the market failure. (4 marks)

(c) Explain why any <u>one</u> of the following services is generally regarded as an example of a public good: prisons, defence services or lighthouses. (4 marks)

(d) Discuss two measures the government could take to minimise the problems associated with any negative externality in production, such as excessive emissions of Co2 into the atmosphere by big businesses. (4 marks)

(e) Describe one example of government intervention in markets that unintentionally leads to a decrease in the efficiency of resource allocation. (4 marks)

(f) Outline one way the government can increase competition in markets. (2 marks)

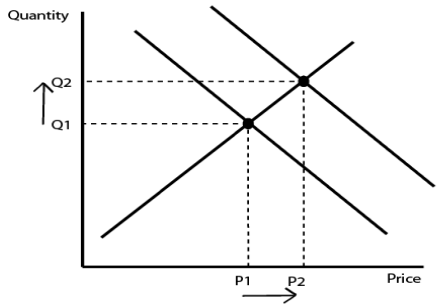
Answers and suggested responses at end of the Study Guide

YOU BE THE ASSESSOR: UNIT 3 AOS 1

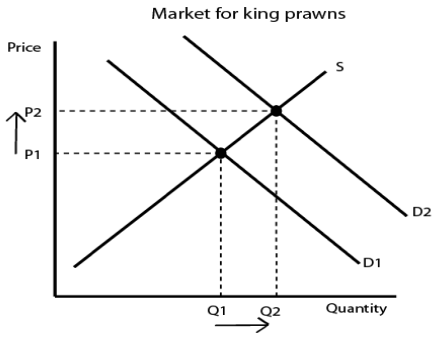
In this section, you are required to assess the responses presented for each of the questions. You should award the responses a score (either full marks or less than full marks) and justify your decision. Once complete, compare your assessment to that of the authors [provided at the rear of the Study Guide.

1. **a) Draw a fully labelled diagram below and show how an increase in the demand for king prawns at any given price is likely to be reflected in the diagram. 2 marks**

Sample Answer 1



Sample Answer 2



Justification_____

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b.) Outline and justify two demand factors that would be expected to shift the demand curve for king prawns to the right and interpret how this is likely to influence the equilibrium price and quantity for king prawns. 4 marks

<u>Sample 1</u>

Two Demand factors that would be expected to shift the demand curve for king prawns to the right could be a decrease in income tax rates and an increase in immigration that boosts our population. Lower income taxes will increase disposable income, meaning they have more to spend and hence increases the quantity consumers wish to buy at any price, shifting the demand curve to the right. An increase in Australia's population will also shift demand to the right at any given price. This shift in the demand curve will allow producers to increase their prices leading to an expansion in supply and demand at the new equilibrium where more king prawns (quantity rises) are sold at a higher price.

Justification_____

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Sample 2

Two demand factors that would be expected to shift the demand curve for king prawns to the right could be lower income taxes increasing disposable incomes and an increase in Australia's population brought about by higher immigration. As disposable income increases consumers have additional money available and their capacity to buy goods and services increases so a "normal" product like king prawns would be expected to see an increase in demand at any given price (ceteris paribus). Equally as Australia's population increases (ceteris paribus) there will be more people to consume prawns shifting the demand curve to the right at any given price. At the original equilibrium price there will be an excess of demand or a shortage of supply. The producers will observe that they can increase their prices and sell more prawns which will increase the profits available. The higher prices and profits will see more resources allocated to supplying prawns so the supply of prawns will expand towards

the equilibrium price. As the price rises the demand will contract along the new demand curve until demand is equal to supply and a new equilibrium with higher prices and quantities of king prawns sold.

Justification_____

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2. Discuss the role of competitive markets in achieving dynamic and allocative efficiency within an economy and explain the link to living standards. 6 marks

Sample 1

Allocative efficiency refers to how well resources such as capital and labour are being used to produce the goods and services that best satisfy society's needs and wants and hence maximise overall living standards (our quality of live in material and non material terms). If allocative efficiency is achieved then resources are best satisfying society's needs and wants and no alternative use will make society better off so living standards are maximised. Dynamic efficiency refers to how quickly resources can be utilised to satisfy society's needs and wants as our tastes and preferences change and the point of allocative efficiency changes. How quickly resources can be reallocated to produce these goods and services will be important in satisfying our living standards. If it takes a long time for resources to move to produce what society desires then dynamic efficiency is low and living standards will decline until allocative efficiency is achieved. For example, if sugar free drinks become more popular but producers take two years to alter their production towards these drinks, then dynamic efficiency is slow and allocative efficiency will not be achieved for at least two years. A competitive market, with many buyers and sellers, will force businesses to produce more efficiently and so allocative and dynamic efficiency are likely to be achieved. This will result in higher living standards than would be likely to occur in a non competitive market.

Justification_____

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Sample 2

Allocative efficiency refers to how well resources such as capital and labour are used to produce goods and services that best satisfy society's needs and wants. If allocative efficiency is achieved then no alternative use of resources will make society better off so living standards (our quality of life) are maximised. Dynamic efficiency refers to how quickly resources can be utilised to satisfy society's needs and wants as our tastes and preferences change and the point of allocative efficiency changes. The time it takes for resources to be reallocated to produce these goods and services will be important in satisfying our living standards. If it takes a long time for resources to move to produce what society desires then dynamic efficiency is low and living standards will decline until allocative efficiency is achieved. A competitive market involves many buyers and sellers who have very good information about what is in demand, as well as ease of entry and exit so they can easily move their resources to producing goods and services that are in high demand (consumer sovereignty) and hence increase profits. If producers are slow to reallocate resources then a competitor/s will quickly enter the market or increase output to gain market share and hence increase their own profits, whilst the less dynamic producers will find the lower demand for what they are producing will reduce profitability. Given that producers seek to maximise their profits, as consumer preferences change and demand shifts between good and services, the relative price and profit firms can make from the more highly demanded items will also increase. Firms that are slow to adjust will lose market share and potentially go broke. Accordingly, a competitive market will force firms to be more dynamically efficient and therefore more responsive to consumer demands compared to markets that are less competitive. This will result in higher (material) living standards as consumers will have access to better quality and/or lower priced goods and services. For example, if sugar free drinks become more popular but producers take years to respond because they have an effective monopoly/oligopoly (i.e. market power prevents an erosion of profits that would occur in a more competitive market), then dynamic efficiency is low and allocative efficiency will not be (quickly) achieved, lowering living standards.

Justification_____

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Q3. Explain why a producer would prefer to operate in a market with low price elasticity of demand (PED) for a product and outline the significance of one factor influencing the PED. 4 marks

Sample 1

The PED refers to how the quantity consumers are willing to buy will respond to a change in the price of the relevant good or service. In a market with low PED, a given % change in price will cause a smaller % change in quantity demanded. For example, if raising the price by 10% leads to a 5% fall in sales, then the product will have a low PED. This means that a low PED allows producers to make more profit if they raise prices because the negative impact on quantities sold will not be enough to outweigh the positive impact from higher prices, enabling the total sales revenue (i.e. price X quantity) to increase. In contrast, a high PED would mean that a 10% rise in price would lead to a greater fall in demand (of say 50%),

which will lead to lower profits overall due to the higher price having a larger impact on the quantity bought. Producers therefore wish to operate in a market with low PED. The degree of necessity to consumers will influence how consumers respond to a change in price. If a good or service is a 'necessity' (i.e. a need), then as the price rises consumers are likely to keep their demand relatively constant and reduce consumption of less important goods and services (i.e. those that are not necessities). Addictive products, like tobacco, are a good example of products with a low PED. It highlights an important reason why governments impose higher and higher excise on tobacco, knowing that the higher tax actually increase government tax revenue.

Justification_____

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Sample 2

The PED relates to how quantity responds to a change in price. Low PED will allow firms to raise price and increase profits. Producers generally seek to maximise profits and so they want to operate in a low PED market whenever possible. A factor that would be likely to influence the PED is the degree of necessity. This can be influenced by advertising so more advertising will mean that a product is more likely to be a necessity and elasticity will therefore be lower.

Justification_____

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Q4. Evaluate the role of free and competitive markets in allocating resources. 5 marks

Sample 1

A 'free' market is one that is free of any intervention/controls and so producers are free to use resources in whatever way that maximises profits. Markets are effective (dynamically efficient) in allocating resources to satisfy consumer demand (consumer sovereignty). In order to produce goods and services, resources such as labour and capital are required. In a 'competitive market' with many buyers and sellers, and easy entry and exit from a market, producers will quickly respond to changing consumer demands in order to maximise profits. This reallocation of resources occurs because, as the demand for one output increases, producers will observe shortages in the market and the price rises to attract new supply, increasing the relative price received compared to an alternative use. This increases the relative profit from the product in greater demand and results in unregulated markets being effective at allocating resources to satisfy consumer preferences. However, what some consumers desire (e.g. illicit drugs, tobacco, overconsumption of alcohol) may not be what best satisfies the needs and wants of society as a whole (allocative efficiency). Accordingly, satisfying consumer needs is unlikely to be the most allocatively efficient use of resources that best satisfy society's needs and wants, which ultimately means that free markets will lead to an (allocatively) inefficient allocation of resources. Markets will fail to deliver the best outcomes for society. In other words, free and competitive markets will fail to achieve the most allocatively efficient allocation of resources and these 'market failures' can come in a number of forms. For example, markets fail due to externalities associated with production and consumption of some goods and services which leads to an over or under-allocation of resources to the production of these goods and services. In the case of pollution as a negative externality, it is often created in production that damages current and future living standards. Without regulation, excessive pollution would occur and there would be an over-allocation of resources to relative 'dirty' forms of production and therefore an under-allocation of resources to 'cleaner' forms of production. If, however, producers were forced, via laws/regulations, to pay the full cost of this pollution (i.e. the government attempts to internalise the negative externality), then the market price would rise and consumers would buy less. This would ultimately result in fewer resources being allocated to this output and hence help to rectify the market failure (too many resources causing pollution). Because of market failures such as this, governments intervene in markets via regulations and controls in order to ensure that allocative efficiency is more likely to be achieved than under an unregulated market.

Justification_____

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Sample 2

An free market is one free from any regulation and controls. A market is where buyer and sellers come together and in a competitive market where there are many buyers and sellers and easy entry and exit from the market producers will be forced to produce what is in demand or another firm will enter or increase their output to gain market share and higher profits. This occurs because as demand increases producers will observe shortages in the market and will increase their prices to increase their profits and make it worthwhile allocating more resources to its production. This raises relative price compared to alternative uses of resources and hence relative profit increases and more of this output will be created. Dynamic efficiency refers to how quickly resources can be allocated to satisfying consumer needs and the fear of competition and losing market share will mean that firms will quickly alter what and how much they produce to maximise their own profits by satisfying consumer sovereignty. A regulated market with controls and laws may be slow to respond to changing consumer needs for instance government regulation restricting where and how many houses or flats can be built on land will force up prices and reduce the markets ability to satisfy consumer needs for more property. Thus an unregulated market will be best at satisfying consumer sovereignty due to improved dynamic efficiency.

Justification_____

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Q5a. Using an example, explain how government intervention in a market has unintentionally reduced the efficiency of resource allocation.
6 marks

Sample 1
Markets left to competitive forces will typically be technically efficient and dynamically efficient because of the need to stay competitive and to produce what is in demand (consumer sovereignty), in order to maximise profits. However, consumers do not always "buy" what is in society's best interests, leading to an under (e.g. education) or over allocation of resources to some forms of production (e.g. illicit drugs), hindering our ability to achieve allocative efficiency (the allocation of resources that best satisfies the needs and wants of society). The government typically involves itself in markets to alter the allocation of resources so that resources are more likely to be used in an allocatively efficient manner.

E10 Biofuel is a fuel that contains 10% ethanol. The NSW and Qld governments have mandated (regulation) that 4% of fuel in QLD and 6% of fuel sold in NSW should be E10 biofuel. The government has intervened in this market to promote a more environmentally friendly fuel source that reduces reliance on fossil fuels (reducing negative externalities by helping to reduce emissions, assist with managing "climate change" and boosting intertemporal efficiency by ensuring fossil fuels last longer), and to establish an Ethanol industry in Australia.

The government intervention mandates large fines of up to $550,000 per quarter for not achieving the E10 targets. However, consumers typically do not want to buy E10 fuel and many retailers have removed regular unleaded fuel pumps to force consumers to buy E10. While E10 demand has increased, consumers have also switched to buying premium fuels which most cars do not need, costing motorists more money and reducing spending on goods and services that would bring greater utility.

The Productivity Commission and the ACCC both recommend the removal of the biofuel mandates because it reduced consumer choice, damaged dynamic efficiency due to reducing competition and did not bring environmental benefits, indeed protecting local ethanol producers by discounting the fuel excise on local production but imposing the full excise on imported fuels actually prevented the importation of more environmentally friendly fuel sources.

Overall, the government intervention led to an allocation of resources that actually reduced how efficiently resources are used in the Australian economy because consumers were "forced" to buy more expensive fuel that reduced their discretionary income and hence their ability to satisfy needs and wants that bring greater utility. This also reduces the income of other businesses potentially increasing unemployment, which prevents technical efficiency from being achieved since there are unused resources sitting idle. Resources were also used for ethanol production rather than in areas of greater comparative advantage such as agricultural exports. On top of these unintended consequences the desired environmental benefits were not achieved. In combination, this intervention has made it harder to achieve allocative efficiency and as a result government intervention has led to a less efficient allocation of resources in the economy.

Justification_____

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Sample 2
Governments typically intervene in markets to correct for market failure which occurs when resources are not used in a way that best satisfies the needs and wants of society (allocative efficiency). Consumers will typically buy what is in their own perceived self-interest rather than consume what is in the best interests of society. For instance, we typically over consume tobacco, illicit drugs and fossil fuels (which create negative externalities whereby costs are imposed on third parties) and under consume education and health (positive externalities, providing benefits to third parties).

In order to ensure that workers are paid a salary that allows them to live a "dignified" quality of life, the government intervenes in labour markets by setting a minimum wage. This wage is adjusted each year by Fair Work Australia (FWA). In 2017, FWA also reduced penalty rates for weekend work because it said it created a two tier playing field between large firms who set wages based on Enterprise Bargaining Agreements (EBA's) and small businesses who were forced to pay weekend penalty rates. As a result, FWA felt that many small businesses simply stayed closed or worked reduced hours.

Setting a minimum wage above the market clearing equilibrium price/wage (where demand = supply) means that more workers are attracted to offer their services and so participate in the labour market. This leads to an expansion in the supply of labour. However, setting the wage too high increases the cost of employing people and so firms typically substitute to capital (machinery/automation/robotics) or reduce the hours they open. As a result, the demand for labour falls, leading to a contraction along the demand curve for labour and higher unemployment. As a consequence, allocative and technical efficiency are not achieved, demonstrating that government intervention can have unintended consequences.

Justification_____

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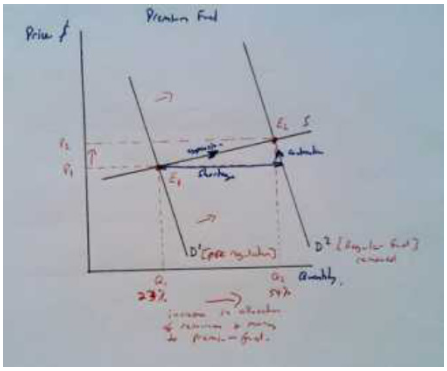
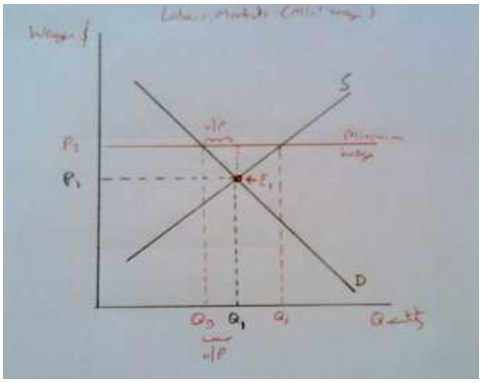
Q5b. Use a fully labelled diagram to show how the market referred to in part (a) will be affected by either the government intervention, or some other factor. 3 marks

Sample 1



Sample 2



Q5c. Explain how the market adjusts following the government intervention. 2 marks

Sample 1

Following the mandated (regulation) requirement for E10 fuel sales and significant fines for non compliance, producers/ suppliers in NSW removed the ability for consumers to buy regular petrol by limiting the availability/ supply of regular fuel. Since fuel is a necessity for many households, it has a low price elasticity of demand, which meant that consumers needed to substitute to an alternative fuel source. Many moved to buying Premium fuel which shifted the demand curve to the right, such that at any given price, the demand for Premium fuel increased, leading to a shortage of Premium fuel at the original price. This sends a signal to producers that they can increase prices and make higher profits, leading to an expansion in supply and more resources being allocated to the supply of Premium fuel in NSW. Supply for fuel is relatively elastic since fuel is easily stored and so only a relatively small price rise is needed to attract the extra resources required to meet the increased demand. As the price rises demand contracts until a new equilibrium is achieved at E2, with a higher price and greater quantity being bought and sold.

Sample 2

Setting the minimum wage (P2) above the market clearing wage (P1) has led to an expansion in the supply of people willing to work, boosting participation rates. At the same time the higher wage has reduced producers demand for workers leading to a contraction along the demand curve (Qd). This has created unemployed workers (Q1-Qd).

Justification_____

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Q6. Explain how a decrease in the price of a good can affect the demand for a complement. 2 marks

Sample 1

A decrease in the price of a good can affect the demand for a compliment as if the good is cheaper, consumers will be more willing to purchase that the compliment in comparison to another that is more expensive, therefore demand for the complement will increase. This will in turn lead to an excess demand at the old price, which forces up the price and leads to more resources being allocated to the production of the complement over time.

Justification_____

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Sample 2

A complement is typically consumed with a product, such as butter being a complement for bread. If there is a decrease in the price of a good (such as bread), it is likely to increase the demand for its complement (such as butter) because bread consumption is likely to rise (due to the law of demand), which necessarily leads to an increase in demand for its complement given that both goods are consumed together.

Justification_____

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Q7. Using an example, explain how government intervention in markets to address market failure can unintentionally decrease the efficiency of resource allocation. 6 marks

Governments typically intervene in markets to correct for market failure. An example of intervention is the use of excise taxes to reduce the demand and hence quantity of resources allocated towards tobacco based products and services. Since 2013 the Federal Government has been imposing an additional 12.5% excise tax increase on tobacco each year until 2020. Because smoking is addictive the demand for cigarettes is price inelastic meaning that demand falls by a smaller percentage than the price rises so that producers who collect the excise tax typically pass most of this cost on to consumers. However, these high prices have led to a rise in criminal activity because some consumers are substituting towards illegal tobacco which has reduced the effectiveness of higher prices to limit the demand for tobacco and hence how resources are allocated.

Sample 1

Justification_____

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Sample 2
Market failure occurs when markets are not allocating resources in an efficient way that will maximise living standards. Unregulated markets are typically driven by what consumers wish to buy. However, consumers do not always buy what is in their best interests which leads to resources being allocated in a way that does not maximise the well being of society overall (allocative efficiency is not achieved so market failure occurs).

As a result governments intervene in markets to correct for this market failure but this intervention can lead to a less than optimal allocation of resources. For instance, tobacco and smoking creates negative externalities (costs imposed on third parties not paid for by the "consumer") such as passive smoking and higher health costs. To correct this externality (market failure) the government has been raising the excise tax on tobacco by 12.5% per year. This has seen the price of cigarettes in Australia increase significantly more than the prices paid in some countries (less than $2 a packet in some Asian countries). These price differences create large profits for criminal groups to exploit and cause many consumers to substitute to illegal tobacco products, leading to significant amounts of excise tax being avoided due to black market sales and an increase in the costs of policing illegal activities.

When an economy is directing more resources at criminal activities it is very unlikely to be achieving the allocation of resources that best satisfies society's needs and wants. The lost tax revenue cannot be used to improve services and infrastructure, further reducing the capacity to allocate resources in way that best maximises living standards. Additional resources are also being allocated towards policing the increased criminal activity reducing the ability to prevent other more serious crime such as hard drugs and gang activities. More resources are also being directed at criminal activity, also reducing how effectively we are using resources. As a result, it can be argued that the high excise taxes being imposed to reduce tobacco consumption and improve resource allocation, are not being done in a way that minimises the opportunity costs of the interventions and creates unintended consequences that impact negatively upon allocative efficiently.

Justification_____

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Q8. Referring to the chart, describe the trend in the growth of housing prices since 2017. 2 marks

Sample 1
Australia's house prices have fallen since 2017, from approximately 10% in 2017 to approximately -7% in 2019. This followed a period where prices rose from approximately 4% in 2016 to 10% in 2017. The rise in prices during that period occurred because of the strong demand for houses relative to the supply and caused what became known as the housing affordability crisis, with young Australians locked out of the market. Thankfully, prices started to fall in 2017 as more housing construction occurred and demand fell as consumers became fearful about possible government policies that had the potential to reduce prices.

Justification_____

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Sample 2
The growth in Australia's house prices have trended down from a growth rate of approximately 10% in 2017 to a growth rate of approximately -7% in 2019.

Justification_____

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Chapter 2 [Unit 3 AOS 2] Domestic macroeconomic goals

The nature and purpose of economic activity

Up to this point we have mainly focused on microeconomics issues via the study of markets. We have analysed the behaviour of individuals, businesses and governments in specific sectors of the economy and learned concepts such as: demand, supply and market clearing prices. We will now move to examine issues of a 'macroeconomic nature'. This means that we will look at 'economy-wide' issues, such as *'aggregate demand', 'aggregate supply', 'macroeconomic activity', 'output', 'employment' and 'income'.*

Many of the theories we have learned in microeconomics are still applied to macroeconomics. In fact, macroeconomics simply reflects the millions of microeconomics decisions made in markets, every day. In this area of study we now move to a more 'big-picture' way of thinking. For example, we move from looking at prices and quantities traded in certain markets to looking at the average prices (inflation) or aggregate quantities traded (e.g. GDP) across the whole economy.

Note that a microeconomic analysis assists government policy makers devise policies to improve the structure and performance of particular sectors or markets in the economy such that a more efficient allocation of resources can be achieved. In contrast, a macroeconomic analysis helps to devise policies that aim to improve the performance of the economy as a whole such that the key macroeconomic goals of governments can be achieved.

Economic activity refers to the expenditure, production (i.e. output), employment and income that takes place in an economy when goods and services are produced and sold.

There are lots of models that economists use to help understand macroeconomic activity, including aggregate demand and aggregate supply, the circular flow model and the business cycle, all of which are explained in further detail below.

QUICK QUIZ: Shifting from 'micro' to 'macro' thinking

For each microeconomic concept below change your thinking to macroeconomics (e.g. we move from looking at 'markets' to 'the economy'

Microeconomics	Macroeconomics
Markets	The economy
Prices	
Quantity traded	
Demand	
Supply	
Efficient allocation of resources	

The difference between material and non-material living standards and factors that may affect living standards, including access to goods and services, environmental quality, physical and mental health, crime rates and literacy rates

The difference between material and non-material living standards

As discussed, macroeconomic activity involves the production of goods and services, income earned from this production and expenditure on goods and services. This cycle of production, income and expenditure occurs because it provides a means by which economic prosperity and living standards can be advanced for people in society. However, living standards can be measured in both material and non-material terms.

Material living standards relate to the physical enjoyment that people derive from the use of goods and services that are provided in the economy. This is most commonly measured by the level of (and changes in) real GDP per capita (person). This involves dividing the total value of real production that has taken place in an economy over a period of time (i.e. real GDP) by the total population. It provides a rough guide as to the average income or spending power (or share of production) enjoyed by Australians.

Non-material living standards refer to the range of factors that affect our quality of life, with the exception of those factors that are commonly measured in material terms (e.g. real GDP per capita or average household wealth). It includes factors like air quality, exposure to crime, freedom of expression, access to natural resources and mental health.

Factors that may influence living standards

The most obvious factor influencing (material) living standards is our ***access to goods and services*** that are produced by the business sector. Our ability to purchase goods and services ranging from necessities (e.g. food, clothing and shelter) to luxuries (e.g. holidays and entertainment) ultimately depends on the purchasing power of the income we earn from working or via the receipt of transfers, such as government pensions or unemployment benefits. When economic activity is growing, reflected in relatively high levels of real GDP, it should result in higher levels of incomes per capita (per person) and lead to an increase in the access to goods and services for Australians on average. This is clearly a major reason for the government implementing policies that seek to stimulate economic activity (or economic growth) over time.

However, when devising policies, governments are increasingly placing emphasis on non-material factors that impact on our quality of life. This can be seen in the growing emphasis on sustainable economic development (such as recent efforts to find renewable forms of energy) and conservation of the natural environment. ***Environmental quality*** will impact on our immediate enjoyment of life via the ability to enjoy clean waterways, fresh air or an unpolluted environment more generally. However, efforts to improve environmental quality more generally will ultimately feedback to protect our ability to derive income from the use (or exploitation) of our natural resources, which protects the material living standards of future generations.

Interestingly, as a country gets richer, it has the capacity to devote more of its resources to the preservation of the environment. For example, the rapid increase in China's development and material wealth has enabled it to make more concerted efforts to implement policies that are designed to reduce pollution and protect its environment. Similarly, even in already developed countries, the improvement in material wealth over time (combined with advances in technology) has, in some instances, resulted in positive outcomes for the environment. For example, it is possible to fish in the Hudson (New York) and Thames (London) rivers today (and even eat the fish!) when this was not possible 30 years ago. Accordingly, growth in real GDP (or income) per capita over time will not only improve our access to goods and services, but it will also result in more tax revenue that can be devoted to spending on the environment which helps to improve our non-material living standards.

Our living standards will also be heavily influenced by factors such as our physical and mental health, life expectancy, crime rates and literacy rates. High levels of ***physical and mental health*** will have the potential to make us more productive, increasing our income earning ability and therefore access to goods and services. However, improved health levels will also greatly impact on our enjoyment of life more generally. It will tend to improve our ability to enjoy freedom of movement with fewer ailments or illnesses into older age and also minimizes our exposure to the negative effects associated with mental illness such as depression, which might include social withdrawal and suicide.

High rates of **life expectancy** that have been experienced in the developed world, including Australia, can have both positive and negative effects on living standards. On the one hand, a higher life expectancy can prolong our ability to enjoy the benefits of material consumption, enabling us to improve our lifetime income earning capacity and amass greater levels of wealth that can be enjoyed into retirement. However, on the other hand, a longer life could mean that more income needs to be earned over the course of our working life in order to sustain us through a longer retirement. In addition, a longer life could also be a result of advances in medical technology that enable some people to live with illnesses or diseases that negatively impact on their enjoyment of life.

In relation to **crime rates**, the extent of the impact on living standards will depend on the type of crime being committed. 'White collar' crime, such as fraud and insider trading, will have the potential to decrease efficiency and economic activity, which ultimately affects incomes per capita and the ability to access goods and services. This is because these crimes are examples of market failures (asymmetric information) and ultimately cause consumers (or investors) to reduce expenditure on goods or services that they might otherwise have undertaken. For example, stockbrokers engaging in the crime of trading on the basis of insider information will result in many consumers of financial services (or investors) not investing in the stockmarket, which ultimately reduces the ability of the 'financial sector' to efficiently provide funds for business investment. This negatively impacts on AD, real GDP, incomes per capita and access to goods and services.

Other crimes, such as those against 'the person', including murder, assault and rape, clearly have a negative impact on the (non-material) quality of life of victims of crime and society more generally. The rise of terrorist crimes in Australia, and around the world, is a perfect example of how crime (or even the threat of crime) can increase anxiety levels and reduce our enjoyment of life. While crimes do indeed perversely create economic activity in terms of the money spent on crime prevention (e.g. money spent on providing a police force and security services), these economic benefits (e.g. greater employment and income) are outweighed by the negative effects of crime more generally.

Literacy rates refer to the ability of a given population to read or write. High rates of literacy will typically translate into higher material standards of living given that employment opportunities (and income earning potential) will be enhanced for those with higher literacy skills. Those unable to read or write will usually be restricted to low paying, low skilled jobs (such as manual labour) that are increasingly becoming scarce in light of the advances of technology. This means that people with the lowest levels of literacy are more likely to be unemployed, relying on relatively low government transfer income that will permit access only to the most basic of goods and services. To the extent that low levels of literacy and (long term) unemployment is correlated to crime rates, the negative impact on living standards is amplified. Low literacy rates should also negatively influence non-material standards of living given the importance of communication to social connectedness. Those unable to read or write will be restricted in their ability to contribute to conversations or become an active member of our democracy.

Exam Tip: Examinations typically require students to demonstrate an understanding of material and non-material living standards. In the 2020 examination for example, students were required to link a movement in the exchange rate to material and non-material living standards (Q1c) and increased demand for product/changes in relative prices to living standards. The best performing students for these types of questions are generally those who can maintain a more 'macro' focus when discussing living standards (e.g. linking material living standards to real GDP/income per capita and linking non-material living standards to events like climate change, resource depletion, air quality, mental health of the unemployed, etc.) as opposed to a more limiting or 'micro' focus (e.g. linking the key variables to the impact on a producer or a consumer).

The five-sector circular flow model of income, including the role of households, businesses, government, financial institutions and the external sector in an open contemporary macroeconomy

Economic activity can be better understood via the **five-sector model of an economy,** with five key sectors in the economy connecting the key flows in the economy. These sectors are:

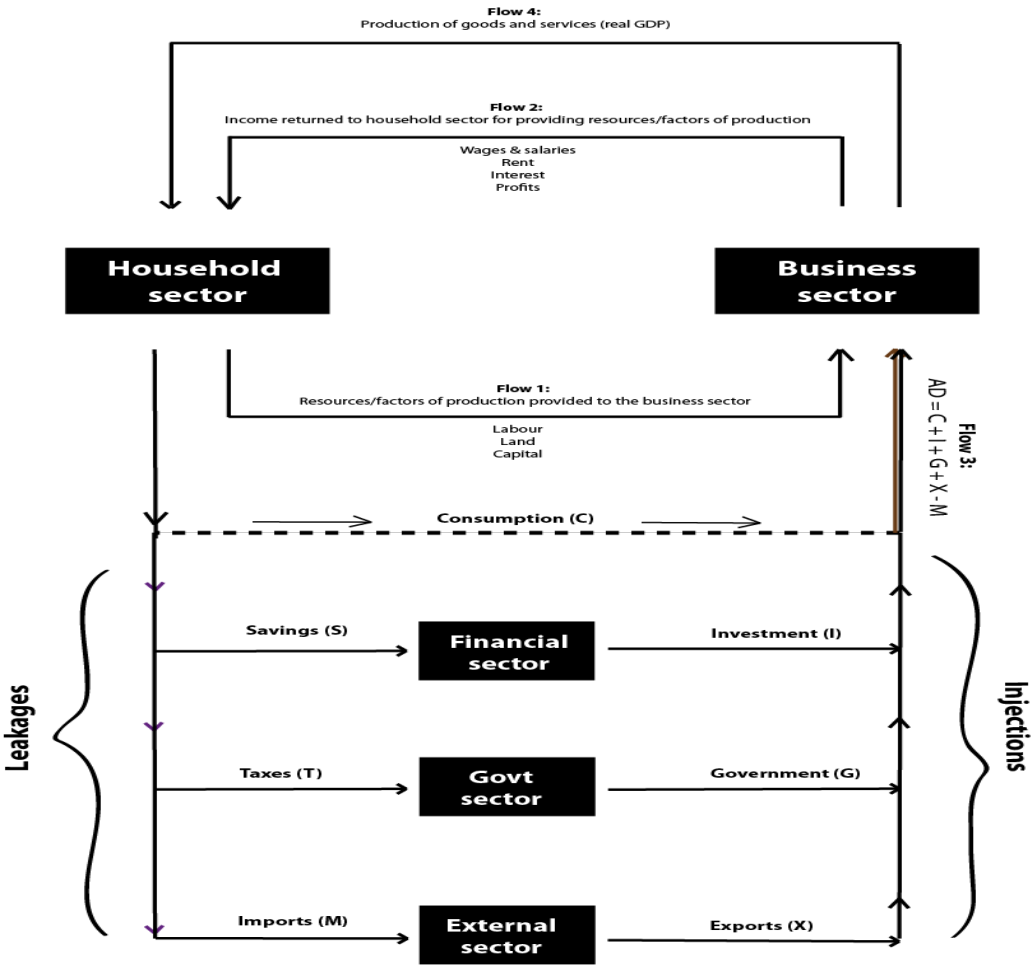
- The Business sector
- The Household sector
- The Financial sector
- The Government sector
- The External sector

As highlighted in the model below, the flows of **production**, **income** and **consumption** occur as a result of transactions between the Business and Household sectors. The Household sector provides the Business sector with resources (such as labour) and this is highlighted by flow 1 in the diagram. In return, the Business sector provides the household sector with income (such as wages), which is highlighted by flow 2. Part of this income is then consumed via the purchase of goods and services (i.e. Consumption), which forms part of flow 3. However, part of the income earned by households does not immediately result in the spending on Australian goods and services because the income is diverted through the Financial, Government and External sectors in the following three ways:

- Part of household income is **saved** (leakage from the model) in the Financial sector (e.g. put into bank accounts), who then ultimately lend the money back to other households or businesses (injection into the model). The money ends up being spent either in the form of Investment or Consumption.

- Part of household income is taken by the Government sector in **taxes** (leakage), but it too ultimately finds its way back into AD (injection) either via Government demand (such as spending on infrastructure) or via Consumption once welfare recipients (such as pensioners) spend government transfers.

- Part of household income is spent on foreign goods and services (i.e. **imports**), which detracts from AD (leakage) given that it does not represent demand for goods and services that are produced by Australia's Business Sector. But this is at least partially offset by foreign demand (injection) for Australian goods and services (i.e. exports).



Overall, the total demand placed on Australia's business sector is made up of AD (flow 3) which then determines the total real value of production in the economy, which of course is real GDP (i.e. flow 4).

The use of the model helps us to gain a better understanding of the influences affecting AD and economic activity. For example, it should be apparent that any decision by the Household sector to increase its rate of savings (e.g. because households have lost confidence in the economy) will tend to reduce the growth of AD and economic activity unless the Business sector is immediately willing to increase investment spending by the same amount. If the Business sector is also experiencing low confidence levels, then an equivalent amount of investment is unlikely to occur. Over 2020 the combination of record low consumer confidence and restricted spending due to lockdowns led to an increase in the savings rate which slowed Consumption and Investment spending and economic activity. Over 2021-22 as Australians emerged from lockdowns, confidence surged and household began to spend these savings in the economy. In fact, in the later part of 2022 when the RBA began to raise the rate of interest, it commented that households had 'strong balance sheets' and had built up significant savings over 2020-21 which would allow them to better withstand any increase in interest rates. [The policy implications will be explored more fully in Part 2 (Unit 4) of the Study Guide.]

Similarly, a decision by the Government sector to decrease taxes without any corresponding decrease in government spending (i.e. increase budget deficits) should also act to increase AD and economic activity (in the short term) as leakages decrease relative to injections. Over 2023, the Labor government continued to rejected calls to repeal the previous Coalition government's legislated Stage 3 income tax cuts (due to come be introduced in 2024) which will increase AD and stimulate growth. [This is explored in further detail in Part 2 (Unit 4) of the Study Guide.]

With respect to the External sector, an increase in the international competitiveness of Australian exporters and import competing producers could also serve to stimulate AD and real GDP as Australians will tend to purchase more locally made goods and services (rather than overseas products) and foreigners will tend to purchase more exports from Australia, once again leading to increases in injections and decreases in leakages. Over 2023, a depreciating AUD served to do just this, as Australians were discouraged from

purchasing more expensive imports and foreigners were enticed to purchase more Australian exports. [This is explored in greater detail below in AOS 3.]

Extension: A simple model of an economy

Assume a country is extremely primitive in the sense that it does not:

- invest (i.e. all production is consumed);
- have a government; nor
- trade with other countries.

In this country's economy, it must hold that production, income and expenditure are identical (as we expect) and total expenditure (AD) is:

AD = C

Now assume that people in the economy realise that there are benefits to saving some of their income and investing it for future growth.

Savings (S) 'leak' from economic activity (leakage) before reappearing in the form of investment or further Consumption ('injection') and our AD becomes:

AD = C + I

Now assume that the value of 'government' is recognised, and the people form a government to rule and provide 'public' goods and services. They levy taxes (T) which are another 'leakage' from the economy, but these are 'injected' again via the provision of G1 and G2 which provides a stimulus to AD. Our AD becomes:

AD = C + I + G (G1 + G2)

Finally, assume that the value of international trade is recognised and the economy imports goods and services, 'leaking' further money from economic activity. However, the sale of exports 'injects' money into economic activity. Our AD becomes the same AD that exists for every sophisticated economy in the world:

AD = C + I + G + X – M

Note that the combined leakages are:

S + T + M = total leakages

I + G + X = total injections

Over time, leakages must equal injections in every economy so that:

I + G + X = S + T + M

Accordingly: **(I-S) + (G-T) + (X-M) = 0**

- This means that if, for example, the level of Savings over a period are less than the level of investment (i.e. I > S), and the government's budget is balanced (G = T), then we must have a Trade (or 'current account') Deficit (M > X); and

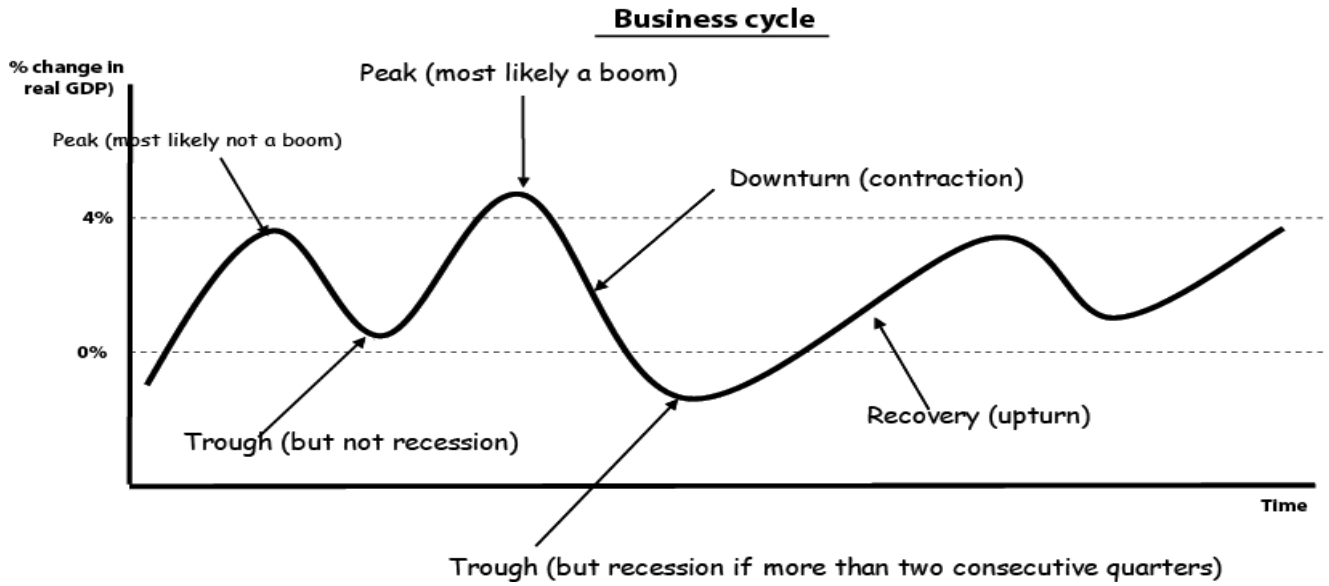
- If (S = I) and we have a budget deficit (G > T), then again we must have a Trade Deficit (M > X).

These implications are useful when examining external transactions later in the Study Guide.

Exam Tip: Students are not required to demonstrate an understanding of the 'simple model of the economy' as shown above. It is included to provide students with an introduction to the key macroeconomic flows in the economy which should assist in an understanding of the 'the circular flow model of income'. This is a key knowledge point in the current Study Design) and is covered below.

The business cycle and its causes

This is also referred to as the 'trade cycle' or 'economic cycle'. It's another way of thinking about economic activity in macroeconomics, the business cycle shows economic activity or % change in GDP (y-axis) over time (x-axis). If we plot the actual movement of economic activity on a graph, peaks and troughs will become evident, with clear 'cycles' becoming apparent. This is described in the diagram below:



The major points to note about the economic (business) cycle are:

- All cycles are characterised by peaks, troughs, recoveries and downturns
- Not all peaks result in 'booms' in economic activity
- Not all troughs result in 'recessions'
- The length of each economic cycle is rarely the same (e.g. the length of one recovery and peak may be much longer than the recovery or peak experienced in the previous economic cycle)

Why do we have business cycles?

When the economy is in an upturn **or expansion** and it approaches a peak the following events are typical:

- An increasing rate of growth in production
- Confidence is increasing
- Production is strong and capacity is beging to be utilized
- Inflationary pressures beging to emerge
- Unemployment is decreasing

When these factors are strong and pronounced (e.g. very high production growth, capacity utilisation and employment), the economy is said to be in a boom. What normally accompanies **a peak** (particularly a **boom**) is:

- Increased wage pressures
- Higher interest rates (demand for money relative to supply)
- Rising inflation (both demand and cost)
- Overvalued asset prices (such property and shares)
- Higher import levels as a result of production exceeding capacity
- A growing reliance on debt

The culmination of these factors then normally result in **a contraction** or downturn in the level of economic activity for reasons such as:

- Increased costs via higher interest rates and wage pressures
- A realisation that debt levels become unsustainable and asset prices are too high
- Reduced competitiveness of our tradables sector
- Lower confidence of consumers and producers

- Decreased AD via lower Consumption (C), Investment (I), Exports (X) and higher Imports (M) spending

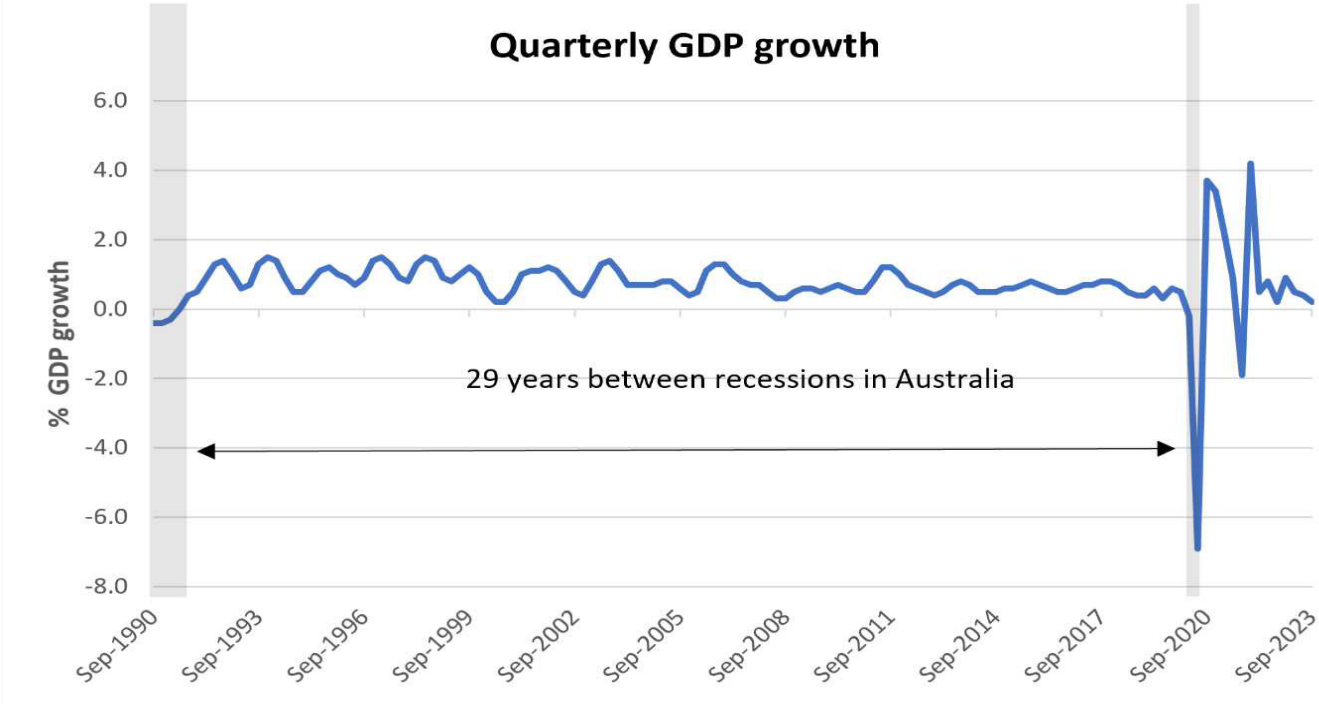
The contraction usually finds a low point or **trough** charaterised by:

- Slow or declining rate of growth in production
- Underutilisation of capacity
- High unemployment
- Low inflation and falling interest rates
- Reduced wage pressures

In this environment, with lower inflation, declining interest rates and falling wage pressures, the economy will eventually rebound (or recover) and the cycle inevitably continues.

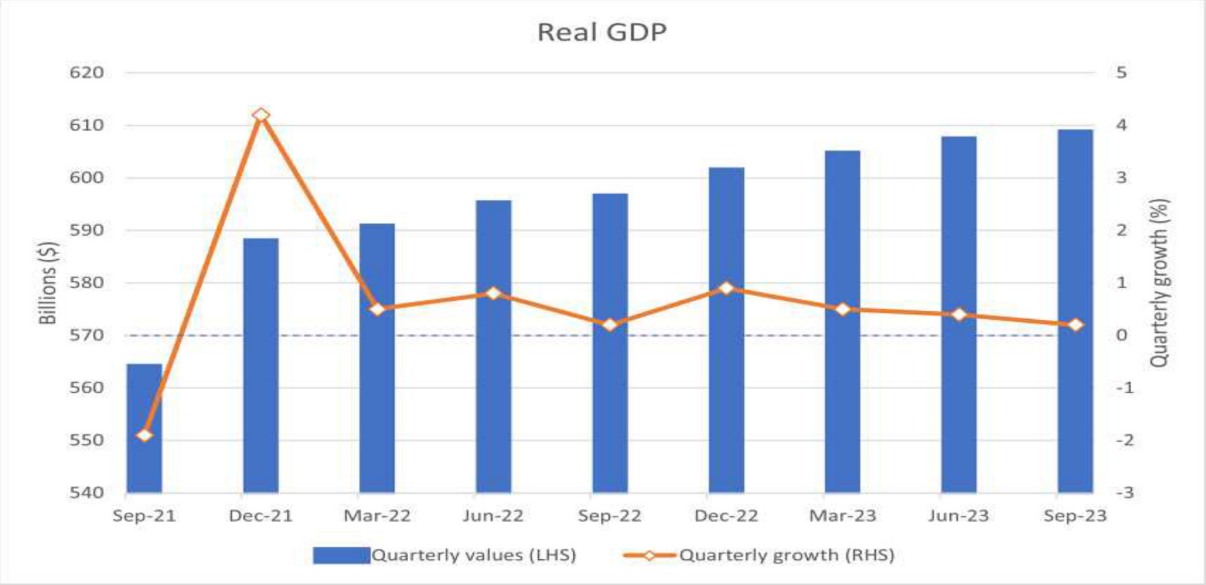
If the contraction in the level of economic activity is protracted enough the situation is referred to as a **recession**, which is technically defined as two consecutive quarters of negative GDP growth. This is what occurred in Australia during 2020 as the economy experienced the negative demand and supply shocks induced by the COVID-19 pandemic. You can see below that Australia did not experience a technical recession for almost 30 years between 1991 and 2020 (highlighted by the shaded area on the graph), this is incredibly uncommon. There are many reasons for this including, strong population growth and continuing high global demand for commodities which are in abundance in Australia. Despite this extended period of positive economic growth, there were plenty of expansions, contractions, peaks and troughs over the period, in which are evident between the two recessions marked on the chart.

Australia's business cycle over the past 33 years



Exam Tip: In the 2023 economics exam, students were asked to identify the current stage of the Australian businesses cycle with reference to a current economic indicator. This question highlighted the importance of students understanding the current state of the Australia economy, including key economic indicators and the likely stage of the business cycle over the past two years.

If we zoom in on recent GDP data (chart below), growth in the June and September quarters of 2023 was 0.4% and 0.2% respectively, reflecting a softening of the Australian economy and **a contraction in the business cycle**. You can see the value of GDP has been increasing for every period September 2021 to 2023 (see bars and the left axis), however in the more recent quarters it has been increasing at a much slower rate of growth (see line and the right axis). This slowdown in real GDP growth is largely due to the RBA raising interest rates over 2022 and 2023, with the aim of slowing spending and encouraging saving. Some economists are now predicting the next quarter of growth will be negative.



Exam Tip: In the 2019 exam, Q2a required students to explain the meaning of the term 'business cycle'. It is important that students do not focus unnecessarily on the word 'business' in the term 'business cycle', which often leads to an inaccurate micro (business) focus, such as how a business' profits or production move over time. Instead, students need to maintain a 'macro' focus and appreciate the importance of referring to terms like 'economic activity'/'economic growth' over 'time'.

Exam Tip: Q2b and 2c of the 2019 exam leveraged off Q2a (business cycle) and required students to demonstrate the key skill listed in the Study Design, to 'analyse economic relationships'. In Q2b students needed to explain how an AD factor contributed to a business cycle contraction. Many students typically err by failing to clarify what is meant by a 'business cycle contraction', and then failing to explore the relationship in sufficient depth. With respect to Q2c, students needed to explain the likely effect of a business cycle expansion on the rate of economic growth and on the rate of inflation. Many struggle to comprehend that a business cycle expansion necessarily means that economic growth increases, and/or struggle to show how a business cycle expansion could actually lead to further economic growth. In addition, many students fail to establish a clear link between the business cycle expansion and inflation, making no reference to the relevance of aggregate supply/productive capacity in the economy.

While a **boom** is normally characterised by strong production, high inflation and low unemployment and **recession** by weak production, low inflation and high unemployment, since the 1970's economies have, at various times, experienced situations of low production growth, high inflation and high unemployment. This is referred to as a period of **stagflation**, which occurred in Australia between 1973 and 1983, with unemployment reaching a peak of 10.2% in 1983 and inflation averaging 11.6% per annum over the entire period!

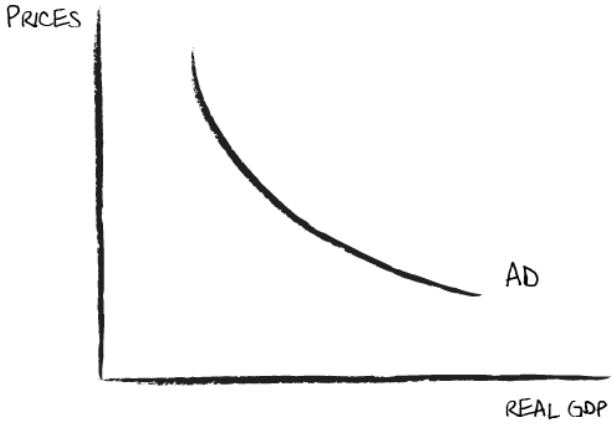
Even prior to the COVID-19 induced economic downturn of 2020-21, some economists argued that Australia, as well as other developed economies, have been going through a period referred to as **secular stagflation.** This is characterised by a prolonged period of relatively low economic growth, triggered by levels of AD that are too low and resistant to extremely low interest rates (which are in turn caused by a savings glut). In Australia's context, the ageing population has helped to raise savings relative to spending, and the resulting low interest rates (assisted by expansionary monetary policy) has been insufficient to spark AD given the relatively high level of Australia's household indebtedness. Those who believe that secular stagnation was indeed affecting parts of the world highlight that monetary policy (and therefore low interest rates) would not be effective in returning economies to stronger rates of economic growth. Instead, they claim that budgetary/fiscal policy needs to be more fully employed to stimulate AD and AS.

Of course, the (global) recession of 2020 (and further negative economic growth in later 2021) highlighted the relative impotence of traditional monetary policy measures to stimulate AD and economic growth. As a consequence, the Reserve Bank of Australia decided to employ non-traditional methods to stimulate the economy and the federal government delivered the most expansionary budgetary policy initiatives on record. [The policy implications will be explored more fully in Part 2 (Unit 4) of the Study Guide].

The meaning and importance of aggregate demand and the factors that may affect the level of aggregate demand in the economy, including disposable income, interest rates, consumer confidence, business confidence, the exchange rate and rates of economic growth overseas

You should recall that AD represents the total demand for goods and services produced in Australia, made up of the following components:

AD = C + I + G1 + G2 + X – M



The relationship between AD and the aggregate (total) price level in the economy is similar to the relationship between demand for an individual good or service and price, in the sense that there is an inverse relationship. However, the reasoning is not entirely the same. For individual products, when the price falls, we assume that everything else remains constant (ceteris paribus) and the price drop encourages both a 'substitution' (substitution effect) into the product as other competing products are 'relatively' more expensive as well as the 'income' effect. The AD curve shows the ability and willingness of households, businesses and governments to purchase Australian made goods and services at each price (general) level.

Extension: why the AD curve is downward sloping

When the general price level falls on the other hand, it causes AD to rise for the following types of reasons:

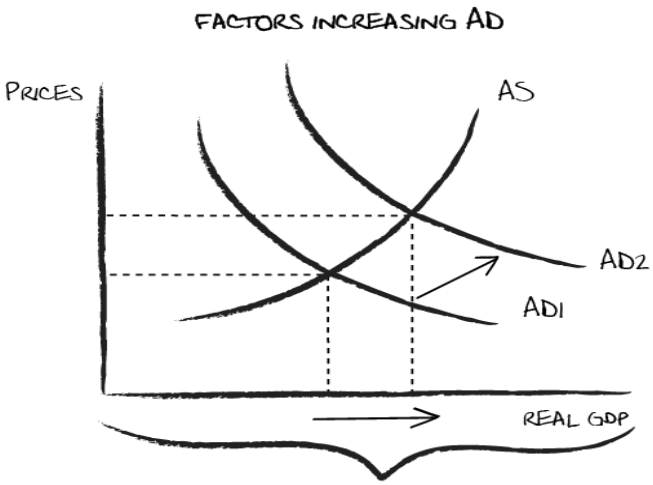
- ***Wealth effect:*** lower aggregate prices means wealth in the form of fixed assets rise in real terms causing consumption to rise (i.e. inflation is not eating into the value of assets).
- ***Purchasing power effect:*** lower aggregate prices causes an increase in the purchasing power of income, again causing consumption to rise (this is like the income effect in relation to price changes for specific goods).
- ***The interest and exchange rate effects:*** lower inflation reduces interest rates, which encourages capital outflow and a lower exchange rate, which then increases net exports (X-M).
- ***External effect:*** lower aggregate prices improves Australia's international competitiveness, lifting net exports.

This should make sense given that a lower price level (or a lower inflation rates relative to overseas or relative to income) is likely to result in higher consumption, investment and export growth, as well as reduced demand for imports. Accordingly, our AD can be plotted on a diagram, as shown in the diagram above.

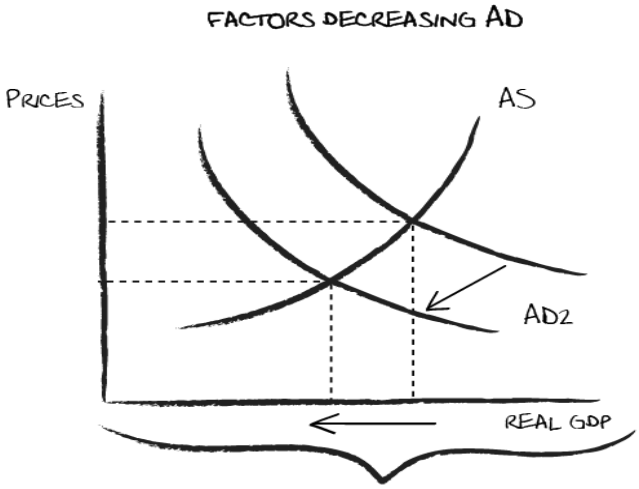
Exam Tip: The new Study Design (2023) no longer requires students to demonstrate knowledge of an AD and AS diagram. However, being able to illustrate how a change in AD and AS factors will impact the AD/ AS diagram is a highly valuable skill in Unit 3 & 4. When analysing the diagram, the y-axis allows students to predict the impact of a change in either an AD or AS factor on the general level of prices (inflation). The x-axis shows the predicted impact on real GDP growth and therefore the derived demand for labour and the level of employment. This will help students to answer many different questions relating to Australia's three macroeconomic goals throughout Unit 3 & 4.

Factors that may influence the level of AD

Any factor that influences any one of the AD components (C, I, G, X & M) is regarded as an AD factor, which in turn results in an increase or decrease in AD. This causes the AD curve to shift to the right (i.e. an increase in AD) or to the left (i.e. a decrease in AD) which results in a change in the level of economic growth (or real GDP), employment levels and prices (or inflation) as described below:



Higher disposable incomes
Lower interest rates
Stronger consumer and business confidence
Lower exchange rate
Stronger growth overseas



Lower disposable incomes
higher interest rates
Weaker consumer and business confidence
Higher exchange rate
Weaker growth overseas

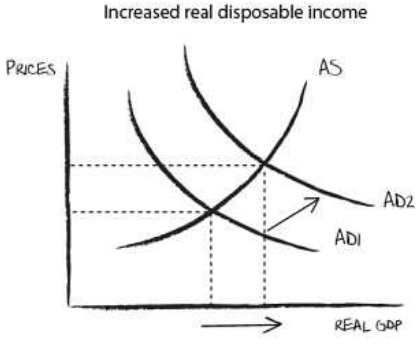
Exam Tip: The new Study Design (2023) requires students to demonstrate an understanding of six AD factors which are listed below. While the terms of trade (TOT) is not listed as a factor, it is a concept covered in the next area of study, where students are required to demonstrate an understanding of how a change in the TOT impacts on the achievement of the government's domestic macroeconomic goals and living standards. The impact on the goals will necessarily be related to the impact on AD and students are therefore still expected (albeit indirectly) to demonstrate how changes in the TOT might influence AD. This will be covered in the next area of study.

Exam Tip: Question 1(b) of the 2021 exam required students to refer to one AD and one AS factor and explain why the unemployment rate at the end of 2021 was different to the RBA forecast of 6% from earlier in the year. First, those students who were not aware that the most recent unemployment rate was lower than 6% could not achieve full marks, which highlights the importance of having some awareness of major macroeconomic statistics leading into the exam. Second, many students did not refer to a specific AD or AS factor (e.g. confidence levels, disposable income, productivity, etc.), which made it very difficult to score highly for this question. It is important to remember that when asked to refer to an AD/AS factor to support an explanation, that students are prepared to identify a factor (preferably one listed in the Study design) and explain its relevance in the context of the question.

Exam Tip: Question 1c of the 2022 exam required students to, 'explain how one AD factor and one AS factor have influenced the inflation rate over the past 12 months'. Similar to the 2021 question referred to above, this question highlighted the importance of understanding the six AD factors, the eight AS factors and knowledge of contemporary macroeconomic factors. Students should avoid reference to micro factors that influence the prices of specific goods (e.g. changes in the price of complements and substitutes). In addition, it was insufficient to simply highlight a factor without explaining 'how' it influenced AD/AS and inflation 'over the past 12 months'. The use of an AD/AS diagram would assist students to analyse the impact of a factor on inflation and avoid silly mistakes like saying that growth in business confidence was an 'AS factor' causing inflation to increase.

Exam Tip: In Q2b of the 2019 exam, students were asked to explain how one AD factor may cause a business cycle contraction. Many students were unable to identify a relevant 'AD' factor, with some choosing either a component of AD as a factor (e.g. a decline in 'Investment' or 'Consumption') or even a policy initiative/action/stance as the relevant factor (e.g. a contractionary budgetary/monetary policy stance). Students need to accept that when a question asks for a discussion or explanation of an AD factor, they need to focus on AD factors such as interest rates, disposable income, exchange rates, weak/strong overseas growth, etc. and link these to a change in the components of AD.

When (real) ***disposable income*** increases it means that after tax income has increased in real terms (i.e. adjusting for the effects of inflation) providing the household sector with increased spending power. This is likely to result in an increase in Consumption expenditure, a rise in AD and a corresponding boost to production (or economic growth), and prices (inflation) characterised by real GDP increasing from GDP1 to GDP2 and prices rising from P1 to P2. The higher rate of economic growth should also lead to an increase in the demand for labour and employment.

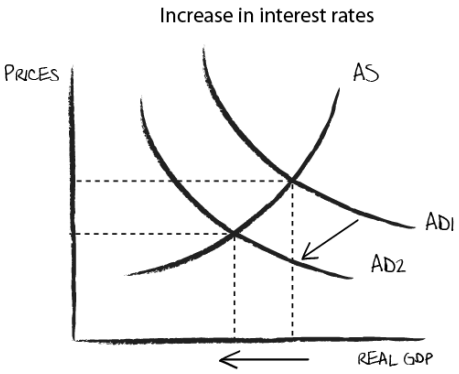


Exam Tip: Disposable income is technically not defined as Income less interest rates, or Income less inflation. It is therefore incorrect to say (as many do in examinations) that a rise in interest rates or inflation will cause a fall in disposable income. This remains true despite the fact that the RBA loosely refers to disposable income when discussing the cash flow transmission mechanism (more on this in Unit 4). Disposable income in (micro) economics is accurately defined as Gross Income less income taxes. Income after inflation is referred to as 'real income' and income after the interest rate effect is commonly referred to as 'discretionary income.' In prior examinations, students typically confuse the three concepts.

When ***interest rates*** increase, it is likely to dampen economic activity (e.g. from GDP1 to GDP 2) for a number of reasons [all of which will be explored when examining the 'transmission mechanism' of monetary policy in Unit 4]. We will focus on how rising interest rates reduce AD (i.e. focus on the AD side). The two main reasons are:

1) The household and business sectors are likely to reduce demand for goods and services because the cost of borrowing is higher. Households are less likely to use credit cards for purchases and less likely to take out loans for the purchase of consumer durables (e.g. boat, ipod, plasma TV, etc.). Similarly, businesses are less likely to invest (e.g. purchase new machinery or build an additional plant) as the higher cost of borrowing makes it more difficult for any spending proposal to achieve the 'hurdle rate of return' that is necessary for the proposal to go ahead. (This is because the rate of return on any 'project' is reduced by the higher borrowing costs.)

2) The higher costs to finance existing loans for households and businesses (e.g. mortgages for the average household) causes them to suffer a drop in 'cash flow', which further reduces both Consumption and Investment.



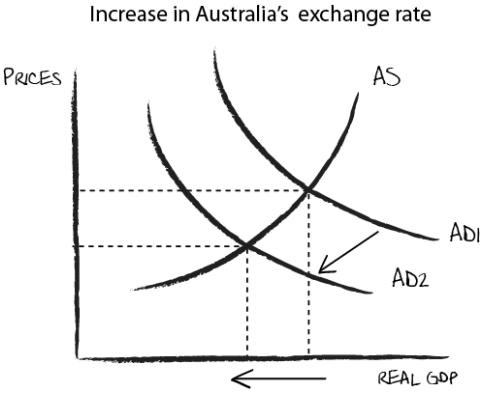
As both Consumption and Investment decreases, AD necessarily falls and there is a corresponding negative impact on prices (i.e. lower prices or inflation) and economic growth. The lower rate of economic growth should lead to a decrease in the demand for labour and employment.

Exam Tip: In reality, a change in interest rates can also have an impact on the AS curve, with higher interest rates capable of pushing the AS curve to the left as businesses experience a rise in the costs of production (in this case, interest expense as a cost of production). However, over time, this supply side effect is always outweighed by the demand side effect such that higher interest rates will reduce prices (or inflation).

Exam Tip: There are four generally accepted 'transmission channels' by which a change in interest rates affect AD. Only two have been examined above and students should be prepared to refer to two for the examination. All four channels will be explored in Part 2 of the Study Guide (monetary policy).

Exam Tip: Students should avoid making the mistake of focusing solely on the interest rate impact on consumer and business confidence. Higher interest rates do impact negatively on confidence, but this is not the key reason why higher interest rates dampen economic activity. This will be considered again in Part 2 of the Study Guide.

The ***exchange rate*** is the value of the Australian dollar against another currency (e.g. compared to the $US) or a basket of currencies of our major trading partners (Trade Weighted Index). If the value of the Aussie dollar increases, the demand side effects on economic activity are negative. There are three main reasons for this:



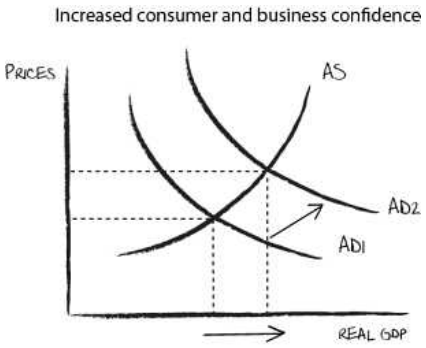
- First, those exporters in Australia that are 'price takers' (or simply rely on the world $US price of their good when selling on world markets) will receive less income for any given volume of exports. This is because each $US they receive for their product is now worth less than before. For example, assume a farmer in 2023 produces a crop of 500 tonnes of wheat with the world price sitting at $US300 per ton. Their income would be $US150, 000. If the Aussie dollar was worth $US0.50, then the $US150,000 would be converted into $A300,000, which becomes the farmer's income. Now assume, that in 2024 the farmer produces an identical crop (500 tonnes), but the value of the Aussie dollar doubles (A$1.00 = US$1.00). The farmer will now receive half the income they received in 2023 because when they convert $US150,000 into Aussie dollars, they now only receive A$150,000. This drop in export income causes AD and economic activity to fall, even though the **volume** of exports has remained unchanged.

- Second, those exporters that are not price takers (e.g. producers of niche products, the tourism industry, etc.) will find that the price competitiveness of their good or service in international markets (i.e. international competitiveness) will decrease when the value of the $A rises. For example, if the $A rose dramatically against all currencies, then New Zealand would become a much more attractive tourism destination for foreigners because they will receive more $NZ than $A for any given exchange of foreign currency, causing a drop in tourism exports for Australia. Once again, exports decrease, AD falls and economic activity is negatively affected.

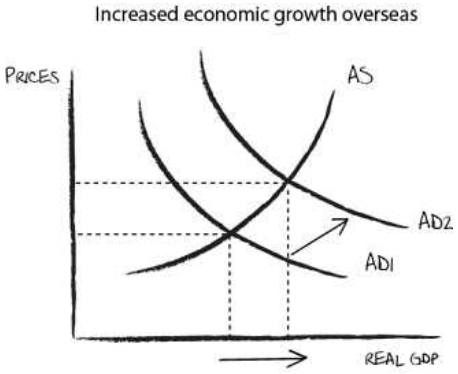
- Third, import competing businesses in Australia will now face stronger price competition from importers who are able to use the stronger Australian dollar to import products at lower cost, thereby reducing the price of imports. This causes some consumers to substitute away from locally made goods towards imported goods, causing AD and economic activity to fall once more.

Overall, a higher exchange rate will reduce inflation and economic growth and negatively impact on employment in the economy.

Consumer confidence refers to a consumers' perception of their economic well-being in the future. Consumer confidence is negatively affected by economic conditions such as inflation, unemployment, or share/property price movements; geopolitical events (such as the rise in terrorism); climatic/geographical factors (such as global warming or natural disasters); or political events (such as a change in government or a new leader). When confidence is high, it contributes to upward pressure on Consumption expenditure, higher AD and increased economic growth. Similarly, ***business confidence*** refers to business perception of their future levels of sales and profitability. It is affected by the same types of factors influencing consumer confidence and when it is high it contributes to growth in investment, AD and economic growth.



An increase in ***economic growth overseas*** (i.e. an increase in the growth rates experienced by our trading partners, e.g. Japan, China, USA) is likely to increase the demand for Australian exports of consumer items, capital items or raw materials needed to fuel the growth in their economies. This was the case over recent years, with the rapid growth of the Chinese and Indian economies resulting in a large increase in commodity exports (e.g. iron ore, natural gas, and coal). This increases the demand for X, lifts AD and economic activity. To the extent that higher growth rates overseas causes inflationary pressures in those economies, the higher price level may (in some instances) result in Australians demanding a smaller volume of imports and instead purchasing the relatively cheaper domestic alternatives. This further lifts AD and economic growth in Australia.

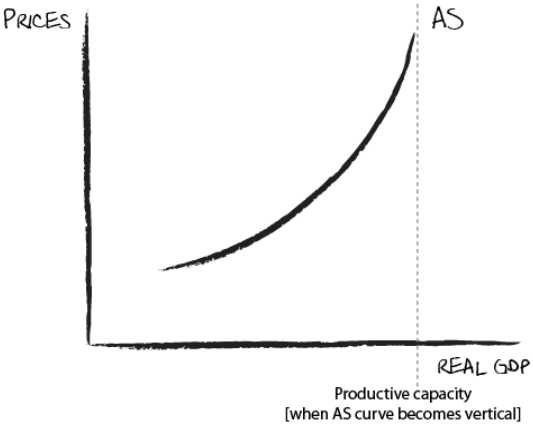


Overall, increases in both confidence levels and overseas rates of growth will have favourable impacts on economic growth and employment, but negatively impact on prices or inflation.

The meaning and importance of aggregate supply and the factors that may affect the level of aggregate supply in the economy

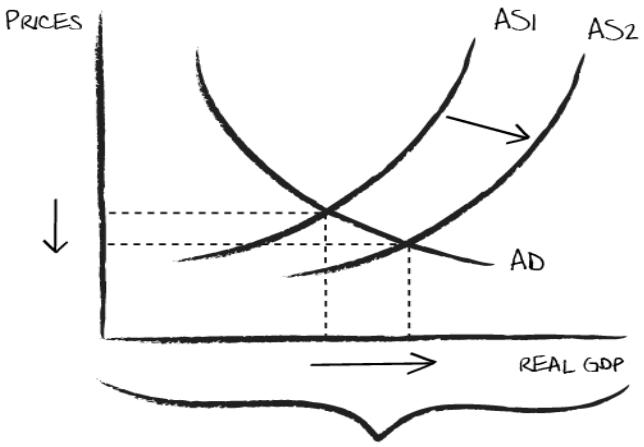
Aggregate supply (AS) is the total volume (real value) of goods and services that Australian businesses produce over a given period. The level of aggregate supply depends on many different factors including the ones listed below.

The AS curve represents the total real value of production that businesses are willing and able to supply at various general price levels. The relationship between the general price level and real GDP is positive (similar to the microeconomic supply curve) and it also becomes steeper with increasing levels of output. As output increases (an expansion along the curve) and the economy approaches productive capacity it becomes increasingly difficult to expand production. If the economy reaches productive capacity the AS curve would be vertical because any increase in AD could not be met and the resulting shortages in multiple markets would cause prices to rise across the economy. An example of an AS curve is shown in the adjacent diagram.



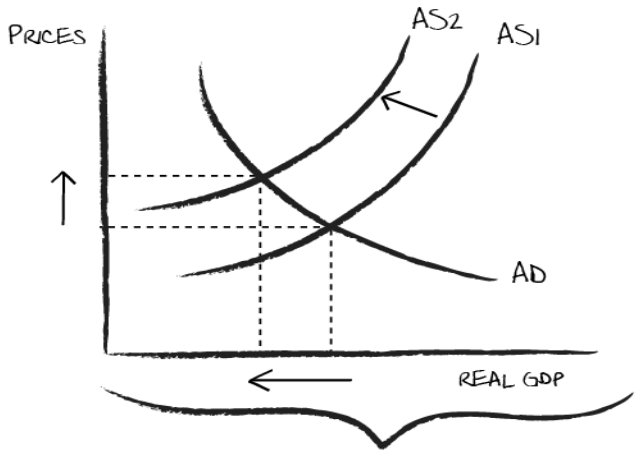
There are several factors that influence AS in the economy. These factors are similar to the factors that influence individual supply curves. In essence, any factor that causes a change in the 'costs of production' or 'supply potential' for the business sector is an AS factor affecting the AS curve and economic activity.

SUPPLY FACTORS INCREASING ECONOMIC GROWTH



Increased rate of technological change
Better quality factors of production
Higher productivity growth
More factors of production
Higher exchange rates
Improved climatic conditions
Lower costs of production

SUPPLY FACTORS DECREASING ECONOMIC GROWTH



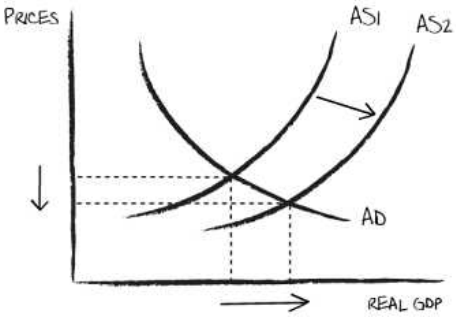
Decreased rate of technological change
Lower quality factors of production
Lower productivity growth
Fewer factors of production
Lower exchange rates
Deteriorating climatic conditions
Higher costs of production

Exam Tip: Students should recognise that some of the AS factors listed in the Study Design are closely connected. Broadly, students should remember that all AS factors relate back to the costs of production and/or the quality and/or quantity of the factors of production. For example, technological change will influence productivity and the quality of capital. Productivity will also reduce the cost per unit for suppliers and therefore decrease their costs of production. An increase in the participation rate will increase the quantity of labour resources and in theory should improve labour productivity. Students who can make these types of connections in the examination are likely to be rewarded.

Exam Tip: Don't be confused by the role of AD in the discussion of supply factors (and vice versa). All macroeconomic activity takes place through the interaction of aggregate demand and aggregate supply. Whilst we are focusing on the supply side impact, there will be a change in the level of AD (demonstrated by a movement along the AD curve) via the impact on the aggregate price level. The change in the level of AD that invariably takes place does not mean that it is a 'demand' factor or that it can't be a 'supply' factor. You need to ask yourself: What has initiated the change in economic activity? Where did it all start? If it started on the supply side, it is a supply factor, even though AD is affected!!

Advances in technology (such as improved internet speeds, smarter robotics or faster and more efficient machinery more generally) will result in an increase in the quality of both physical capital (e.g. machinery) and human capital (i.e. labour). This ultimately increases the efficiency of our factors of production, which means that we will experience an increase in the nation's output relative to inputs (i.e. increased productivity). The quality of our factors of production might also result from other factors, such as better management or improvements in the quality of education and training. Overall, this should be reflected by an increase in multifactor productivity, which is defined as the ratio of output to a combination of inputs, typically labour and capital. This rise in *productivity* means that any volume of output is able to be produced with few resources and therefore reduces the average costs of production. This improves supply conditions for businesses, making them more willing to increase supply at every given price level or alternatively reduce prices at any given output level. This will be reflected in the nation's AS curve shifting to the right, with a lower general price level causing an expansion in AD and hence and higher output (or real GDP).

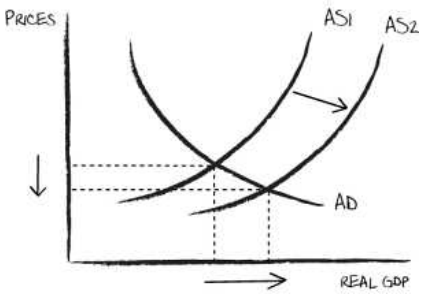
Improvements in technological change, quality of factors of production and productivity



Exam Tip: It remains common in exams, including the 2020, 2021 and 2022 exams, for students to confuse production with productivity, particularly when they are asked to explain the difference between the two terms. To achieve full marks for this type of question, students need to make reference to the fact that production relates to the level of output in the economy, whereas productivity relates to how efficiently this output is produced, measured in terms of output divided by inputs (e.g. labour and capital).

Exam Tip: Do not define productivity as output over hours worked. This is only one measure of productivity (labour productivity). It should always be defined as output over inputs (or output per unit of input), where labour productivity is a measure of the productivity of labour resources!

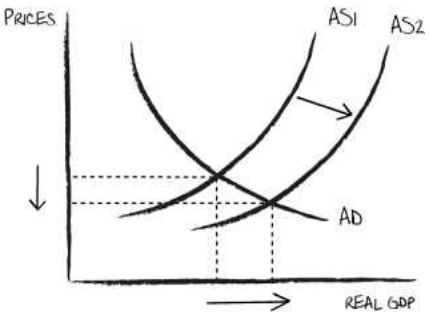
Lower exchange rate



We saw that a rise in the ***exchange rates*** has negative demand side impacts. However, it can have beneficial supply side effects because a stronger value of the $A makes it cheaper to purchase a given volume of imports. To the extent that a large share of Australian imports are capital or intermediate goods, this effectively reduces the costs of production, allowing firms to reduce prices directly or increase output. The lower price pressures that inevitably follows will tend to facilitate growth in AD and EG. (Notice the movement along the AD curve.)

Exam Tip: Taken together, students should be aware that both the AD and AS effects stemming from a higher exchange rate will reinforce one another in terms of the impact on prices (or inflation). However, the demand side effect will outweigh the supply side effect such that a higher exchange rate will negatively impact on both economic growth and employment (and a lower exchange rate impacts positively on growth and employment).

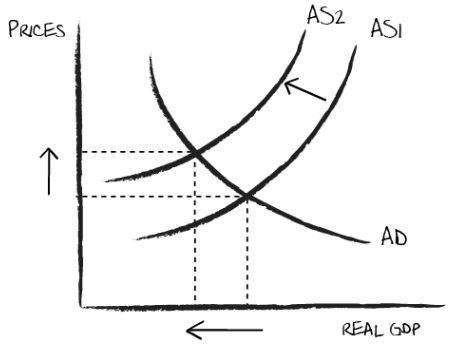
Increased quantity of factors of production



In relation to changes in the **quantity of factors of production**, this is distinct from the quality of factors of production. For example, more productive workers means that the quality of the factors of production has improved, while an increase in the number of workers (e.g. because of immigration) means that the quantity of factors of production has increased. Increasing the size of the labour force, making more capital or finding more natural resources (e.g. discovering new mineral deposits) are all ways that we could increase the size or quantity of our factors of production. This will make it easier for businesses to access factors of production, which in turn boosts productivity and/or reduces the average costs of production, and results in the AS curve shifting to the right once more.

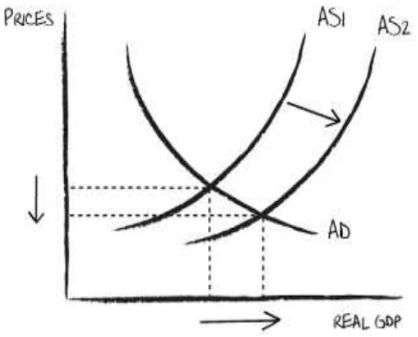
Climatic events as supply factors refer to those events like droughts, floods, bushfires or cyclones that have an impact on the supply and cost of raw materials, such as wheat and oil (e.g. the drought over recent years has significantly reduced wheat yields). When there are unfavourable climatic events in Australia, it results in an increase in the costs of production for those businesses relying on agricultural inputs as well as mining and other businesses whose operations have been disrupted by the natural disasters. This then results in the AS curve shifting to the left, an increase in aggregate prices and negative pressure on economic activity.

Increased incidence of natural disasters



In relation to ***costs of production***, you will notice that in the discussion of the effect of each AS factors above, there will typically be an impact on the average costs of production for businesses. For example, productivity growth leads to more output from a given level of inputs (e.g. labour hours) which will typically result in input costs (e.g. labour costs) being spread over a larger output level. This will result in lower costs per unit of output (or average costs) for businesses.

Lower costs of production (e.g. lower labour costs)



In the context of the current Study Design, the specific listing of **'costs of production'** as a supply factor can also be thought of in terms of the specific costs of production, such as the cost of raw materials or the cost of labour. Labour costs include the actual wages or salaries paid to employees as well as any other costs associated with their employment (e.g. superannuation, workcover costs, payroll tax, etc). If there is a decrease in 'real' labour costs in the economy then this means that the average costs of production fall (more favourable supply conditions), shifting the AS curve to the right and exerting downward pressure on aggregate prices and upward pressure on both economic growth and employment. Similar effects will also be experienced in relation to a fall in other costs of production, such as decreases in the costs of capital or raw materials (e.g. energy and/or intermediate goods).

Exam Tip: With AS factors in general, it is typical for students to argue that reduced production costs causes suppliers to increase their 'willingness to supply' and therefore boost economic growth. While this is broadly accurate, it makes no mention of the role of 'prices' and therefore AD in causing economic activity to change. Despite AD being affected, it is still a 'supply factor'. This is how supply side policies actually work to stimulate economic activity – an increase in AD is important.

Exam Tip: Q3b of 2016 asked students to explain how a change in both personal and company tax might influence AS and economic growth. It was typical for many students to argue from the demand side, explaining how lower tax rates can stimulate AD, increasing AS and then EG. While an increase in AS does indeed occur when AD rises, the question really requires students to focus on a 'supply side explanation'. It was therefore important to show how both factors contributed to an increased willingness to supply (e.g. because of higher productivity in the case of lower income taxes or lower costs of production in the case of lower company taxes) which in turn contributed to relatively lower prices, an expansion of AD and an increased rate of economic growth.

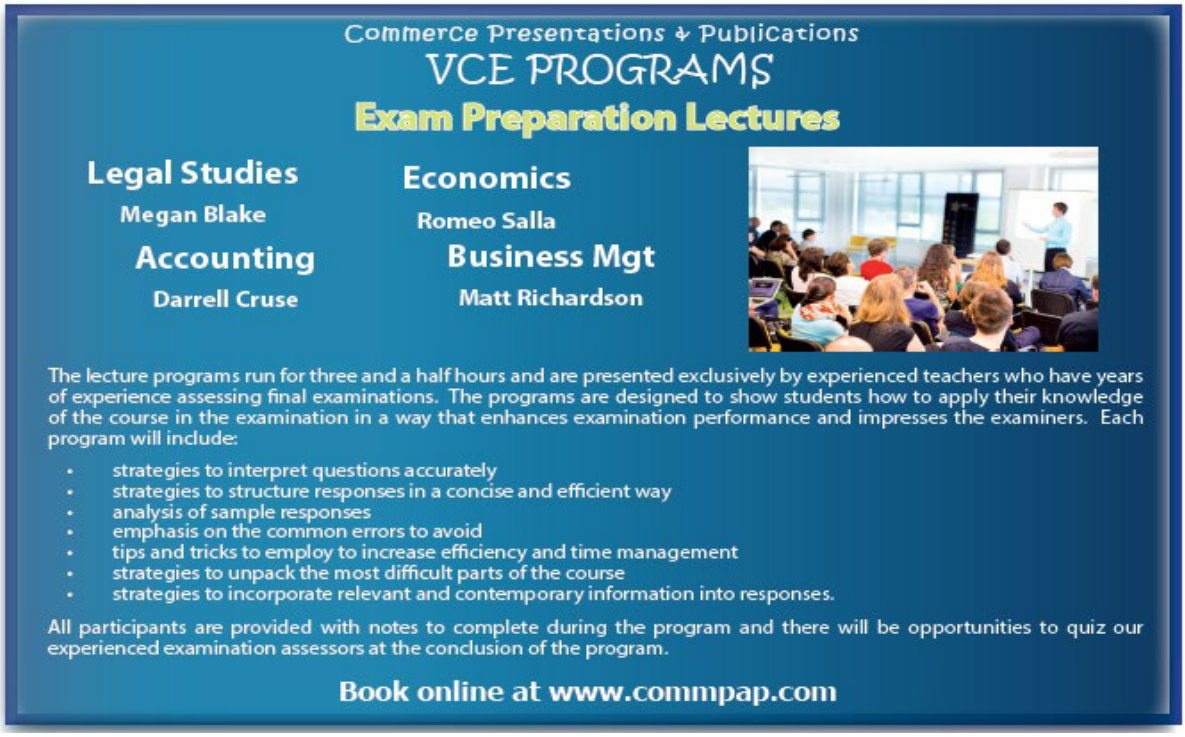
Exam Tip: In the new Study Design (2023) VCAA introduced a new aggregate supply factor, 'other events including government regulations and disruptions to international supply chains'. This factor (or more) can be understood by looking at the COVID-19 pandemic, which is discussed below.

The COVID-19 Pandemic and its relation to aggregate supply

The coronavirus resulted in a major supply side shock to the Australian and global economy over the course of 2020-21. The virus was first detected in a major manufacturing hub in China (Wuhan province) where many of the world's intermediate goods (goods that are used in the productions of other goods) are manufactured, causing supply constraints and **disruptions to international supply chains** around the globe. Throughout 2022, when many countries around the world had long come out of their COVID-19 lockdowns, China's vaccine deficiency forced the Chinese government to continue lockdowns and strict quarantining rules, further disrupting international supply chains. Some high-profile examples include Foxconn technology group, who manufactures the iPhone for Apple and Taiwan Semiconductor, the world's largest chip manufacturer. Both of these businesses had to completely freeze operations and impose harsh quarantine rules over 2022, causing negative flow on effects around the world.

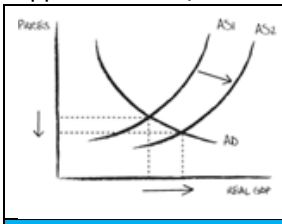
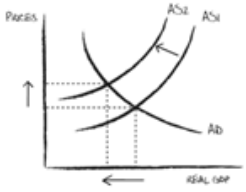
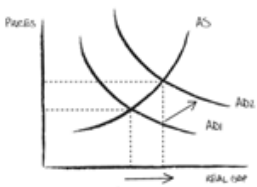
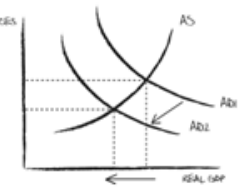
The COVID-19 pandemic also highlighted how **government regulations** can influence aggregate supply. Over 2020-2021 many countries around the world forced businesses to close and workers to work from home. Both of these regulations negatively impacted on productivity and impaired the ability of firms to produce goods and services. To the extent that new waves of COVID-19 influence the health of populations into the 2023-24, the virus itself (and government responses) will continue to have negative implications for productivity, efficiency and aggregate supply.

There are many other government regulations which would impact the level of AS. For example, the government may impose a minimum wage (or a host of other regulations), increasing costs of production for firms, or they may change the amount of skilled immigration visas. [These factors are discussed in further detail in Part 2 of the Study Guide - Unit 4 Outcome 2 Aggregate supply policies.]



QUICK QUIZ 4: AGGREGATE DEMAND AND AGGREGATE SUPPLY

For each of the following situations (1- 16), choose one of the responses (A - D) that ***most*** accurately reflects what is likely to happen in the AD/AS curve/graph and then draw an up or down arrow to identify the impact on real GDP, inflation & employment..

			
A	**B**	**C**	**D**
1	**2**	**3**	**4**
There is an increase in consumer confidence Graph: GDP: Inflation: Employment:	**The household savings ratio increases** Graph: GDP: Inflation: Employment:	**The Chinese government removes its strict COVID controls** Graph: GDP: Inflation: Employment:	**Labour market productivity increases** Graph: GDP: Inflation: Employment:
5	**6**	**7**	**8**
The RBA raises the cash rate target further Graph: GDP: Inflation: Employment:	**The government introduces further income tax cuts** Graph: GDP: Inflation: Employment:	**There is peace between Ukraine and Russia** Graph: GDP: Inflation: Employment:	**There is an increase in the corporate tax rate in Australia** Graph: GDP: Inflation: Employment:
9	**10**	**11**	**12**
Business confidence decreases Graph: GDP: Inflation: Employment:	**An increase in the price of diesel used in the transport industry** Graph: GDP: Inflation: Employment:	**There is a global recession** Graph: GDP: Inflation: Employment:	**The value of the AUD depreciates** Graph: GDP: Inflation: Employment:
13	**14**	**15**	**16**
Climate change worsen extreme weather events Graph: GDP: Inflation: Employment:	**The Australian government increases the number of skilled migration visas** Graph: GDP: Inflation: Employment:	**The Australian government puts a price ceiling on wholesale energy markets (below equilibrium)** Graph: GDP: Inflation: Employment:	**Research and development drive improvements in technology** Graph: GDP: Inflation: Employment:

Answers on page 151

REVIEW/APPLICATION QUESTIONS 5 – The nature and purpose of economic activity

1) Define (macro)economic activity.
2) Define aggregate demand, listing all of its components and providing an example of expenditure for each AD component.
3) Explain the 4 stages of the business cycle and outline the likely current stage of the Australian businesses cycle
4) Describe the relationship that exists between GDP and AD and explain why exports are added and imports deducted from AD.
5) Draw a five sector circular flow model of income and describe the flows between the sectors.
6) Distinguish material from non-material living standards and outline six separate factors that influence living standards.
7) Define the 'economic/business cycle' and describe how and why an economy moves through a business cycle over time.
8) Draw an AD/AS diagram for the following scenarios and illustrate the impact on growth, employment and inflation:
(I) An decrease in consumer confidence
(ii) An appreciation of the AUD (think AD or AS)
(iii) A decrease in real disposable incomes
(iv) The RBA cuts interest rates
(v) Floods on the east coast of Australia disrupt farming industries
(vi) Labour market productivity increases
(vii) The Australian government invests into new research and development Describe five separate factors that will stimulate AD and explain the impact on economic growth, employment and prices.
9) Describe five separate factors that will stimulate AS and explain the impact on economic growth, employment and the prices.

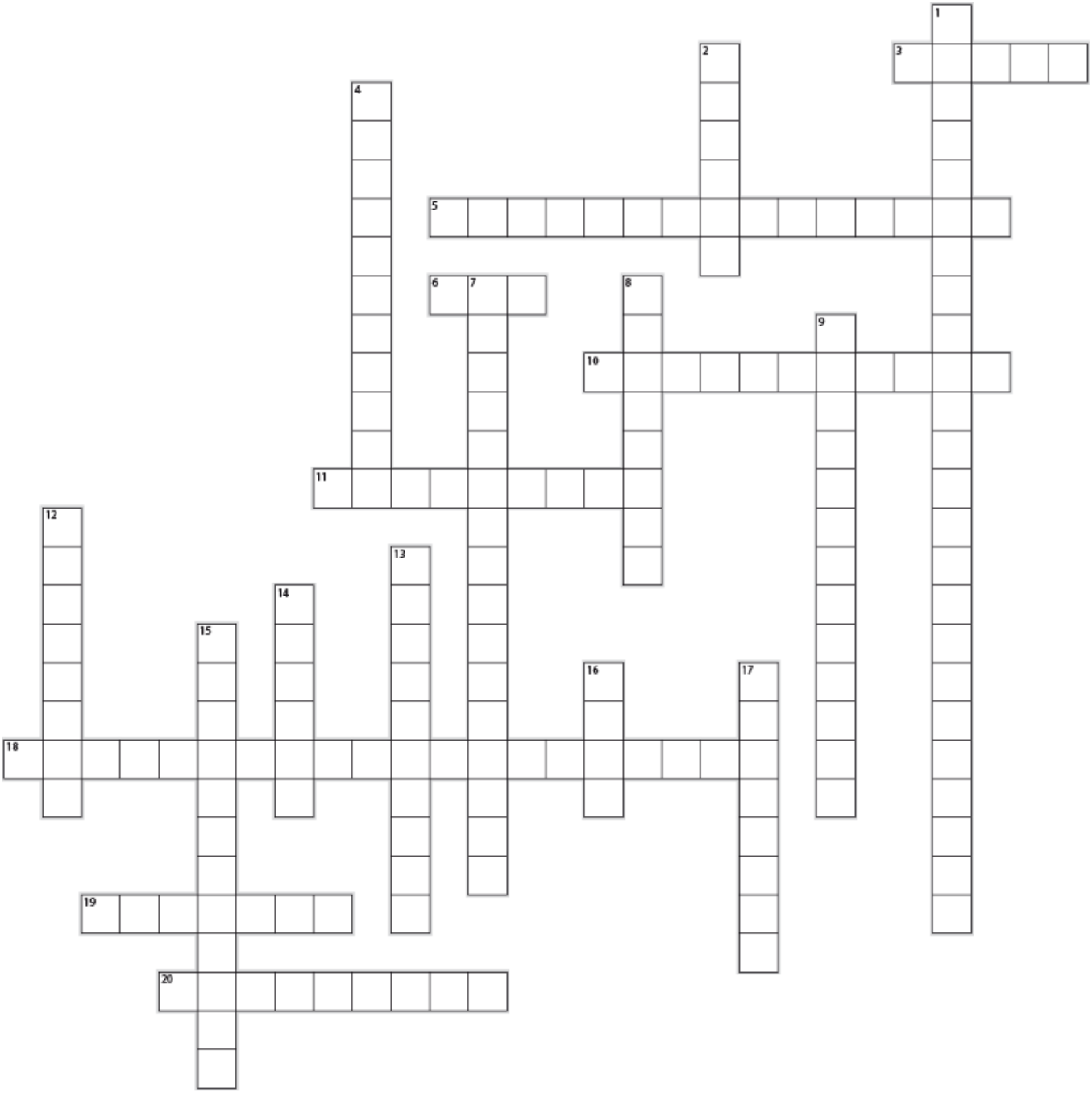
Quick revision crossword No 5: The nature and purpose of economic activity

Across

3. An increase in this will tend to reduce living standards as well as divert valuable resources trying to reduce or eliminate it altogether
5. Expenditure on Australian production (2 words)
6. A key statistic providing information about the level and movement in economic activity over time (acronym)
10. Periods of low production growth, high inflation and high unemployment
11. Sometimes the trough in the business cycle and technically referred to as two consecutive quarters of economic growth
18. The final market value of all goods and services produced in the Australian economy over a given period of time (3 words)
19. These leak from economic activity before reappearing in the form of investment
20. That sector of the economy in the circular flow model the is effectively the intermediary between borrowers and lenders

Down

1. The total expenditure by Australians on goods and services (3 words)
2. This effect, when prices fall, is one of the explanations behind the a downward sloping AD curve
4. This measure of GDP seeks to remove the effects of inflation so that any increase in GDP is 'real' in the sense that it represents an increase in the volume (or 'real value') of production (2 words)
7. Income after paying income tax (2 words)
8. That sector within the circular flow model that includes exports and imports
9. This type of activity refers to the expenditure, production, employment and income that takes place in an economy when goods and services are produced and sold
12. Increased wage pressures; higher interest rates; rising inflation and overvalued asset prices are factors in a Boom that actually cause this
13. spending by businesses on capital items
14. This is created by production and leads to expenditure
15. Output per unit of input
16. Often the peak of the business cycle
17. Movements in real GDP can only provide an indication of changes in these living standards



The meaning of strong and sustainable economic growth

Economic growth in general terms refers to an increase in the real level of production over time. Alternatively, it refers to an increase in real GDP, where GDP is the total market value of all final goods and services produced in a given time period (usually one year). Positive economic growth will usually create employment and improve living standards via an increase in consumption of goods and services.

The government does not set a specific 'target' rate of economic growth. However, it does outline broader growth objectives. In particular, budget documents have revealed that the government aims to "promote an economic climate conducive to high levels of sustainable economic and employment growth….." The key terms in the goal are '**strong'** and '**sustainable'**. This means that the growth rate must be strong enough to create ongoing employment and incomes for Australians such that our material standards of living increase over time. However, it cannot be so high that it causes problems for inflation and Australia's balance of payments (external stability). Nor must it be so high that it leads to environmental damage (e.g. depletion of non-renewable resources) which threatens our ability to maintain strong rates of economic growth into the future.

The goal strong and sustainable growth rate is to achieve the highest rate of growth in real GDP which is consistent with employment growth, but without running into excessive inflationary, external or environmental pressures. A strong and sustainable growth rate is generally considered to be within the range of 3 – 3.5% per annum.

Exam Tip: In examinations, it is common for students to be asked to describe or explain how a particular variable or policy initiative impacts on the goal of strong and sustainable economic growth. For example, in the 2020 and 2021 examinations, question 2c in both exams required students to link aspects of budgetary policy to the goal of strong and sustainable economic growth. It is common for students to simply link the initiative to economic growth without making any attempt to examine the implications for the sustainable aspect of the goal. In particular, if the policy initiative in question or economic variable emanates from the supply side, the best performing responses will be those that successfully describe/explain how economic growth can be more sustainable given that it will be low-inflationary economic growth.

Consequences of not achieving the goal of strong and sustainable economic growth

Strong and sustainable growth is pursued primarily because it boosts material **living standards** as measured by real GDP per person. While the achievement of the goal can also help to increase non-material living standards (such as the boost to self-esteem from earning an income), it is the direct link to employment (or reducing unemployment), income and expenditure that makes strong rates of growth a worthy pursuit. In essence, stronger growth increases access to the goods and services that improves our material wealth and lifts living standards. In addition, strong rates of economic growth over time will also increase tax revenue for governments and (particularly if it incomes per capita have risen) should help to improve the ability of governments to provide more or better quality government services (such as schools, hospitals, emergency services, defence, roads, railways, telecommunications, and national security). However, there is a trade-off.

Economic growth that is too high

If the rate of growth in real GDP is **'excessive'**, then three categories of problems can emerge:

Environmental degradation

For centuries economic growth and the economy have been synonymous. Economic growth is responsible for lifting billions of people out of poverty and for the quality of life we all have today. However, there is an undeniable trade-off between economic growth and the quality of our natural environment one which is well understood but often not acted upon. Anytime production takes place there is some impact on our natural environment.

For example, Australia has an abundance of natural resources including, coal, iron ore and natural gas all of which are highly valuable to the world economy and have been big drivers of Australia's record economic growth. However, the exploration, mining and processing of these and many other resources have long lasting environmental impacts, including disruptions to native ecosystems, destruction of culturally significant places, deforestation and contamination of water systems.

Australia is also the world's largest exporter of coal and iron ore. Both commodities have fueled economic development around the world (particularly China) and created trillions of dollars in income for Australia. However, coal powered electricity releases large quantities of carbon dioxide into the environment and is a leading contributor to climate change. According to the CSIRO,

carbon dioxide concentration levels are at their highest rates in over 200 million years. Climate change and extreme weather events affect both material and non-material living standards in our economy. Extreme weather conditions (droughts, rain or cyclones) can disrupt Australia's agricultural and farming industries, reducing production and creating shortages in certain product and resource markets.

Changing weather patterns and the depletion of natural resources reduce inter-temporal efficiency and restrict AS in the longer term. Reducing our ability to produce in the future and reducing our material living standards. The future of the economy relies on continued access to natural resources, stable weather patterns, productive soils, food security and a stable energy supply. In simple terms, 'if we don't have a planet how can we have an economy'?

High Inflation

You will recall that strong economic growth in an economy which is caused by an increase in expenditure (AD) can push an economy too close to its productive capacity. This is illustrated by a shift in the aggregate demand curve to the right. When this happens, shortages occur in both product markets (e.g. markets for consumer goods and services) and factor (or resource) markets (e.g. markets for labour, capital and natural resources), driving up prices and inflationary pressures in the economy.

Over 2021-22, due to the speed of the economic recovery post COVID-19, the Australian (and the world) economy pushed too close to productive capacity (AS could not keep up with AD). This led to increased demand for natural resources like oil, gas and coal used in the production of many goods and services. Over the period oil prices tripled and natural gas prices rose over 400%. Workers in industries that experienced severe shortages, like engineering, marketing and IT infrastructure saw wage increases of 10-20%. Finally, capital resources (e.g. machinery) and other intermediate goods (e.g. parts and components) were in high demand, evidenced by the higher cost of important inputs such semi-conductors, car parts and other technology. Overall, businesses must, in some part, pass these costs increases on to consumers in the form of higher prices (inflation) to protect their profit margins. [Inflation will be discussed in greater detail below.]

External pressures

Australia does not have a strong manufacturing industry like it does mining, this means we rely heavily on imported goods from overseas. Australian's main imports are refined petrol, technology (computers), cars and medication. Economic growth can put pressure on our economic relationships with the rest of the world because when the Australian economy grows too strongly, it increases our demand for imports from overseas. This can lead to an unsustainable rate of income leaving Australia, which can lead to a deficit on the current account and increase our foreign liabilities (i.e. Australia's indebtedness to the rest of the world). [External pressures will be considered in greater detail in AOS 3 of this Study Guide.]

Economic growth that is too low

If growth is **too low** it reduces the rate of growth in incomes earned across the economy, which negatively impacts on real GDP per capita and **material living standards**. This is likely to be compounded by a reduction in the demand for labour and an increase in **unemployment levels (**particularly if economic growth is lower than the rate of growth in both productivity and the size of the labour force). If growth is not strong enough (e.g. below target) then there is not enough demand for labour from businesses (the opposite of what is described above) to maintain sufficient employment growth and unemployment is likely to rise. In times of negative economic growth firms will typically lay off workers to reduced their costs, which is bad for both **material** and **non-material living standards**. [The goal of full employment is discussed in greater detail below.]

Exam Tip: In the 2023 exam students were asked to explain two consequences of not achieving the goal of strong and sustainable economic growth. Although there are many consequence of not achieving the goal, the best responses focused on the consequences outlined in the study design (external, inflationary and environmental pressures) if growth is too strong **or** high unemployment (if growth is too low).

Gross Domestic Product (GDP)

The Australian Bureau of Statistics collects statistics on economic activity on a daily basis. GDP is its key statistic providing information about the level and movement in economic activity over time. In particular, GDP was designed to determine the level and growth in the production of goods and services in Australia.

GDP is defined as the final market value of all goods and services produced in the Australian economy over a given period. Alternatively, it is the total 'value added' during each stage of the production process. GDP figures are released quarterly for the March, June, Sept and December quarters.

> **Exam Tip:** From 2023 onwards students are allowed a scientific calculator into SACs and the final economics exam. This should not increase the complexity of the calculations students must perform, rather it may allow VCAA to use more real and contemporary data in exam questions rather than hypothetical (as they have in the past). The Key Skill remains unchanged as 'calculate relevant economic indicators using real or hypothetical data.'

The Chain Volume Measure of GDP – real GDP

When GDP increases for a particular period it is referred to as an increase in 'Nominal GDP'. This means that the 'value' of production has increased. However, the value may have risen because of higher prices and/or increased volume of production. Given that the ABS is concerned about economic activity (i.e. movement in total volume of production) it devised ways to remove the 'price' effect so that any increase in GDP was 'real' in the sense that it represents an increase in the amount (or 'real value') of production. The chain volume measure of GDP is used by the ABS to provide an estimate of 'real GDP' in the economy. In simple terms, it involves using prices from the previous period and applying them to current period volumes. So any increase in the 'value' must have occurred because of rising activity or volumes. It is this that provides the most accurate measure of economic activity in our economy, which in turn provides an indication of how well the economy is performing in terms of income/wealth generation and improvements in (material) living standards. For example, an increase in GDP from $2 trillion to $2.2 trillion over a given year would represent zero growth in real GDP if inflation was 10%. If inflation was greater than 10%, then the value of *real GDP* would have fallen despite a reported increase in *nominal GDP*.

The latest economic growth rate recorded in Australia was 0.2% in real GDP for the September quarter 2023. The quarterly growth figure was calculated is the follow way:

$$\text{Quarterly growth} \quad \frac{GDP_{Sep\ 23} - GDP_{Jun\ 23}}{GDP_{Jun\ 23}} = \frac{607.5 - 606.2}{606.2} \times 100 = 0.2\%$$

This means that the total (real) value of production for the three months ending September of $607.5 billion was 0.2% higher than the $606.2 billion recorded for the previous three months. This equates to an **annualised rate** of economic growth of 0.8% (which is simply derived by multiplying the quarterly rate by four) which is well below the 3-3.5% target of strong and sustainable growth. The annualised rate is distinct from the **annual rate** of economic growth, which was recorded at 2.1% for the year to end September 2023. This annual growth figure was calculated in the following way:

$$\text{Annual growth (year on year)} \quad \frac{GDP_{Sep\ 23} - GDP_{Sep\ 22}}{GDP_{Sep\ 22}} = \frac{607.5 - 595.3}{595.5} \times 100 = 2\%$$

(Note these GDP figures are $ billions, and have been rounded down hence the different growth rate e.g.2% instead of 2.1%)

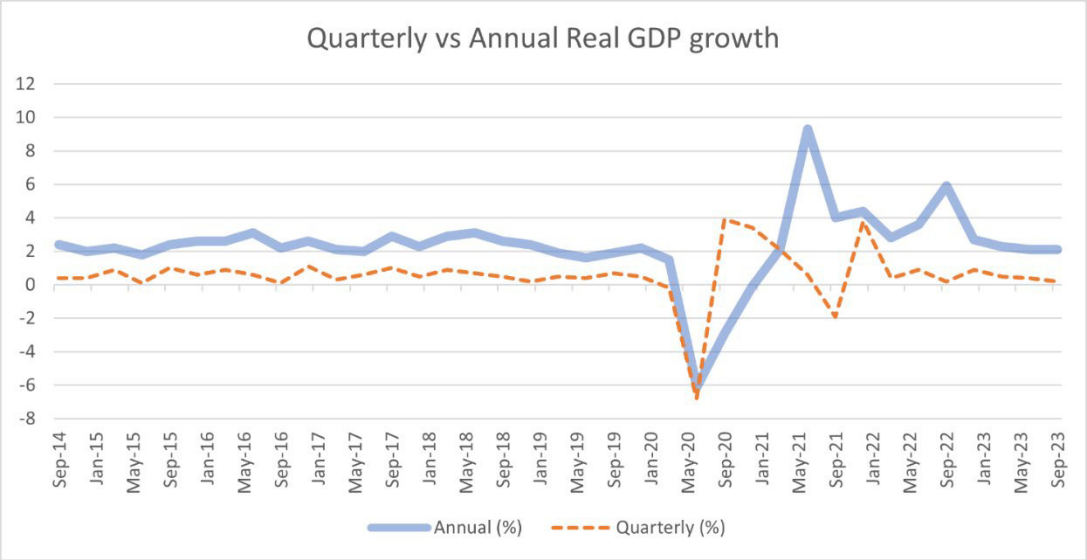
The total real value of Australia's production (i.e. real GDP) over the year to end 30 September 2023 is determined by adding the value of production for each of the four quarters in that year. This is calculated as follows:

$$\text{Total production (year to end Sep 2023)} = GDP_{Sep\ 23} + GDP_{June23} + GDP_{Mar\ 23} + GDP_{Dec\ 22}$$
$$= 607.5 + 606.2 + 603.5 + 600.3 = \$2{,}417.5b$$

This means that the size of Australia's economy was estimated to be **$2.417 trillion** for the year ending 30 September 2023.

Exam Tip: In reality there are a host of factors that make real GDP an unreliable indicator of the real level of economic activity or production that takes place in an economy. For example, some production goes unreported in the economy, such as black market activity (e.g. that part of the economy producing illegal goods and services such as illicit drugs and the "cash "market for household services). Importantly, students are no longer required to demonstrate an understanding of GDP's limitations as this was removed from the Study Design.

The quarterly and annual rates of economic growth in Australia over the past nine years are shown in the chart below.



The chart highlights that up until 2020 Australia's average annual rate of growth was reasonably strong by international standards, above 2% per annum for most of a period when many other economies struggled to recover from the fallout of the global financial crisis of 2008. Australia's rate of economic growth was buoyed by continuing strong global growth for Australian minerals, as well as continuing strong population growth. However, despite the strong growth by international standards, the average rate of growth from 2014 to 2020 was around 2.5% below our target of 3-3.5%.

However, the arrival of the COVID-19 pandemic in early 2020 created demand and supply shocks to all economies around the world, causing global recessions. The Australian economy experienced a huge 6% reduction in economic growth for the year to end June 2020, which was followed by a strong rebound in the September quarter. The steep rise in the quarterly rate of growth for September 2020 to 3.9%, as shown by the thinner dotted line in the chart above, reflects that the level of real GDP for the September quarter was compared to a very low level of real GDP recorded for the June quarter (i.e. it came off a very low base). In contrast, when determining the annual rate of growth, the level of real GDP remained negative because it is compared to the level of real GDP for the September quarter one year earlier – which was approximately $20B higher.

The economic recovery continued to gain pace over the second half of 2020 and into 2021, with a very high annual rate of 9.3% recorded for the year to end 30 June 2021, again reflecting the fact that growth was coming from a low base in June 2020. With respect to quarterly rates of growth, they remained positive over 2021, albeit progressively weaker, until the September quarter of 2021, which revealed another quarter of negative growth (1.9%) due to re-emergence of lockdowns in eastern states of Australia and the associated demand and supply shocks to the economy.

Over 2022, the economy continued to grow relatively strongly despite the fact that the RBA rapidly raised interest rates to dampen demand and reduce inflationary pressures. The annual growth rate for December 2022 was 2.7%, only slightly below target. This resilience in the Australian economy was due to the continued strength of the labour market (e.g. unemployment was at record lows) and the ongoing strength in commodity prices (terms of trade).

More recently, the economy has started to show real signs of weakness. The dual effect of rising interest rates and a loss of purchasing power due to persistent inflation weighed on households over 2023. In the most recent June and September quarters, growth in Consumption (C), the largest expenditure component of GDP, was 0.1% and 0% respectively. This data is particularly telling as population growth was positive over these periods indicating that per capita consumption decreased. As a result of the weakness in the household sector, GDP growth fell sharply to 0.2% in the September quarter 2023.

Exam Tip: For the purposes of the Study Design, students are not required to remember rates of economic growth going back as far as that shown in the chart above. Students are, however, required to demonstrate an understanding of the AD and AS factors that have influenced economic growth (inflation/the unemployment rate/living standards) in the past two years. These factors will be jointly addressed after we consider the goals of price stability and full employment.

Exam Tip: Students are not expected to recite or recall precise (macro)economic statistics. However, it is useful to have a general or broad understanding of the level or movement in key macroeconomic statistics (e.g. inflation, real GDP, unemployment, the CA balance, the budget outcome, the cash rate, etc.), particularly over the past year. While the ability to remember specific rates or values can 'add value' in the examination, it is less important than an ability to 'analyse economic relationships through the interpretation of data, graphical trends, patterns and other information'.

Exam Tip: Part of Q4 in the 2018 exam required students to assess the extent to which the Government has achieved strong and sustainable economic growth over the past two years. The question accompanied a chart showing the rate of economic growth since 2010. To answer the question effectively, students needed to isolate the movement in the actual rate of growth 'over the past two years' (i.e. ignore the data preceding the past two years) and then attempt to 'assess' whether this movement was favourable or unfavourable for the achievement of SSEG. Given that growth increased from approximately 2% to approximately 3%, the better responses were able to compare the improvement to the 'unofficial' goal of between 3.0% - 3.5% growth in real GDP.

The meaning of the goal of low and stable inflation (price stability)

One of the government's (RBA's) primary economic goals is price stability (i.e. low and stable inflation), where inflation represents a sustained (stable) increase in the general or average price level over time. The government (via the RBA) seeks to keep the annual inflation rate to between 2-3 per cent on average over time.

Exam Tip: The RBA charter refers to the low inflation goal in terms of a goal to achieve stability of the Australian currency. This does not mean that the RBA is seeking to achieve a low value for the exchange rate. Currency in the inflation context refers to purchasing power of Australian money (i.e. currency) and the RBA is intent on protecting against any significant erosion of this purchasing power over time.

Points to note about the definition include the following points.

- the definition refers to the general level of prices and therefore means that not all prices are increasing, so some prices may actually decrease
- inflation rates above this range do not always mean that the government has not achieved its goal. Indeed, it may have allowed inflation to creep beyond 3% for a short time in order focus temporarily on economic and employment growth
- inflation below the range (such as below 2% inflation rates experienced in Australia over recent years) need not be a problem if economic growth is satisfactory and there is minimal risk of the rate of inflation falling below zero (i.e. deflation)
- inflation of greater than 2 to 3 percent, whilst it is generally unacceptable, is less problematic when our trading partners are experiencing higher rates of inflation
- the definition does not use zero inflation as the target as this may not be feasible or desirable (see below)

Exam Tip: Q4 in the 2017 exam highlighted a chart showing CPI data between 2010 and 2017 and students were asked to assess the extent to which the government had been able to achieve price stability during 2016- 2017. The best approach for this type of question is to describe the trend over 2016-17 and link this to the specific goal of achieving a rate of inflation between 2-3% on average over time. Given that inflation was outside the target range (i.e. below) for the bulk of 2016-17, it was fair to say that the goal had not been achieved. It was important to only use the selected time period and the better students added value by noting that the CPI was moving towards the bottom end of the target range (i.e. 2%) and/or making the point that being below the target range is typically better than being above.

Why doesn't the RBA target zero inflation?

The RBA has prime responsibility for containing inflation within the desired 2-3% range. There are a number of reasons why the RBA does not actually seek to achieve a zero rate of inflation. These include the fact that:

- the costs of reducing inflation to zero percent may outweigh the benefits (e.g. the benefits of reducing inflation to zero, via higher interest rates, might be outweighed by the costs in terms of higher unemployment)
- inflation helps some markets to adjust by permitting a fall in 'real prices' (for example, real wages can fall to clear labour markets without a fall in the money (or nominal) wage
- a small amount of inflation actually helps monetary policy to be more effective in stimulating AD when the economy is experiencing low or negative growth (e.g. a zero rate of inflation makes it very difficult for 'real' interest rates to become negative as a means of stimulating AD)

- some inflation occurs because of the higher quality of products, and while the ABS seeks to take this into account, higher reported prices will often overestimate the true extent of inflation.

The distinction between inflation, disinflation and deflation

Inflation refers to an increase in the general price level or an increase in the average price level over time.

Deflation is the opposite of inflation. It refers to a decrease in the general or average price level. This means that prices on average are falling, it occurs relatively infrequently in Australia but did occur over 2020. Deflation can be damaging to an economy and employment if many people delay their purchasing decisions because they believe that prices will fall in the future. For instance, a consumer might be thinking of buying a new car, but instead decides to keep their old car running because a replacement car will cost less in a year or two's time. Similarly, when property prices decline, it is likely to slow the volume of sales as people delay buying in the hope they pay less later. This reduces consumption, AD and production of goods and services, resulting in a reduced demand for labour, lower employment and higher unemployment. Overall, it makes it harder to achieve the macroeconomic goals of the federal government.

Disinflation refers to fall in the rate of inflation. For example, if Australia's rate of inflation falls from 4% in year 1 to below 2% in year 2, prices on average are still rising over the period (i.e. inflation still occurs), it's just that prices are not rising as rapidly in year 2 when compared to year 1.

Exam Tip: This is a new key knowledge point for the 2023 Study Design, students should have a clear understanding of the disctintion between these three concepts.

Measurement of the inflation rate using the Consumer Price Index (CPI), including the difference between the headline and underlying (core) rate of inflation

The headline measure of inflation (The CPI)

The Consumer Price Index (CPI) is the most common measure of inflation and is calculated on a quarterly basis in March, June, September and December. In October 2022 the ABS released a new monthly indicator of inflation designed to give the RBA and other economic institutions more timely data with which to make decisions. However, the quarterly rate is the key or main measure of inflation that is relied upon by policy makers.

The traditional (quarterly) CPI measures quarterly and annual changes in the price of a 'basket' of goods and services which account for a high proportion of expenditure by metropolitan households. Approximately 100,000 price quotations are collected each quarter across the eight capital cities and the 'basket' covers a wide range of goods and services, arranged across eleven group, which are weighted according to their relative importance to the 'typical' metropolitan household.

The CPI groups, as well as their contribution to the overall change in the CPI, for the September quarter 2023, appear below.

Weighted average of eight capital cities	QTR % change	ANNUAL % change
Food and non-alcoholic beverages	0.6	4.8
Alcohol and tobacco	1.4	4.9
Clothing and footwear	0.4	0.9
Housing	2.2	7.0
Furnishings, household equipment and services	-0.8	2.5
Health	0.8	5.4
Transport	3.2	5.6
Communication	2.1	1.3
Recreation and culture	0.2	5.6
Education	-0.4	4.8
Insurance and financial services	1.4	8.6
All groups CPI, seasonally adjusted	**1.2**	**5.4**

***Source**: http://www.abs.gov.au/ausstats/abs@.nsf/mf/6401.0*

In seasonally adjusted terms, the inflation rate for the quarter ended 30 September 2023 was 1.2% (annualised 4.8%) and 5.4% over the year. Both these measures are still above the RBA's target band of 2-3% despite the drastic interest rate rises over 2022-23.

Exam Tip: Students might note the reference to 'seasonally adjusted' figures. The seasonally adjusted figures are based on the original figures but remove the impact of any price changes that occur at the same time every year. For example, when the prices of seasonal summer fruits fall over the March quarter, this will result in a lower CPI in 'original' terms but have no impact on the CPI in 'seasonally adjusted' terms. The examination is unlikely to specifically ask a question relating to the difference between seasonally adjusted and original figures.

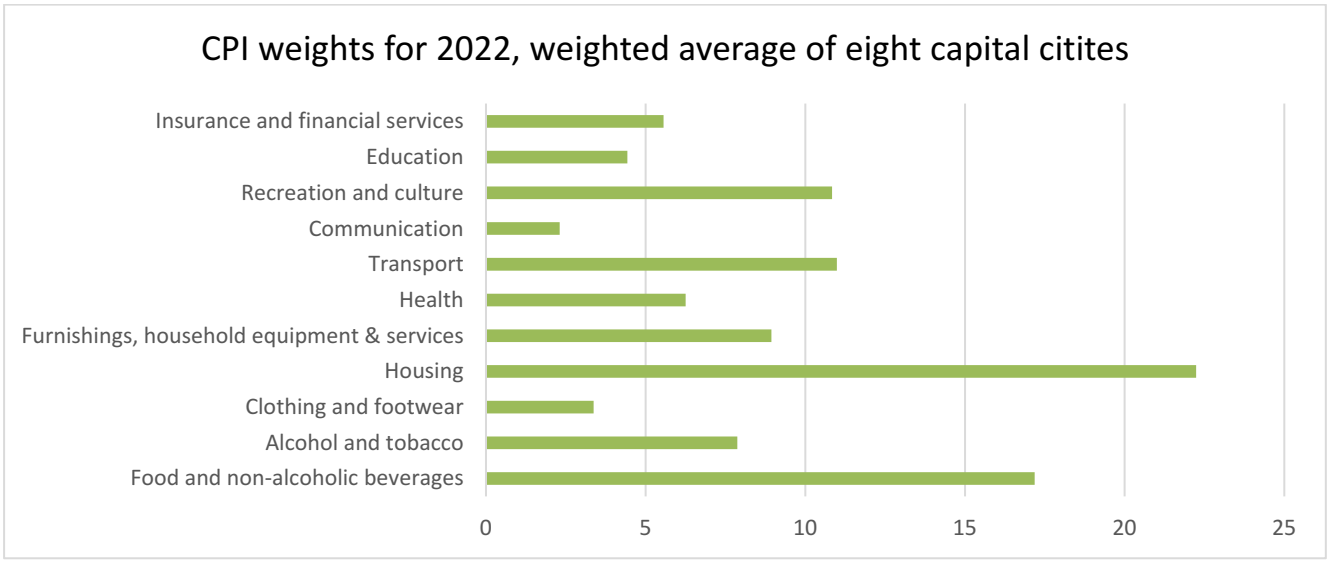
The largest contributors to the *annual* average price increase of 5.4% were the 'Insurance and financial services' and 'Housing' groups which rose 8.6% and 7% respectively over the year.

Rises in insurance premiums was the major driver of the 'Insurance and financial services' group, which is the price households pay to insure their home, cars, or other assets. Insurance premiums tend to rise during and after periods of high inflation (e.g. during the post COVID-19 recovery of 2021) as insurers seek to recover the higher replacement costs for cars, construction/repair costs and other household items. The rise in these insurance premiums then flows through into the CPI creating more inflationary pressures (which we are observing now in the Australian economy).

Despite the name, the housing category does not include the price of buying an existing house in Australia. Instead, it includes rent and construction costs. The RBA does not include existing house sales in the CPI data because, 'it is a transfer of an existing asset'. There has been some debate about the validity of this argument as a house is obviously a large expense for a lot of Australian households.

As has been the case for some time now the housing category was the largest contributor to inflation over the year to September 2023. This rise is due to both rising construction costs (as building materials and wages continue to climb) and the significant increase in rental prices over 2022 and 2023. Over the past two years, rental prices have risen due to lack of available rental properties (e.g. a lack of supply) and Australia's increased immigration intake which leads to more demand for housing. To compound this imbalance, the increased construction costs and rising interest rates are acting as a deterrent for the construction of new homes, resulting in further restrictions on supply. As a result, demand for rental properties has far outweighed supply, leading to significant price rises (see adjacent chart).

Each group has a different weighting in the CPI because each of these groups makes up a different percentage of the total basket of spending for the average household. Weightings are very important in determining the overall change in the CPI. To illustrate, the 7% growth in prices within the 'Housing' category will have a larger impact on CPI growth compared to the 8.6% rise experienced within the 'Insurance and financial services' category. Even though both expenditure categories experienced similar price increases over the period, their weightings are significantly different. This is highlighted in the chart below, with 'Housing' carrying a weighting of 22.2% compared to only 5.5% for 'Insurance and financial services'. This reflects the fact that an average household would spend roughly four times more of their disposable income on renting or constructing a home than on insurance or financial services.

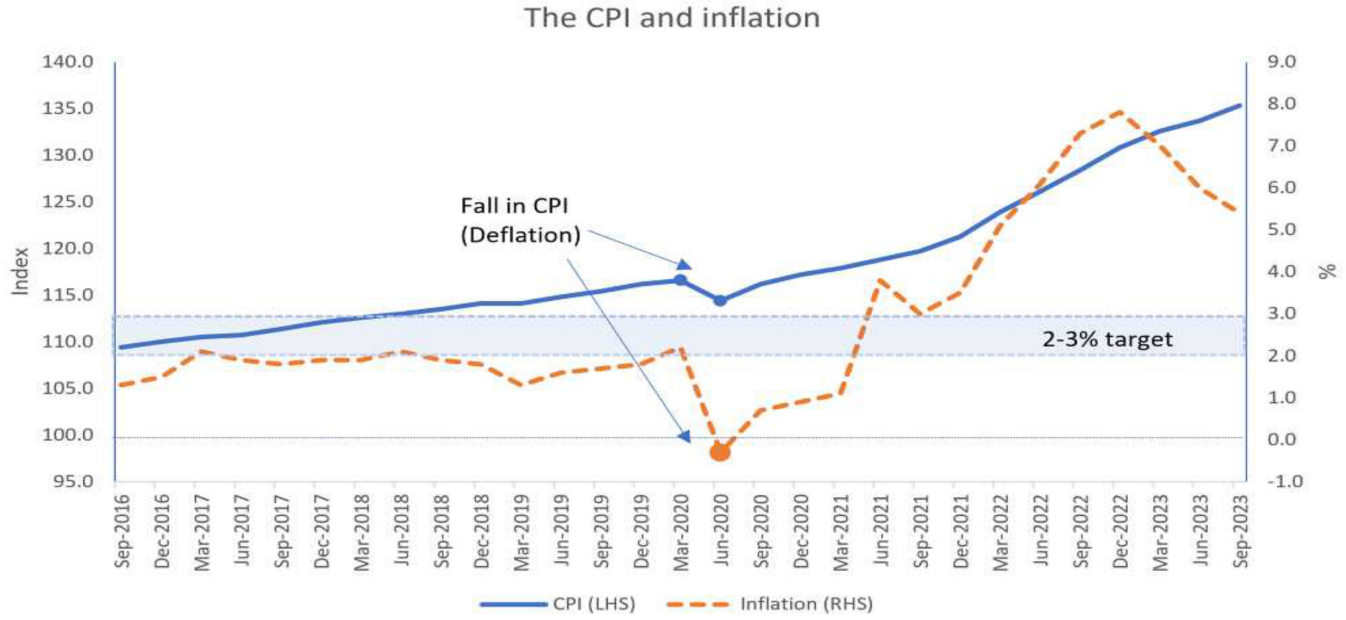


When analysing inflation data, it's important to distinguish between the index data and rate of growth in the underlying index. As can be seen in the chart below, the 'original' CPI has been increasing over the past 7 years (from around 107 in September 2015 to over 135 in September 2023). You can see in the 5 years leading up to 2020, Inflation was just within, or below the RBA's target band of 2-3 per cent and for much of this time the RBA was concerned with persistently low inflation.

In the June 2020 quarter. A significant drop in demand pressures lead Australia to experienced deflation of -0.3%. You can see this reflected in the CPI data (LHS) where the CPI decreases from around 116 index points to below 115. For all other periods on the chart the CPI is increasing, reflecting inflation or disinflation.

The post COVID-19 recovery of 2021 led to significant demand pressures being placed on the economy, with supply unable to keep up and inflation reaching as high as 7.8% during 2022.

Since 2022, the RBA has consistently raised interest rates to dampen demand and bring inflation back down towards its target 2-3% band. Whilst it has had some success in reducing the rate of inflation (see the dashed line in the chart below), the most recent annual rate of 5.4% is still well above target. As a result, the RBA has indicated that it will continue to raise interest rates (if necessary) to bring inflation back with the target range of 2-3%.



Exam Tip: While students are not required to remember statistics going back as far as 2016, it is possible for a chart similar to that presented above to appear on the exam in order to test one of the key skills listed in the Study Design (to interpret graphs or charts). It is common to misinterpret charts/graphs when under the pressure of an examination. To illustrate, students might be asked to describe the trend in the rate of inflation since 2020. Some students would err by attempting to describe the trend over the whole period and/or reading off the wrong y-axis to say something silly like '…inflation has trended down up since June 2020, from approx 115 to approx 135 in Sep 2023'.

Once the ABS has formed index numbers, it is relatively straightforward to calculate the rate of growth in the index (i.e. the inflation rate). To calculate the inflation rate for any period of time involves the use of the index numbers for the end of the period and comparing them to the index numbers for the start of the relevant period. The following formula should be used:

$$\textit{Inflation rate} = \frac{\textit{Price index (end) less Price index (beg)}}{\textit{Price index (beg)}} \times 100$$

For example, to calculate the **annual** inflation rate for the year ending September 2023, we need the price index number for the September quarter 2022 (i.e. the start of the period) and the price index for the September quarter 2023 (i.e. the end of the period). We then 'substitute' these numbers into the formula below:

$$\textit{Annual Inflation rate (Sep 22 to Sep 23).} = \frac{135.3 - 128.4}{128.4} \times 100 = (6.0/128.4) \times 100 = 5.4\%$$

We could also use the same formula above to calculate the **quarterly** inflation rate. However, we would use the previous quarters index number (Jun 23) for the start of the period and the current index number (Sep 23) for the end of the period.

Quarterly Inflation rate (Jun 23 to Sep 23). = $\frac{135.3 - 133.7}{133.7}$ X 100 = (1.6/133.7) X 100 = 1.2%

To find the **annualised** inflation rate we simply multiply the current quarterly rate by 4. E.g. **1.2% X 4 = 4.8%**

Exam Tip: A key skill in the Study Design is the requirement for students to 'calculate relevant economic indicators using real or hypothetical data'. Given the introduction of a calculator in the new Study Design it is recommended students practice calculatons using relevant and real economic data which can be found on the ABS website.

The measurement of inflation - underlying rates of inflation

Since 1998, the RBA moved away from quoting the 'underlying inflation rate' in its target for inflation. However, the RBA consistently focuses on the 'underlying' rates of inflation in its deliberations on monetary policy. This enables the RBA to make more informed policy decisions based on what it believes to be the core or underlying price pressures in the economy and to ignore those more temporary influences on prices that are not typically related to the general conditions impacting on production and prices in the economy. In other words, the underlying rate of inflation is an important tool used by the RBA even though it is not specifically referred to in the 'target'. You may also hear the expression, 'core' rate of inflation - this is essentially the same as the underlying rate.

" The Reserve Bank's objective is to keep consumer price inflation between 2 to 3 per cent, on average, over [time]. The objective is clearly in terms of the overall CPI. But measures of underlying inflation provide information that help to achieve this objective… measures of underlying inflation are one of the tools used by Bank staff in considering what part of recent price movements is likely to be 'noise' and what is likely to be persistent and to therefore have implications for future inflation"

(Tony Richards, Head of Economic Analysis Dept, Address to ABE 28/11/06 and RBA Bulletin March quarter 2010)

The RBA's 'trimmed mean' or ''weighted median' are statistical means by which the RBA excludes volatile items to arrive at a core or underlying rate. In simple terms, the trimmed mean focuses on the price changes for bulk of items in the CPI, but excluding those price changes that make up the top and bottom 15%. The 'weighted median' focuses on the price change that is in the middle (or the mid-point) of the range of price changes in the CPI.

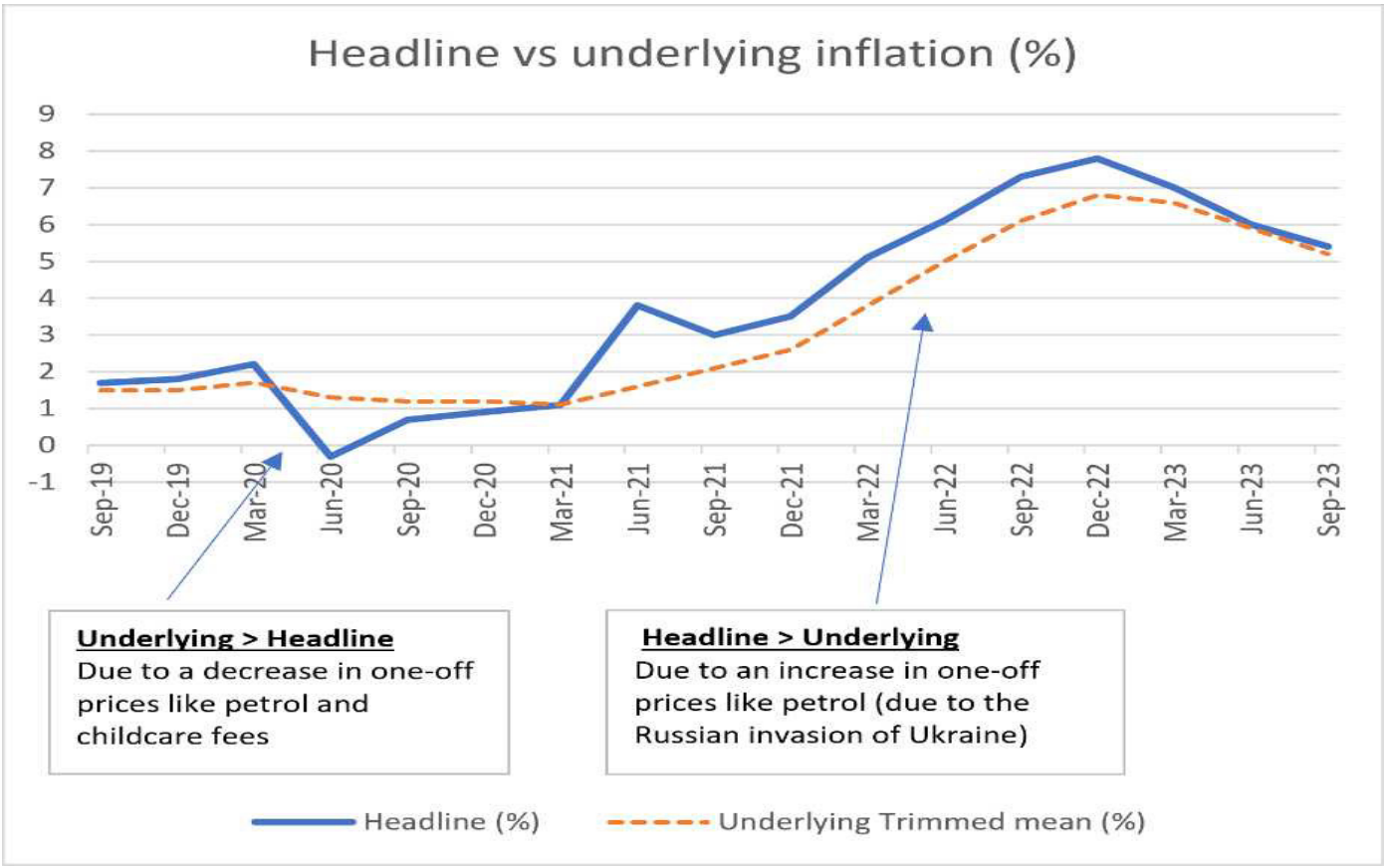
Generally, the difference between the 'headline rate of inflation' and 'underlying rates of inflation' is that the latter effectively exclude items from the CPI whose prices are generally highly volatile (e.g. petrol prices), exhibit marked seasonal patterns (e.g. holiday airfares) or are one off factors (e.g. the impact of natural disasters or changes to indirect taxes such as the recent increases in the excise on tobacco).

For the year to end September 2023, the underlying rates of inflation were as follows:

Measure of inflation (seasonally adjusted) Year ended September 2022	
CPI Headline	5.4
RBA trimmed mean	5.2
RBA weighted median	5.2

Exam Tip: In the 2023 exam students were asked to explain why the underlying rate of inflation might differ from the headline rate. The best reponses highlighted the differences by demonstrating an understanding of both measurements and giving a relevant example as to why the underlying rate might be higher or lower than the underlying rate.

The chart below highlights the differences between headline and underlying rates over the past few years.



It is useful to develop an understanding of what may be causing a difference between the various headline measures. In particular, the difference between CPI Headline and the RBA trimmed mean. Over 2020, Australia entered a recession and headline inflation fell significantly below the underlying rate, triggered by temporary government subsidy that effectively reduced the price of childcare to zero, as well as much lower fuel prices (due to the glut of crude oil on global markets). Since 2021, relative shortages began to develop in the market for crude oil as the world economy commenced its recovery phase from the global covid recession. This caused fuel prices to climb to their highest level ever recorded, which combined with the unwinding of free childcare (via the provision of producer subsidies) to cause the headline rate to climb well above the underlying rate over the course of 2021. During 2022, many one-off price increases were removed from the underlying measures but remained in the headline figure leaving the headline rate above the underlying. However, over 2023 the headline rate has fallen towards the underlying rate (and should fall below the underlying rate into 2024) as many of the volatile price hikes are reversed (e.g. petrol prices and construction costs start to fall from their peak) which reduces the headline rate without influencing the underlying rate.

Causes of inflation, including demand inflation and cost inflation

As mentioned earlier, demand and supply factors affecting each of the government's domestic goals will be examined as a group after exploring each economic goal. It is worth noting at this stage that demand factors affecting inflation include any factor that can exert pressure on aggregate demand in the economy. These demand factors will contribute to pressure for the average price level to rise (inflation), particularly when the economy is close to (or at) its productive capacity.

Demand inflation

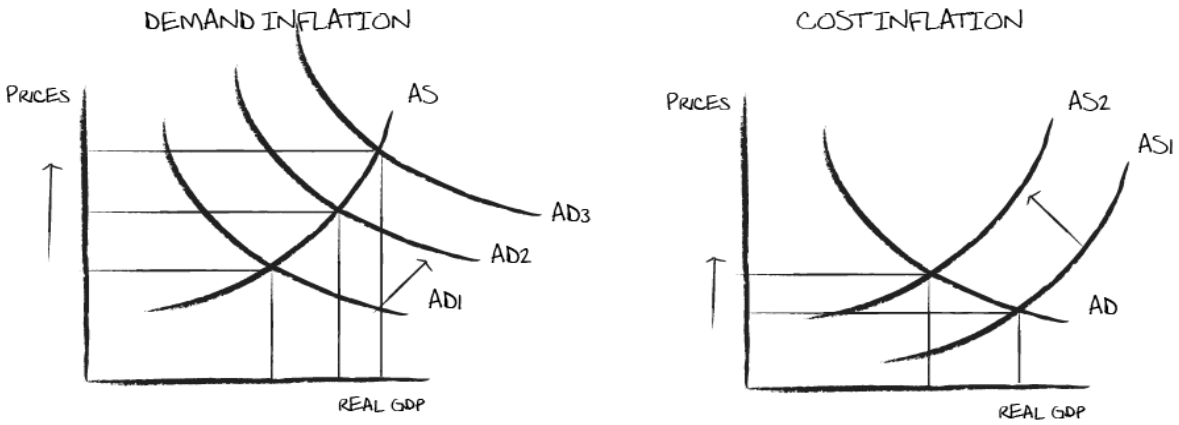
Inflation emanating from demand side pressures is sometimes referred to as **demand inflation**. Demand inflation is commonly defined as a situation where the aggregate demand (AD) of the economy exceeds the capacity of the economy to supply at a given price, which leads to widespread shortages and causes profit maximising producers to raise prices. In addition, before maximum output (productive capacity) in an economy is achieved, businesses will be able to increase output, but will need to start paying 'over time'/ higher wages and/or use more resources, which raises the cost of production. Producers will then further increase prices in order to maintain profitability (e.g. protect profit margins) at levels that make it worthwhile to continue supplying to the market. The closer the economy gets to its productive capacity, the greater the extent of the shortages and the more rapidly prices are likely to rise. As discussed previously, demand inflation was prevalent in Australia, and indeed around the world, as economies emerged from COVID-19 lockdowns. Accumulated savings, high(er) confidence levels, low unemployment and record monetary and budgetary policy stimulus meant that AS could not keep up with growth in AD.

Every demand factor affects inflation in a similar way, via pressure on AD, and in order to analyse how each demand factor affects inflation, it is necessary to demonstrate how the relevant factor impacts on AD. Once this is understood, the analysis of how inflation is influenced will be the same. For example, an increase in interest rates reduces cash flows for both consumers and businesses with existing loans and reduces the incentive to borrow for both Consumption and Investment (as the cost of borrowing increases). Accordingly, consumers may delay or put off consumption of goods and services (particularly durable goods) and businesses may delay investment as the 'hurdle rate of return' (the rate, below which, investment projects become non-viable) is less likely to be reached. *These factors result in downward pressure on Consumption, Investment and therefore AD (shifting the AD curve to the left), reducing shortages in markets (or creating surpluses), which decreases demand inflationary pressure and assists the government in its attempts to achieve its price stability goal.* The explanation in italics will essentially be the same for other demand side factors to the extent that they negatively impact on AD.

Cost inflation

Aggregate Supply (AS) represents the total output producers are willing and able to supply at any given price and also reflects the productive capacity of the economy at any point in time. Producers main goal is to maximise profits, so factors that influence the costs of production will influence the willingness of producers to supply and hence levels of AS and inflation within an economy. As the cost of production rises, to maintain profits producers are likely to raise prices, which adds to inflationary pressures. The AS curve will shift to the left because at any given quantity of output producers will require a higher price to maintain their profit levels. Alternatively, a supply disruption caused by an event such as a natural disaster (e.g. a cyclone or flood) will immediately reduce supply capacity of the economy, shifting the AS curve to the left, creating shortages and exerting upward pressure on prices.

Overall, supply factors affecting inflation include any factor that can exert pressure on aggregate prices in the economy via changes in the costs of production or restrictions to aggregate supply levels (e.g. natural disasters or other 'supply shocks'). Alternatively, it represents inflation that has been caused by 'supply side' pressures in the economy. Inflation caused by supply side pressures or supply side constraints is typically referred to as **cost inflation**. The difference between demand and cost inflation is illustrated in the two diagrams below.



Exam Tip: In the 2022 exam, students were asked to, 'distinguish between demand inflation and cost inflation'. Many students mistook demand and cost inflation as microeconomic concepts. Whilst cost inflation may stem from a 'micro' issue, these are macroeconomic concepts. To achieve full marks students needed to focus on how they were driven by a change in aggregate demand and aggregate supply and demonstrate they understood a distinction between the two.

Extension: What are inflationary expectations?

Expectations of future price increases can actually cause inflation. This is because workers, suppliers, producers and governments expect prices to rise and seek to maintain their real incomes by demanding higher wages, taxes, profits etc. even before the price rises have actually occurred. Hence, their expectation of future price rises, and their subsequent action to counter the effects of these future price rises, actually causes inflation. For example, if wage earners expect prices to increase they can seek wage increases that are passed on by employers in the form of higher prices. This can actually trigger a wage/price spiral that can be difficult for governments to reverse. We will see in Unit 4 that the RBA implements monetary policy with a view not only to dampen inflationary pressures, but to 'kill off' any inflationary expectations.

Consequences of not achieving the goal of low and stable inflation (price stability) and its effect on living standards

High inflation has a number of negative effects on the economy and living standards more generally. When inflation is too high (e.g. above 3%) it will make it increasingly difficult to achieve other economic goals (e.g. economic growth, full employment as well

as a sustainable level for the current account deficit and/or net foreign debt) that are necessary for living standards to be maximised. Accordingly, the government recognises that once Australia achieves low inflation, it has established an economic environment that is conducive to the achievement of all economic goals.

Consequences of inflation that is too high [e.g. 5.4% in Sep 2023]

The erosion of purchasing power

Purchasing power is the quantity of goods and services that a given amount of nominal income can afford to purchase. When inflation rises at a faster rate than income or wages growth, households will be able to afford fewer goods and services with any given amount of nominal income. This happened in Australia between September 2022 and 2023, with prices rising at 5.4% (inflation) and wages growing at only 4% (wage price index) over the period. This effectively meant that households could afford to purchase 1.4% **fewer** goods and services or in other words they lost 1.4% of their purchasing power which is detrimental to material and non-material living standards.

Development of a wage-price spiral

When inflation is high households will look to negotiate higher wages to keep in line with inflation and maintain their purchasing power. If successful in negotiating higher wages, households would likely spend more to maintain their living standards by purchasing a similar basket of goods and services just at a higher price. This leads to an increase in C spending and an increase in AD. At the same time, firms are likely to pass these higher wage costs on to consumers e.g. an increase in costs of production will decrease AS. By increasing prices even further. Both these forces (demand and supply) put further pressure on the inflation rate and cause a 'spiraling effect' where wages would be renegotiated even higher again, which puts even more pressure on the level of inflation.

Distortion of spending and investment

Traditionally during periods of high inflation investors have looked to safe havens like gold and other alternative assets as a 'hedge' against inflation. This distorts the market mechanism and pushes investment away from productive uses into more speculative investment. Over 2020-2022, Bitcoin, NFTs and other cryptocurrencies were touted as protection against inflation and billions of dollars of speculative money flowed into these markets. This is income that could have been invested into productive activities (Investment) which could boost the productive capacity of the economy and improve living standards.

Lower returns on investment

In simple terms inflation erodes real returns on investment (e.g. an investment returning 2% when the inflation rate is 4% means the real return is -2%). Historically, during periods of high inflation, traditional investments in shares, property, and bonds do poorly however for more complicated reasons. Its first important to understand that shares and bonds are both examples of investment assets [we will discuss bonds in more depth in the Unit 4 Study Guide 2]. For now, a bond is a type of investment which has a fixed rate of return (%) at the time of issue which is effectively determined by the RBA's cash rate. Shares on the other hand, are an investment in an underlying business (e.g. Woolworths or Coles shares) where returns are largely determined by the profitability of that business (not fixed). The purchaser of the share effectively buys a small part of the company and therefore becomes one of many owners of the company, as opposed to the purchaser of a bond, who is simply a lender (to the bond issuer). Shares are inherently 'riskier' forms of investment than bonds.

The lower returns on investment can also come from the action, or anticipation of action, from the RBA (and other central banks) in response to higher inflation. The RBA will, as it has done throughout 2022 and 2023, raise interest rates during periods of high inflation to dampen spending and reduce inflation. Higher interest rates will drive up the returns (i.e. interest rates and/or yields) on savings and bonds, and in response, the investment returns on non-debt related investments (e.g. shares and property) will be relatively lower.

Exam Tip: For simplicity, reference to nominal vs real rates of interest has deliberately been omitted in this section. In reality, higher interest rates during periods of inflation has less of an effect on investment decisions to the extent that investors focus on the real rate of return as opposed to the nominal rate of return. This level of complexity is unlikely to be required in the examination..

With specific reference to shares, they do poorly during times of inflation, this is mostly because investors use the current interest rates on bonds as their risk-free or reference rate. This means investors must be rewarded with higher returns to compensate them for the extra risk taken in shares (e.g. companies fail, Australian government bonds never do). To illustrate, an investor would only invest in shares if the expected return was higher than the fixed interest rate on bonds. During 2020, investors received a return of 0.1% p.a. on a government bond, which was a very low return on investment compared to other investments like shares. Hence, over 2020 (when inflation was low and interest rates where low) shares did very well. As the RBA increased interest rates over 2022 and 2023, the reward that investors needed for taking the risk of investing in shares increases. In 2023 the return for the same government bond is roughly 4% - risk free. Which means investors in shares would need to receive returns well above 4% to compensate them for the higher risk of investing in shares.

In summary, in times of high inflation shares and bonds will get 'sold-off' reducing their value and **lowering returns on investment.**

Loss of international competitiveness

A high relative rate of inflation will reduce Australia's **international competitiveness** as our goods and services become relatively more expensive compared with global competitors. This reduces the ability of our exporting industries to compete in world markets on price and negatively impacts on Australian incomes and living standards. For example, during 2023 inflation in Australia would ordinarily mean that our international competitiveness declined, making it more expensive to purchase some of our exported goods and services. However, inflation in our trading partners was higher than in Australia during 2023, which meant that our international competitiveness actually rose over the period.

Consequences of inflation that is too low [e.g. -0.3% in 2020]

Delayed consumption

When inflation is low, or when deflation exists, households are likely to delay purchasing major goods or services with the expectation that they will be able to purchase the same goods or services at a lower or similar price in the future. This can exacerbate a weak economy because it decreases AD and can cause further deflationary pressures.

Unemployment

The lack of spending that is described above will also reduce demand for labour as businesses will experience weak sales during periods of weak growth. This leads to an increase in the unemployment rates and a reduction in living standards.

Exam Tip: In the 2022 exam students were asked to 'examine one economic consequence of a high inflation rate on the efficiency of resource allocation'. Whilst this is no longer part of the listed consequences of high inflation in the new Study Design, many students were unable to explain this particular consequence instead opting for an easier consequence e.g. 'purchasing power'. It's recommended that students learn all the consequences of high and low inflation above and 'specialise' in at least one consequence of high inflation and one of low inflation.

The meaning of the goal of full employment, including the NAIRU (natural rate of unemployment)

The target of 'full employment' has changed over time. During the 1960's and 1970's full employment occurred when unemployment was 1-2%. As unemployment increased in the 1980's the statistical definition of full employment also changed. Full employment has generally been regarded as a level of unemployment that exists when the government's economic growth objective is achieved such that the economy is growing at its maximum sustainable rate - one where growth in both wages and inflation is not too excessive (e.g. above 3%). Full employment is also considered by some economists to be the ideal situation where anyone who wants a job is able to get one within a relatively short period of time and/or where the level of job vacancies is equivalent to the number of people unemployed.

In Australia, it is generally accepted that *the full employment objective involves the* ***attainment of an unemployment rate of approximately 4.25%.*** This is sometimes referred to as the natural rate of unemployment or the *Non-Accelerating Inflation Rate of Unemployment (NAIRU) e.g. the rate of unemployment that does not place excessive inflationary pressures on the economy.* It also requires that cyclical unemployment is zero, meaning that the only unemployment existing is structural, hard-core, frictional and seasonal [covered below]. It's important to note that the NAIRU is formulated using a complex economic model (e.g. it's a prediction) and therefore fluctuates over time and is not directly observable. As a result, economists cannot know what the lowest rate of unemployment without causing inflation is, until after the fact. This, along with the other limitations of using the unemployment rate [discussed below], present challenges when analysing the labour market and determining the extent to which

full employment has been achieved - especially if the rate of unemployment is below 'NAIRU'. If the current NAIRU of 4.25% is indeed accurate, it means that the current unemployment rate of 3.7% (as at October 2023) will continue to create wage and inflationary pressures.

In a speech made in the middle of 2023, Michelle Bullock (RBA Governor) provided some clarity in relation to what 'full employment' entails from the RBA's point of view. She noted that:

> *'We think of full employment as the point at which there is a balance between demand and supply in the labour market (and in the markets for goods and services) with inflation at the inflation target … [But] while the NAIRU is an important concept, it is only one of the ways the Bank assesses whether it is meeting its full employment objective… full employment [also] means that people are able to find a job without having to search for too long. This does not mean an unemployment rate of zero. There will always be frictions in the labour market that mean it takes time to find a suitable job, including because the skills required do not match the candidates available or there are structural impediments to employment.'*
>
> *Source: A speech by Michelle Bulluck, June 2022. https://www.rba.gov.au/speeches/2023/sp-dg-2023-06-20.html*

Achieving full employment over the past two years:

Over the 2022-23 period the unemployment rate remained below the NAIRU of 4.25% and other indicators, including the underemployment rate, vacancy rates and job ads, all pointed to perhaps the tightest labour market for many years. As a result, growth in wages increased to 4% p.a., supporting a view from the RBA Governor Michelle Bullock, that:

> *For the first time in decades, firms' demand for labour exceeds the amount of labour that people are willing and able to supply. That is, employment is above what we would consider to be consistent with our inflation target.*
>
> *Source: A speech by Michelle Bulluck, June 2022. https://www.rba.gov.au/speeches/2023/sp-dg-2023-06-20.html*

When the unemployment rate is below the NAIRU target, students are often confused about whether the goal of full employment has or has not been achieved. Employment is perhaps the most important factor for improving the material and non-material living standards for Australians. Having a job provides wages, which are typically above the level of transfer payments or income support for the unemployed, which provides households with access to goods and services that would otherwise be unattainable (improving material living standards). Furthermore, having a job provides people with a social network, a sense of belonging and a greater purpose in life all of which improve physical and mental health outcomes (improving non-material living standards). Therefore, when the unemployment rate falls below the NAIRU rate it would be a mistake to assume this is a bad outcome. In this environment, it is more accurate to think in terms of the goal being '**overachieved'**, rather than the goal not being achieved at all.

The 'overachievement' of the full employment goal in 2023 exerted pressure on wages and inflation and (in part) forced the RBA to increase interest rates in order to 'restore the balance between demand and supply of labour'. This rise in interest rates does reduce living standards for many households, but living standards are expected to remain higher than otherwise if the RBA did not pre-emptively act to reduce inflation and its negative consequences. The RBA must achieve a delicate balance between its price stability and its full employment goals. Importantly, a low unemployment rate that is placing pressure on wages and inflation does not mean that the full employment goal has not been achieved, rather it means that the achievement of price stability is threatened (or not being achieved).

Exam Tip: Part of Q4 in the 2018 exam required students to assess the extent to which the Government has achieved full employment over the past two years. The question accompanied a chart showing both the downward trend in the unemployment rate (and the underemployment rate) over the relevant period. To answer the question effectively, students needed to compare the actual rate of unemployment to the rate of unemployment that is consistent with the government's goal. Given the uncertainty about the precise level of NAIRU, students are afforded some flexibility when 'defining the goal'. A range between 4% - 5% would be acceptable, provided that students clarify or imply that it is an approximation. The best responses will have been those who made meaningful reference to the relevance of underemployment when determining NAIRU (or the full employment rate of unemployment).

Classifications within the labour force, including employed, unemployed, hidden unemployed, long-term unemployed, underemployed and frictional unemployment

The ABS conducts a monthly labour force survey and defines the **labour force** as all those people aged 15 and over who are willing and able to work, which is simply the total number of employed plus the total number of unemployed.

Those considered **employed** must meet the following requirements:

- aged over 15 years
- working either full or part-time (i.e. a minimum of one hour per week in most cases)
- currently working but absent because of illness, strike or vacation

Those considered **unemployed** must meet the following requirements:

- aged over 15 years
- without a job (did not work for a minimum of one hour) but actively looking for work (full or part-time)
- able to accept a job in the week prior to the survey

The total 'civilian' (non-military) working age (i.e. over 15) population of 21,980,100 people can be split into the following three categories:

Labour force statistics October 2023
Category (original figures)

A.	**Employed persons**	**14,145,400**
B.	**Unemployed persons**	**542,100**
C.	**Persons not in the labour force but of a working age (over 15)**	**7,292,600**

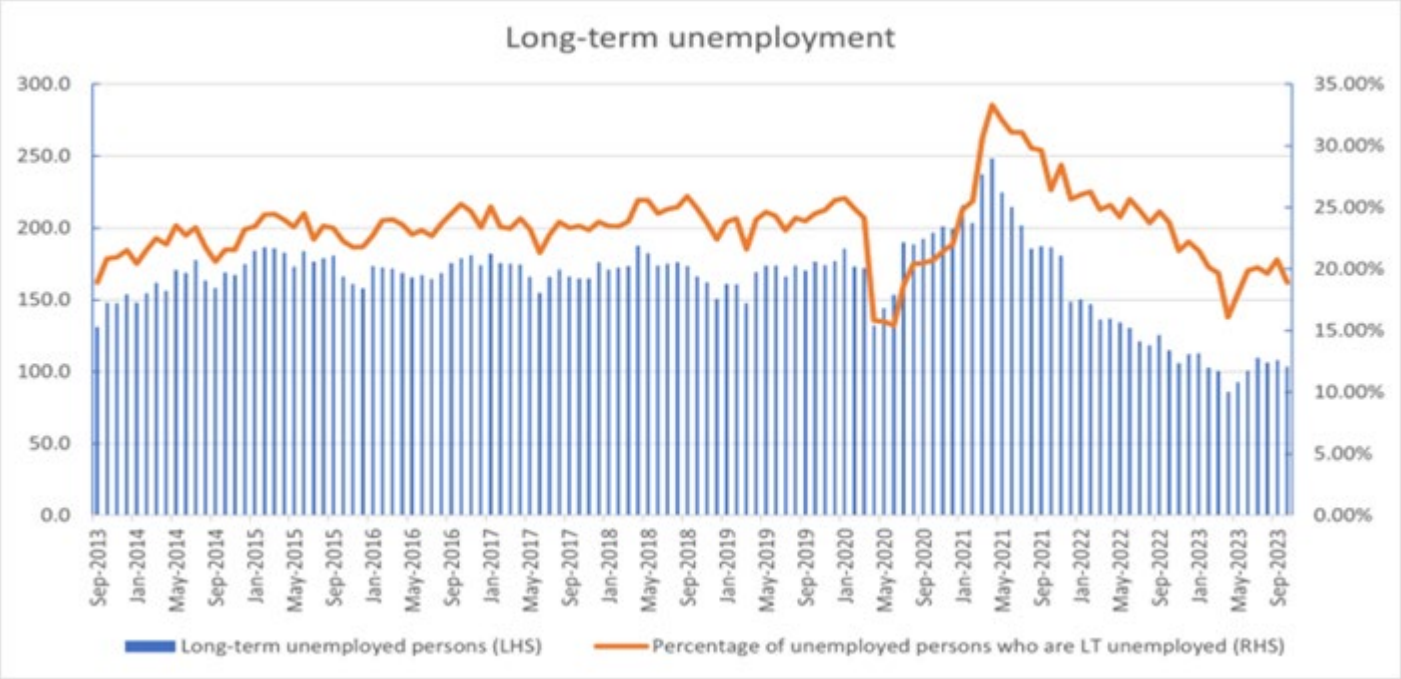
Hidden (discouraged) unemployment

The unemployed statistics do not reveal the extent of hidden unemployment. This occurs when people who are not members of the labour force, would actually prefer to be working, but are not actively seeking employment because they are discouraged about their employment prospects. Hidden unemployment tends to increase during economic downturns as repeated rejections cause job seekers to exit the labour force (i.e. stop looking for work), which results in downward pressure on both the participation rate and the actual unemployment rate. In contrast, when the economy enters the recovery phase, job prospects improve and some in the pool of 'hidden unemployed' re-commence their search for jobs, replacing hidden unemployment with actual unemployment.

Long-term unemployment

To be categorised as long-term unemployed, a person must be unemployed for more than 52 consecutive weeks. As at October 2023, there were 103,800 Australians considered to be long-term unemployed, which represents 19.2% of the total number of people unemployed. As highlighted in the chart below, the number of long-term unemployed persons (LHS) has trended upwards since 2013 from approximately 100,000 to a 250,000 peak in 2021. This trend was mostly in line with changes in the total amount of unemployed persons (which also increased over the period- *not on the chart*) Long-term unemployment often reflects those who are structurally unemployed and is disproportionately made up of people over the age of 50.

Post COVID, from 2021 onwards the amount of long-term unemployed persons has decreased drastically from the peak of 250,000 to 103,500 which means around 126,500 people who had struggled in the long-term to find employment, were employed in the post COVID-19 recovery. The percentage of overall unemployed persons who are long-term unemployed has also dropped to 19.2%. The decline in the long-term unemployment numbers over the past year reflects the tight labour market conditions in Australia.



Exam Tip: Long term unemployment is a new addition to the 2023 Study Design. It is recommended that students can demonstrate an understanding of the definition and a possible cause of the trend in long term unemployment in Australia.

Underemployed (disguised unemployment)

Unemployment figures do not capture the incidence of ***underemployment*** (also referred to as ***disguised unemployment***). The underemployed are those individuals that are classified as employed, but who would prefer to be working more hours. Usually, they are working on a part-time or casual basis when they would prefer to work full-time. Alternatively, they may be underemployed because their employer is operating below full capacity (e.g. full-time workers employed at reduced hours). Many people underemployed experience similar problems to those unemployed – reduced incomes, greater stress and a reduction in living standards.

Frictional unemployment

Frictionally unemployed persons are those who are currently moving from one job to another. Each year around a million people change jobs in the labour market and movement between jobs is unavoidable and necessary to promote dynamic efficiency. However, particularly during downturns in the business cycle some people may take time to find a new job which would leave them frictionally unemployed.

Extension: other types of unemployment

- ***seasonal unemployment*** –occurs for some workers, but only at certain times of the year e.g. fruit pickers, ski instructors, etc;
- ***hard core unemployment*** - those unable to find a job due to mental/physical characteristics that cause repeated job rejections.

Measurement of the labour force, including the participation rate, the unemployment rate and the labour force underutilisation rate

The participation rate

As highlighted above, the labour force comprises both those that are employed and those that are unemployed (i.e. willing and able to work but unable to find a job). Accordingly, (A) + (B) represent the labour force. As at October 2023, the size of the labour force was 14,655,600 people, made up of 14,117,100 employed and 542,100 unemployed.

The participation rate is defined as that percentage of the total 'working age' population (over 15) that are members of the labour force - that is participating in the sense of either working or willing and able to find work. **Note:** the working age population is

A+B+C (21,980,100 people) and it really represents Australia's 'potential' labour force. Accordingly, the rate tells us what proportion of Australia's potential labour force is actually in the labour force.

$$= \frac{14{,}145{,}400 + 542{,}100}{21{,}980{,}100} \times \frac{100}{1} = \mathbf{66.8\%}$$

The unemployment rate

The U/E rate represents the proportion of the labour force that are not employed (i.e. not working for more than one hour per week). It is therefore calculated as follows:

Unemployed persons / Labour force × (100/1)
OR
Unemployed persons (B) / unemployed persons + employed persons (A+B) × (100/1)

The unemployment rate is therefore **3.7%** as at October 2023 and was calculated as:

$$= \frac{542{,}100}{14{,}687{,}600} \times \frac{100}{1} = \mathbf{3.7\%}$$

OR [542,100/ (14,145,400 + 542,100)] × (100/1)

Exam Tip: As noted earlier, the Study Design requires students to calculate relevant economic indicators using real or hypothetical data. Given the introduction of a calculator, It is recommend that students practice calculations using real economic data like above, by going to the ABS website and looking at the latest labour force survey ***ABS Catalogue 6202.0***

The underutilisation rate

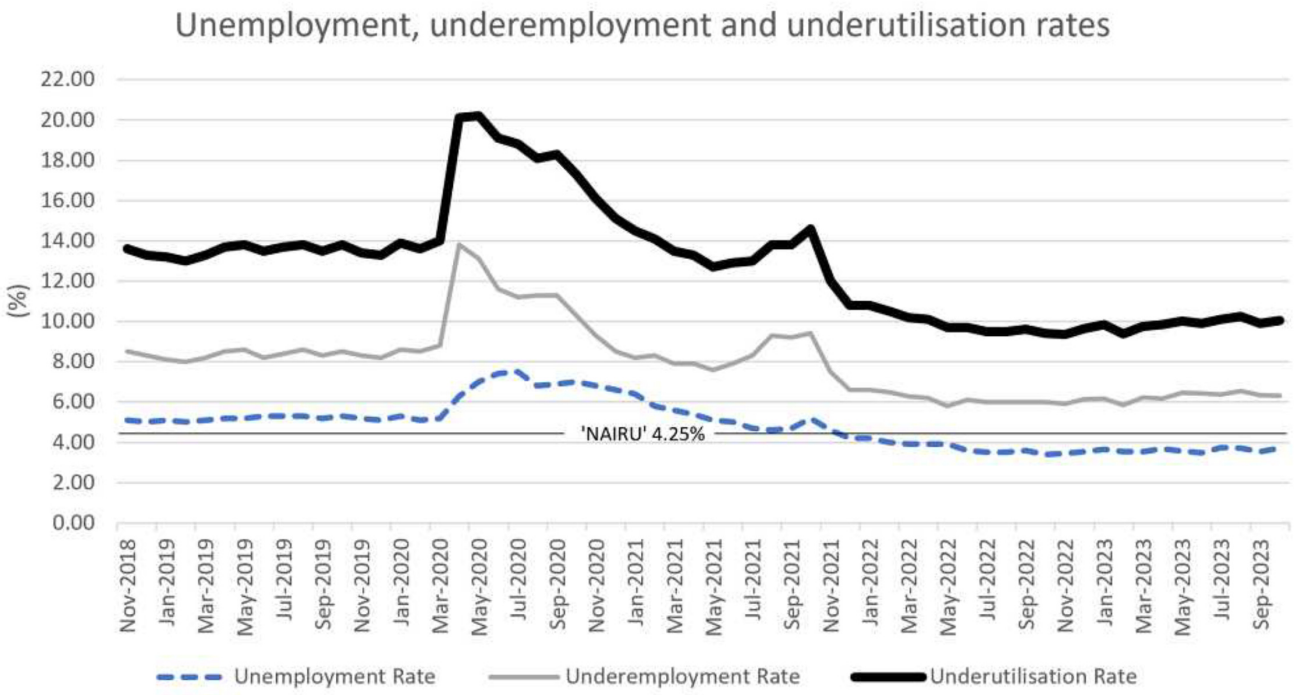
Unemployment figures do not capture the incidence of ***underemployment*** (also referred to as ***disguised unemployment***). The underemployed are those individuals that are classified as employed, but who would prefer to be working more hours. Usually, they are working on a part-time or casual basis when they would prefer to work full-time. Alternatively, they may be underemployed because their employer is operating below full capacity (e.g. full-time workers employed at reduced hours). Many people underemployed experience similar problems to those unemployed – reduced incomes, greater stress and a reduction in living standards.

In recognition of the shortcomings of unemployment statistics as a measure of both spare capacity and the 'losses' associated with little or no work, there is increasingly more emphasis given to both the underemployment and underutilisation rates when formulating economic policies. The ***underutilisation rate*** is calculated as follows:

$$\textbf{Underutilisation rate} = \frac{\text{underemployed + unemployed}}{\text{labour force}}$$

$$= \text{underemployment rate + unemployment rate}$$

During an economic downturn, underemployment generally rises by a greater extent than unemployment as businesses reduce working hours of employees rather than make them redundant. This results in the underutilisation rate rising by a greater percentage than the unemployment rate. However, the reverse occurs during an economic recovery. This was evident during the 2020 recession, as highlighted in the chart below. The large increase in the underemployment rate relative to the unemployment rate during 2020 largely reflects the effects of the government wage subsidy scheme [covered in Part 2 of this Study Guide] which allowed firms to maintain employees on few or zero hours. But it also partly reflects the normal operation of modern day labour markets, with many businesses reducing the hours of employees or contractors during downturns (therefore increasing underemployment) rather than dismissing them outright (which would increase unemployment).



The general growth in the underemployment rate relative to the unemployment rate that has occurred in Australia over the past decade reflects the increasing 'casualisation' of Australia's labour force, with the growth in part time (and/or casual) employment exceeding the growth in full time employment. While many people prefer part time/casual employment over full time employment (and are therefore not considered to be underemployed), it is also true that, increasingly, businesses have restructured in an effort to achieve more flexible (and efficient) workplaces, as well as meet the demands of a changing labour force. This greater workplace flexibility helps businesses to reduce overall labour costs, as labour demand and employment can more easily be 'turned off' (i.e. reduce hours) when conditions are poor and 'turned on' when conditions improve. In addition, there have been changes to the structure of industries due to the 'digital disruption' that has displaced some workers from full time employment. For example, the rise of digital platforms such as Uber and Airtasker has enabled many people (who would otherwise be classified as unemployed) to work 'some' hours each week - therefore reducing unemployment but adding to underemployment. In addition, the technological advances that has facilitated the growth in services across international borders has meant that businesses can more easily tap into foreign (labour) markets rather than maintain full time workers, forcing some local workers into less permanent positions.

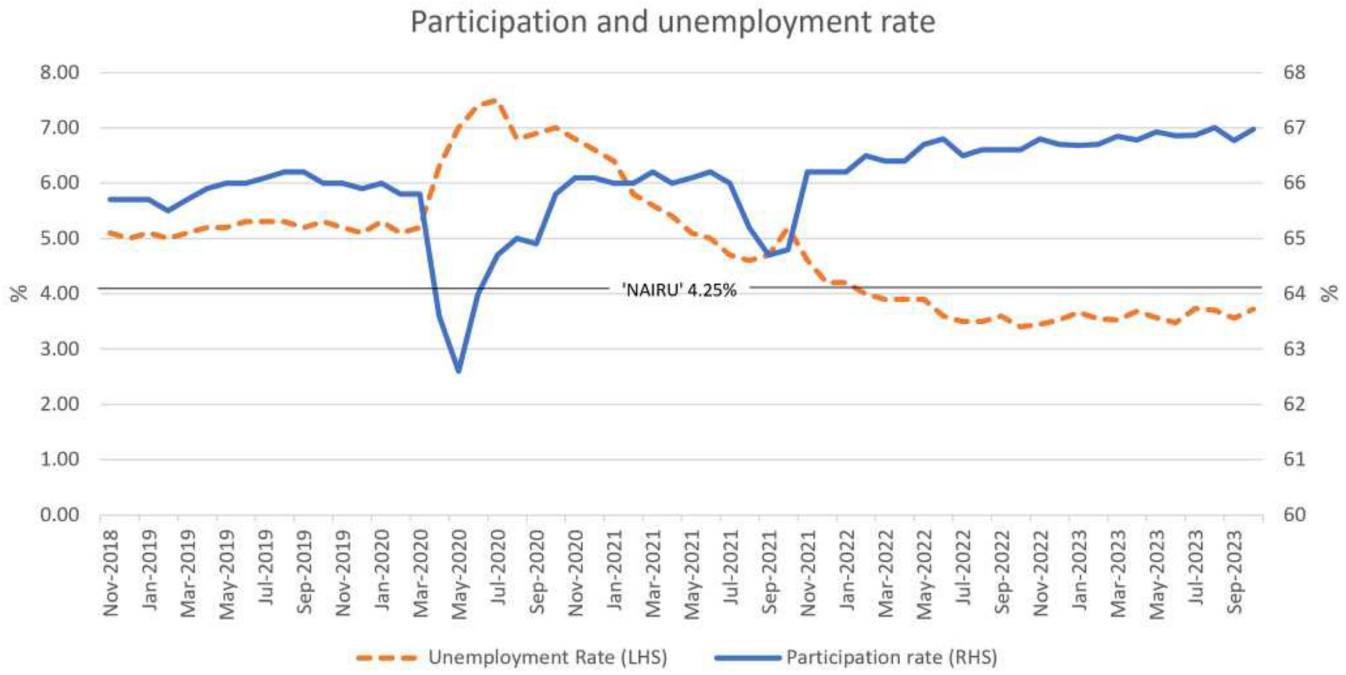
As a consequence, the unemployment rate has become a less meaningful indicator of the strength of the labour market. This is because any decision by businesses to reduce their demand for labour, by offering fewer hours, will not be reflected in a lower unemployment rate. Instead, it may only appear as an increase in the underemployment and underutilisation rates. This means that the relatively low unemployment rate over the past decade (ignoring the recession of 2020) that existed, during a time of below trend rates of economic growth, hides the fact that the labour market remained relatively weak for much of that period. Despite the unemployment rate falling to as low as 5% over 2018-19 and to 4.5% in 2021, there remained spare capacity in labour markets, as evidenced by the relatively high underemployment rate and very low growth in real wages. It was only by late 2022, when unemployment reached as low as 3.4%, that wages growth began to accelerate significantly, providing evidence that there was limited spare capacity in labour markets . The latest data shows that, despite the slowdown in economic growth, the labour market remains tight, with the very low rates of unemployment and underemployment existing alongside high vacancy rates and skills shortages, which is the major reason for the acceleration of wages growth over 2023.

Unemployment and participation rates over recent years

Generally speaking, an increase in the unemployment rate will tend to cause the participation rate to fall as labour force participants start to lose faith in their ability to secure employment and therefore exit the labour market and enter the pool of hidden unemployed. This is most evident in figures over 2020, with the unemployment rate climbing above 7% which contributed to the fall in the participation rate from approximately 66% to approximately 63%. The reverse applies when the economy is relatively strong and the unemployment rate falls towards the full employment level. For example, over the course of 2022 and 2023 the unemployment rate fell to as low as 3.4% which contributed to the participation rate rising towards 67%. In the other direction, an increase in the participation rate is likely to cause a short-term increase in unemployment as the new job seekers are classified as 'unemployed' until they find work. However, in the long term, a higher participation rate can help to reduce the unemployment rate because a higher labour supply helps to reduce wages growth and/or increases pressure on labour

productivity. These factors work to increase the demand for labour, creating additional employment and reducing the unemployment rate.

The chart below highlights the cyclical nature of both the unemployment and participation rates over the past four years.



Exam Tip: Students should beware of graphs with two y-axis. Under exam stress, it is easy to say that the latest unemployment rate is approx 67% or that the participation rate is approx 3.7%. Silly mistakes like this can cost students valuable marks in the examination!

The 2020 recession resulted in a lower demand for labour, higher unemployment and a consequent decline in the participation rate. Interestingly, the unemployment rate reached a peak of 7.4% in mid-2020, which was well below expectations given the severity of the recession. Both Treasury and the RBA were initially predicting double-digit (e.g. above 10%) unemployment figures. One factor contributing to this was the widespread practice of businesses reducing their demand for labour by slashing labour hours, rather than workers – which had the effect of increasing the underemployment rate rather than the unemployment rate (as discussed earlier).

Post COVID-19, strong consumer confidence, expansionary monetary and budgetary policies stimulated AD and improved labour market conditions drastically. You can see that the unemployment rate fell from above 7% in 2020 to 3.4% in 2022 and the participation rate rose as many people rejoined the labour force, encouraged by the strong labour market. You can see that the unemployment rate is now well below what was the previous though to be the NAIRU rate of approximately 4.5%. As noted earlier, the NAIRU cannot be directly observed and is, in many ways, a 'moving-target'. The fact that the unemployment rate was below what was thought to be the NAIRU, and yet wages did not increase significantly, indicated that the NAIRU was lower than originally thought. It is useful to remember that there is always a trade-off between a strong labour market (i.e. a low unemployment rate) and inflation (more on this below).

Exam Tip: Question 1b of the 2021 exam was not well handled by students. It required an explanation for why unemployment was 'different' to RBA forecasts, while making reference to one AD and one AS factor. First, students needed to identify that unemployment was lower than forecast – highlighting the need to be aware of the level/movement in the major macroeconomic variables over the most recent period. Second, the best performing students were those who clearly referenced relevant AD/AS factors when explaining why unemployment was lower than expected (e.g. a lower than anticipated depreciation of the exchange rate on the demand side and a lower participation rate on the supply side).

Hidden unemployment

The unemployed statistics do not reveal the extent of Hidden Unemployment. This occurs when people who are not members of the labour force, would actually prefer to be working, but are not actively seeking employment because they are discouraged about their employment prospects. Hidden unemployment tends to increase during economic downturns as repeated rejections cause job seekers to exit the labour force (i.e. stop looking for work), which results in downward pressure on both the participation

rate and the actual unemployment rate. In contrast, when the economy enters the recovery phase, job prospects improve and some in the pool of 'hidden unemployed' re-commence their search for jobs, replacing hidden unemployment with actual unemployment.

The difference between cyclical and structural unemployment

Structural unemployment

Results from a mismatch between skills that unemployed persons have and the skills firms require.
The government seeks to reduce structural unemployment by instigating measures that improve the skills of those 'structurally unemployed'. These measures might include expenditure on education, work for dole scheme and/or subsidies to employ those who are long term unemployed (more than one year). To the extent that structural unemployment falls over time, it will result in the NAIRU falling, which means that the government can pursue a lower rate of unemployment before inflationary pressures become excessive or problematic.

Cyclical unemployment

Occurs as a result of fluctuations in the businesses cycle. For example during a contraction in the business cycle. The government seeks to lower via policy instruments is cyclical unemployment associated with weakness in the business cycle (economic cycle). This occurs when the economy is not operating at its full capacity due to deficiencies in AD (e.g. when an economy experiences an economic downturn, such as a recession).

Exam Tip: Question 3(ai) of the 2014 exam required students to explain the difference between cyclical and structural unemployment. Many students found it difficult to achieve full marks for this relatively simple question. The safest way to respond is to define the terms and then highlight a key point of difference. Remember that it is incorrect to define structural unemployment as unemployment caused by changes in technology. Changes in technology can cause structural unemployment (i.e. it is a cause) but structural unemployment can exist in the absence of changes in technology (e.g. if funding for TAFE falls and fewer persons are provided with the skills to work as electricians, then jobs are likely to exist but some people will remain unemployed as they lack the skills to fill these jobs).

Exam Tip: Question 3(aiii) of the 2014 exam required students to describe one example of a budgetary policy (BP) initiative that could be used to reduce the rate of structural unemployment. While BP will be examined more fully in Unit 4, it is worth highlighting the common errors made by students when answering a question of this kind. Examiners would be looking for a policy initiative that is designed to improve the employability of those 'structurally' unemployed (e.g. funding for skills training). It is insufficient to focus only on a policy initiative that works to increase the demand for labour (e.g. lower tax rates to encourage an increase in AD and real GDP).

The consequences of not achieving the goal of full employment and its effect on living standards, including the impact on GDP and tax revenue if unemployment is too high and the effects on inflation if unemployment is too low

Unemployment which is **too high** has undesirable consequences for society and the government is keen to limit both the level and rate of unemployment, particularly when people are unemployed for a prolonged period of time (e.g. those who have been unemployed for more than one year – i.e. the long term unemployed).

Consequences of high unemployment:

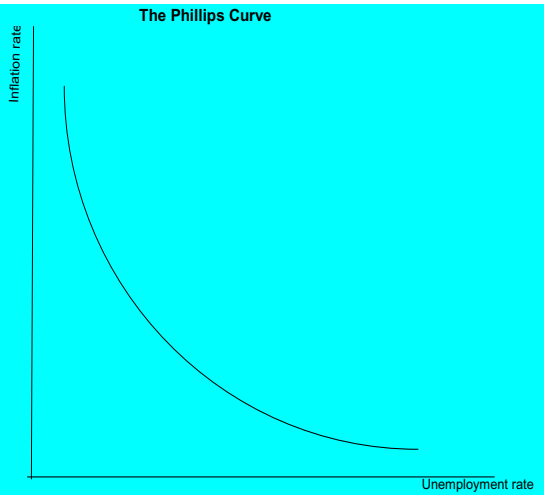
Loss of gross domestic product (GDP): Unemployment can make it more difficult to achieve strong rates of economic growth given that lower incomes negatively impact on spending, AD and real GDP. In addition, underutilised labour and/or structural unemployment) is likely to mean that the economy is not operating at its productive capacity, which means that potential GDP is not being achieved.

Loss of tax revenue: Higher unemployment rates will result in lower income tax revenue for the government. This means that it will have fewer funds to spend on a range of government provided goods and services that support Australian living standards (e.g. less spending on infrastructure or health) as well as spend more on welfare or income support which adds to the budget deficit (or smaller surplus) and comprises the ability of the government to support Australian standards of living more generally.

Consequences of low unemployment:

You should recall the NAIRU from above, which effectively the lowest rate of unemployment without putting excessive inflationary pressure on the economy.

Typically, when low rates of UE exist, we are likely to be experiencing high(er) inflation because economic growth is likely to be high (e.g. due to higher average incomes), which is typically associated with higher demand inflationary pressure (see discussion below). This relationship has been historically captured via the 'Phillips Curve' (see box below). However, it is possible for low rates of UE and low rates of inflation to co-exist if jobs growth and EG have been driven by supply side improvements to the economy (e.g. growth in productivity/efficiency). However, low rates of unemployment are likely to cause further increases in inflation because the increased incomes earned will contribute to stronger growth in spending and demand inflationary pressure. In addition, low rates of unemployment will tend to increase cost pressure for businesses as the tighter labour market leads to increased wages growth, labour costs and costs of production for businesses (contributing to cost inflationary pressure). However, it is important to note that once low inflation is achieved, it is likely to contribute to lower unemployment in the medium to longer term. This is because low inflation encourages growth in AD (see economic growth and low inflation), which stimulates economic growth, boosts the demand for labour, increases employment and reduces the UE rate.



This depicts the relatively short run relationship or trade-off that sometimes exists between inflation and unemployment. When inflation increases in response to pressures from a growing economy, it is usually associated with lower unemployment. Accordingly, government efforts to reduce unemployment with stimulation to AD typically results in inflationary pressure. Similarly, lower inflation that accompanies lower growth will usually be associated with higher unemployment as the low growth rates lead to job losses. Efforts by governments to reduce inflation via demand management tools typically jeopardise the achievement of Full Employment. Note that the Phillips curve cannot account for the existence of STAGFLATION, or periods of high EG and price stability which are driven by SUPPLY side pressures. (Continual efforts to exploit the 'trade off' result in a vertical long run Phillips curve, but this is beyond the scope of the VCE course)

Exam Tip: While the relationship between inflation and unemployment can be captured by the Phillips curve, it is the shape and location of the Phillips that ultimately determines the level at which NAIRU (non-accelerating inflation rate of unemployment) occurs. A relatively flat curve, for example, would suggest that the NAIRU occurs at a low level such that the government can attempt to aggressively reduce unemployment to very low levels without worrying about inflation becoming a problem. However, while this knowledge can help you to conceptualise the relationship between these key variables, you are extremely unlikely to be required to display this type of knowledge under the current study design.

Extension: other consequences

Greater income inequality: Unemployment can worsen income inequality and increase the incidence of poverty. More people will be relying on welfare, receiving government transfer payments instead of factor incomes, which means that the lowest income earners in society will be receiving a smaller share of the total income earned in Australia. In addition, more people are likely to be placed in a position where they will unable to afford the goods and services to give them a reasonably decent or dignified standard of living.

Reductions in living standards: Ultimately, unemployment typically reduces living standards on a number of levels.

- As people move from being employed to becoming unemployed, their income more than halves and they therefore have a reduced capacity to purchase goods and services. In this respect, unemployment reduces material living standards and diminishes the economic prosperity and welfare of Australians.

- Unemployment can also reduce the quality of life or non-material living standards of those becoming unemployed. These people could be faced with the stigma that is often associated with being unemployed and will also miss out on the many non-monetary benefits that employment brings. This includes an improved sense of connection to the community and a higher self-esteem or self-worth.
- Unemployment is also positively correlated with crime, social exclusion and homelessness, as well as an increased incidence of psychological harm and general ill health that is more common in those who are unemployed, particularly the long term unemployed. All of this has a negative impact on social cohesion.

Exam Tip: A key skill in the Study Design is the requirement for students to 'analyse economic relationships through the interpretation of data, graphical trends, patterns and other information'. A possible question could be one that directs students to analyse the relationship between the PR and UE rate from a chart similar to that presented on the previous page. Students should remember that the relationship between the PR and the U/E rate can work both ways. First, a rise in the U/E rate will tend to cause the PR to fall and vice versa. This is the most common way of examining the relationship between the two variables. Second, a rise in the PR over time can help to reduce the U/E rate and vice versa. This occurs because a higher PR should reflect a higher supply of labour (but not always!), which then exerts downward pressure on real wages (or real labour costs), which then helps to increase the demand for labour and employment, thereby helping to reduce the rate of U/E.

The relationship between economic growth, inflation and unemployment

The achievement of the government's respective macroeconomic goals involves efforts to boost economic growth, reduce inflation and minimise unemployment. There are important relationships between these variables that are worthy of consideration before exploring the aggregate demand and aggregate supply factors that have influenced economic growth, inflation, the unemployment rate and living standards over the past two years.

Exam Tip: The key skill to 'analyse economic relationships...' might require students to analyse the relationship between AD and AS factors and the achievement of government goals. However, it is possible that this also requires students to analyse the relationships between either the achievement of the goals or (more likely) the variables underpinning the goals (i.e. economic growth, inflation and unemployment). For example, it is not unreasonable to expect a question such as Q1a of the 2012 exam 'Explain the relationship between the economic goals of strong and sustainable economic growth and full employment' or 'Analyse the relationship between economic growth and inflation' or 'Analyse the relationship between inflation and unemployment'.

When analysing these types of relationships, it is useful to remember the following:

1. There is likely to be a **'coincident' relationship** – e.g. if inflation is low, what is likely to be happening to economic growth at the same point in time. This one is static – focusing on one point in time.
2. There is likely to be a **'causal' relationship** – e.g. if inflation is low how is this likely to affect economic growth? This one is forward looking.

Economic growth (EG) and unemployment (UE)

Strong rates of EG are likely to be associated with and cause a strong demand for labour and low(er) unemployment simply because more goods and services are being produced, requiring more resources (including labour) to produce them. However, if EG has been achieved primarily via an increase in productivity, this may result in little change in unemployment (i.e. 'jobless growth'). Analysing from the opposite direction, lower UE should cause a further increase in EG because higher employment levels create higher average incomes which increases AD and EG.

Economic growth and inflation

Strong rates of EG are likely to be associated with and cause high(er) inflation simply because high growth typically occurs alongside demand inflationary pressure, where strong levels of AD exert upward pressure on prices, particularly when the economy is operating close to productive capacity. This relationship will hold unless the high EG has been achieved by supply side improvements (e.g. growth in productivity) in which case high EG will exist alongside low inflation. This relates to the relationship going from low inflation to high economic growth. While low rates of inflation are typically associated with low rate of EG, low inflation rates are likely to cause an increase in EG in the medium to longer term because low inflation stimulates AD via an increase in C and I (e.g. greater purchasing power/confidence/certainty) and net exports (via an increase in our international competitiveness). This is why the Reserve Bank places an overriding emphasis on keeping inflation low.

Exam Tip: Q2c of the 2019 exam required students to explain the likely effect of a business cycle expansion on the rate of economic growth and on the rate of inflation. Part of the question actually required an explanation of how stronger economic growth related to inflation. While it was easy for students to identify that stronger rates of economic growth were likely to increase the rate of inflation, many students were unable to explore why this occurs (e.g. "Demand inflation" as stronger aggregate demand pushes into the steeper section of the aggregate supply curve, the economy gets closer to its productive capacity requiring higher prices to incentivise more supply).

Aggregate demand and aggregate supply factors that have affected the level of achievement or non- achievement of the goals of strong and sustainable economic growth, full employment and low and stable inflation over the past two years

Earlier in the Study Guide, under the heading *'Factors that may influence the level of AD and the impact on economic growth, employment and price levels'*, we examined how AD and AS factors affected the key macroeconomic variables (economic growth, employment and inflation) in a theoretical context. The emphasis in this section is, therefore, on the application of this theoretical knowledge, using the most recent statistics available. In addition, there will be the continuing provision of exam tips to steer students away from making costly errors in the examination.

The most recent statistics relating to economic growth, unemployment and inflation will be summarised in one chart. This will then be followed by a collection of charts from the RBA Charts pack (http://www.rba.gov.au/chart-pack). In the space provided, students will be required to use both the relevant RBA chart and the chart containing the macroeconomic goal variables to determine how each AD/AS factor has affected economic growth, unemployment and inflation over the past two years.

In October/November, students should download the latest available charts pack and substitute the charts presented below with the latest chart from Charts pack. Analysing any major differences will help to ensure that students are as up to date as possible when sitting the exam.

Exam Tip: The Study Design also requires students to examine the recent impact of AD and AS factors on living standards. The link to living standards is most easily made by remembering that (material) living standards will be strongly correlated to strong rates of economic growth, low rates of inflation and low rates of unemployment. So, if an examination question requires students to link an AD/AS factor to economic growth and living standards for example, the simplest approach is as follows. Link the relevant factor economic growth, then link economic growth to average incomes (e.g. real GDP per capita), and then link average incomes to material living standards. Of course, reference to employment/unemployment along the way will enhance the quality of a response, but the marks awarded to the question will be the most useful guide as to the length and depth of the response.

Note that the first AD factor (interest rates) has been completed (page 105) to provide students with an idea as to the required approach. But first, a few more general exam tips in relation to AD/AS factors and the impact on the key macroeconomic variables of inflation, economic growth and unemployment.

Exam Tip: Question 1b of the 2015 exam required students to describe how an increase in aggregate supply might contribute to an increase in the rate of economic growth. The easiest approach to this question was to equate 'an increase in aggregate supply' with 'growth in supply potential of the economy' or 'productive capacity'. It then becomes easier to establish a link to economic growth via the effects on aggregate prices (inflation). Otherwise, equating an increase in aggregate supply with 'an increase in the total goods and services supplied in the market' (which in itself is another way of saying that real GDP has increased), made it more difficult to unpack the causal relationship that was required.

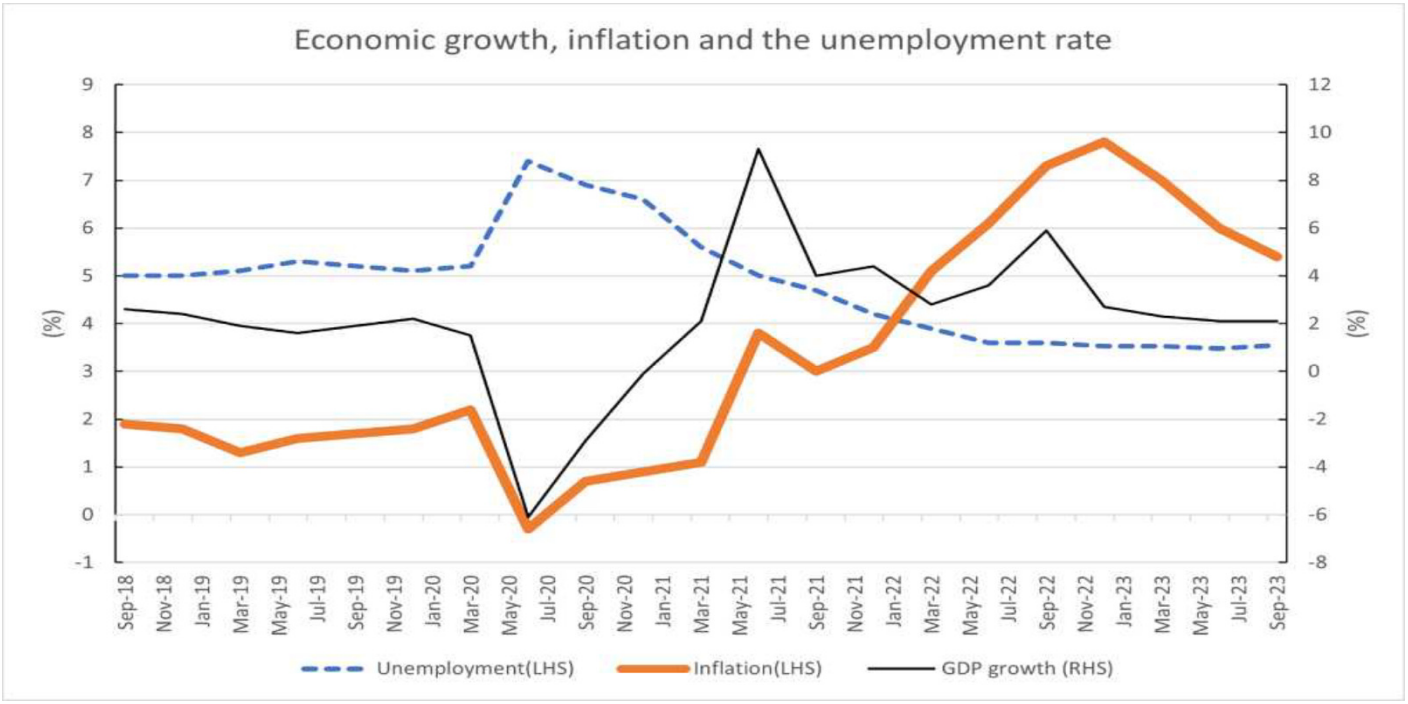
Exam Tip: In the exam, if you are asked to describe two influences that have added to inflationary pressures in the economy over the past year or two (which was a Q in the 2008 examination for 4 marks), it involves careful consideration of what you think the assessors will be looking for in responses. To respond by saying something like 'food prices rose over the past two years'. While it might be accurate, it is only scratching the surface. You need to describe why food prices rose (e.g. because of adverse climatic events, such as the floods and cyclone, or because of a lower AUD forcing up the prices of imported goods and services, including food). In other words, you should draw upon your knowledge of the demand and supply factors affecting the goals (in this case, low Inflation).

Exam Tip: Remember that students are only required to demonstrate an understanding of how factors have affected inflation, economic growth and unemployment over the last two years. It is possible that charts will be provided in the examination that contain time series data going well beyond the last two years. If so, the exam setting panel will be testing a key skill from the Study Design (*interpret and analyse data, graphical trends, patterns and other information'*. Accordingly, the charts below contain data going back beyond the last two to three years but students should pay particular attention to how the AD/AS factor influenced EG, inflation or UE over the past two years.

Exam Tip: As noted in a previous exam tip, Question 1b of the 2021 required an explanation for why unemployment fell over 2021, making reference to one AD and one AS factor. The best performing students were those who clearly referenced a relevant AD factor (e.g. higher Consumer confidence or a lower AUD) and a relevant AS factor (such as a lower participation rate or lower costs of production), rather than identifying a (relevant) reason, such as the operation of additional stimulus measures delivered in the May Budget. If wanting to reference the measures announced in the Budget, then it is necessary to create a link back to an AD factor, such as higher disposable income or increased confidence levels.

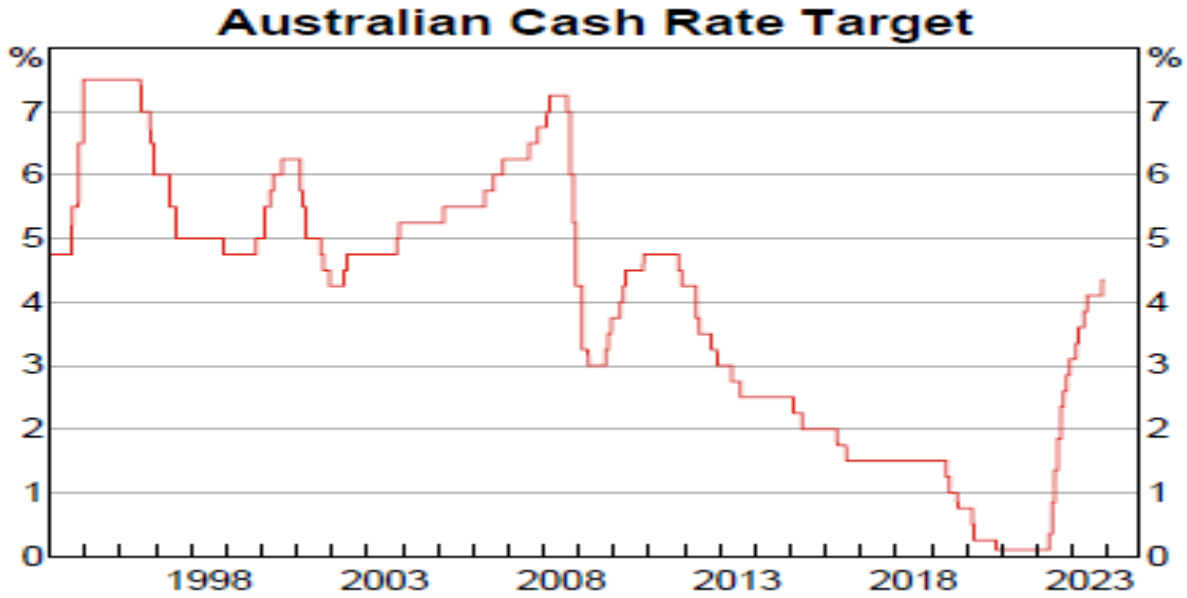
Exam Tip: The 2017 exam asked students to explain one economic factor that might have influenced the goal of low inflation in 2016/17. Students needed to provide a plausible/relevant explanation of a factor influencing inflation, rather than a hypothetical one. For example, reference to relatively weak consumer confidence (keeping spending low) or low wages growth (acting as a constraint on spending and reducing demand/cost pressures) would be acceptable. In contrast, reference to examples such as 'higher unemployment' (reducing incomes and hence demand pressures) or a 'falling exchange rate' (adding import costs and price rises) were unlikely to gain full marks because the unemployment rate actually fell and the exchange rate rose on average over the relevant time period. Ideally students needed to link the economic factor to demand and/or cost inflation.

The key statistics relating to the movement in economic growth, inflation and the unemployment rate are contained in the chart below.



TASK: Students should attempt to establish a connection between the AD and AS factors described below and the movement in the key variables in the above charts. This should involve a revision of the theory covered earlier in this Study Guide and the application of this knowledge to uncover how the factors depicted in the charts (below) will have contributed to the movement in economic growth, inflation and the unemployment rate over the past couple of years. Towards the end of 2023, students should download the latest 'Chart Pack' from the RBA's website [https://www.rba.gov.au/chart-pack/] and re-establish the links between the factors and the goal variables in preparatIon for the examination in November.

INTEREST RATES



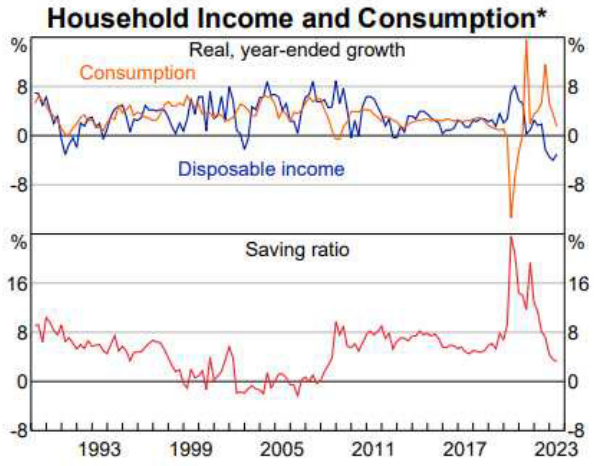
The higher interest rates over 2022 and 2023 (e.g. the cash rate increasing from below close to 0% to over 4.35%) has helped to exert downward pressure on economic growth (evidenced by real GDP slowing from around 5.9% in 2022 to 2.1% in 2023). This is largely because the increase in interest rates both reduces the propensity (incentive) to spend and increases the propensity (incentive) to save. [Although the existence of savings and many household using 'fixed interest rates' slowed this process over 2022 and early 2023]. In addition, economic agents with existing debt will have experienced a decrease in cash flow or discretionary income to the extent that debt servicing costs increases on variable rate loans. A large percentage of Australian households have variable loans which means their interest rate changes in line with market interest rates (influenced by the RBA). The combined effect is to slow the demand for household products (i.e. decrease Consumption) and business capital (i.e. decreased Investment), reducing growth in AD and ***real GDP (economic growth).***

These interest rate changes should eventually flow through to the labour market with an expected slowdown in the demand for labour, as businesses require less (labour) resources to produce goods and services. The combined effect of a decrease in AD and higher unemployment rates will help to reduce the ***rate of inflation*** throughout 2024 (with headline inflation still above 5% in September 2023). While some of the inflation is attributed to supply-side impacts, the growth in price pressures also occurred because stronger growth in the demand for goods and services led to a faster depletion of stocks and a reduction in spare capacity, providing businesses with some opportunity to raise prices. In addition, the reduction in spare capacity in labour markets also exerted upward pressure on wage costs, which further added to inflationary pressure. There are signs that demand (particularly from households) has slowed significantly over 2023 as households with fixed interest rate loans were rolled over to variable rate loans and the savings built up over 2020 were depleted. The RBA hopes this will continue over 2024 bringing inflation back towards their target band of 2-3%.

Exam Tip: Student should be careful when analysing the demand and supply side effects of interest rate changes. When interest rates rise, the cost of borrowing increases, adding to the costs of production and increasing inflationary pressure. However, interest rates primarily affect inflation on the demand side. Hence, while high interest rates actually increase inflationary pressure in the short term via the boost to production costs, they reduce inflation via the negative impact on AD over time as well as the immediate effect on inflationary expectations (i.e. to reduce them). Students must remember that the demand side impact always outweighs the supply side factor when there is a change in interest rates. This means that higher interest rates reduce inflationary pressure over time and lower interest rates increase inflationary pressure.

Exam Tip: If the exam asks you to choose a number of demand factors that affect economic activity (or government goals) and you can't remember them, it might be useful for you to break up AD into its components and then try to remember some of the factors affecting each individual component. For example, ask yourself what affects Consumption? What affects Investment? What affects Exports? Once you do this, you should be able to arrive at a couple of factors for each.

DISPOSABLE INCOME

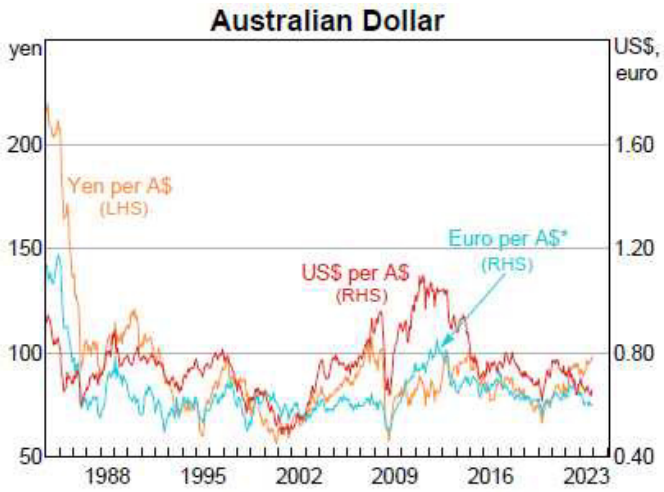


* Household sector includes unincorporated enterprises; disposable income is after tax and interest payments; saving ratio is net of depreciation.

Sources: ABS; RBA.

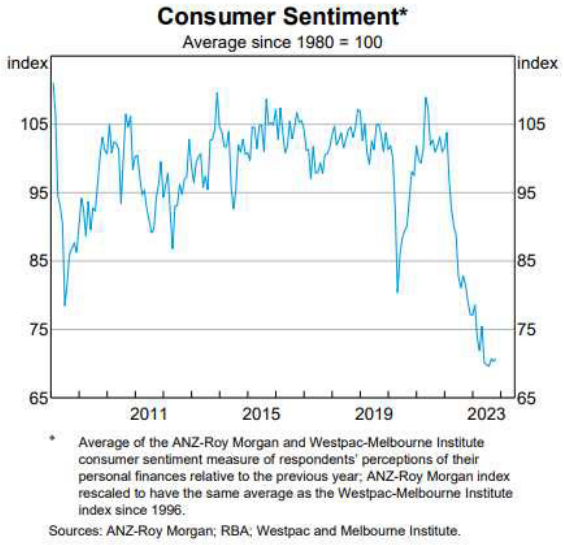
Exam Tip: Students might note the implications of a falling savings ratio in the context of changes in Consumption expenditure. Despite the lower growth in disposable income, growth in household consumption increased because households saved relatively less (and therefore spent relatively more). While the savings ratio is not specifically listed in the Study Design, it is not impossible for reference to the household savings ratio (and its implications) to be made in the exam.

EXCHANGE RATE



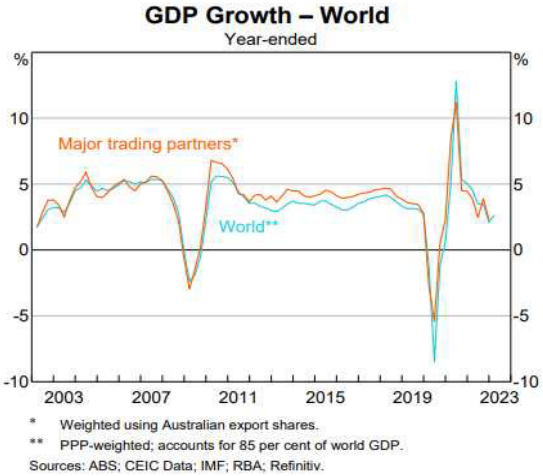
Exam Tip: When students are asked to demonstrate an understanding of how a fall in the exchange rate/AUD impacts on the inflation rate, they typically become confused because they have learned that a lower AUD boosts competitiveness by making 'exports cheaper…..' They then go on to say that this helps to reduce inflation because of lower export prices. It is important to remember that export prices are not a part of the CPI and that a lower AUD actually causes both demand and cost inflationary pressures!

CONSUMER CONFIDENCE

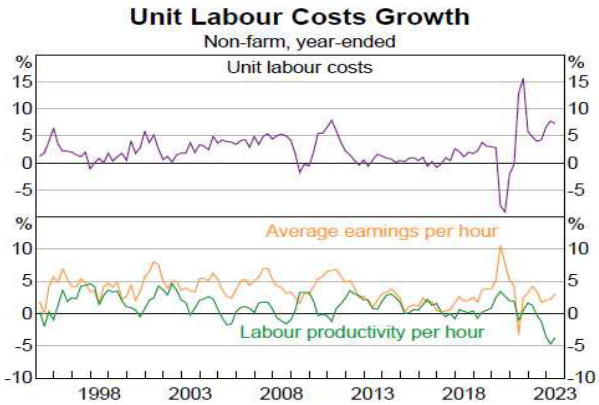


Exam Tip: Students should take care not to make the mistake of misinterpreting movements in charts. In the Consumer Confidence chart above, it is tempting to conclude that consumer confidence was low in the middle of 2016 and again in 2019, as the index fell from approximately 105 to just above 100. However, while the index did indeed fall during these times, consumer confidence is only low when the index falls below 100. This means that consumer confidence was positive as, on balance, more consumers felt confident about the future compared to those who felt pessimistic. In an exam, to say that confidence is low is incorrect and would undermine the quality of an exam answer.

OVERSEAS GROWTH RATES



PRODUCTIVITY AND LABOUR COSTS

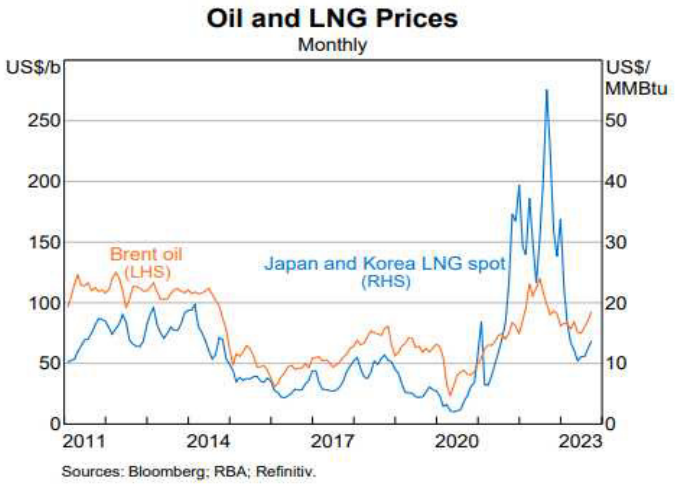


Exam Tip: With AS factors in general, it is typical for students to argue that reduced production costs causes suppliers to increase their 'willingness to supply' and therefore boost economic growth. While this is broadly accurate, it makes no mention of the role of 'prices' and therefore AD in causing economic activity to change. Despite AD being affected, it is still a 'supply factor'. This is how supply side policies actually work to stimulate economic activity – an increase in AD is important.

Exam Tip: A difficult exam qestion in the past (6 marks in 2012) required students to explain how slower rates of productivity growth affect living standards and how this effect might be hidden by a stronger terms of trade as well as population growth. First, students needed to explain why slower productivity growth tended to negatively impact on living standards, which should have been relatively easy if students focused on material living standards. The really tricky part was to explain how growth in the population and the TOT could hide this impact. The growth in both of these variables (even up until 2019-20) tended to increase economic growth to rates that were high by international standards, giving the impression that 'all is good' with the Australian economy. Making this point and explaining how growth in these variables works to increase economic growth is the key to achieving full marks for this difficult question.

Exam Tip: Notice that labour costs have not been discussed in terms of the possible 'demand' side impact via income (e.g. wages) of employees. This is because changes in labour costs do not always result in an increase in income for workers (e.g. if there is an increase in workers compensation insurance, it will increase labour costs but not income of workers) and will not have direct demand side implications.

PRODUCTION COSTS MORE GENERALLY [EXAMPLE]



Exam Tip: When asked to discuss the effects of a 'supply factor' students should be aware that most supply side effects are eventually felt through a change in the costs of production. Accordingly, you should attempt to provide a unique explanation for how and why the supply factor affects production costs, but the explanation from that point is typically generic in terms of the effects on economic activity or the government's goals. For example, a rise in productivity and a fall in labour costs will have identical explanations once it is identified that production costs are reduced.

CLIMATIC EVENTS

In the space below, provide detail of recent climatic events that have impacted on the Australian economy over the past couple of years. Typically, they will be events referred to as 'natural disasters', including the ongoing drought affecting parts of eastern Australia, as well as bushfires, storms and floods that frequently have negative supply side effects on the economy adding to inflation, worsening competitiveness and economic growth and causing unemployment to increase in those industries negatively affected. [However, this is partially offset by the employment gains required in the reconstruction effort following a natural disaster such as a flood, cyclone or bushfire.]

Exam Tip: Q2(d) of the 2011 exam required students to outline the likely effect of the flooding on AD and AS. Students should not make the mistake to focus solely on the microeconomic impact on particular markets. For example, outlining that it caused banana supplies to fall, which then caused a reduction in the demand for bananas. Instead, students need to outline the 'net' effect on AD and AS. For example, AS was negatively affected due to damaged infrastructure and business facilities and AD fell in the short term before picking up via the reconstruction effort…..

Exam Tip: When choosing demand (or supply) factors that affect economic growth or another goal, DO NOT: use components of AD as your factors. E.g. saying consumption expenditure (C) or Export Demand (X) are factors that can increase economic growth. You must choose the particular factors that cause C or X to increase (e.g. rising consumer confidence or a drop in the AUD.

The Russian invasion of Ukraine

In February 2022 Russia's invasion of Ukraine caused a global supply shock in oil and gas markets. Both commodities are abundant in Russia and are essential to global economic activity and stability. Oil and natural gas are inputs in the production of a wide variety of goods and services. Oil is mostly refined to make fuel like unleaded petrol which is important in the production of almost any good or service imaginable (we have already discussed the rise in petrol prices above). Gas is used for heating and to generate electricity. A major gas pipeline between Russia and Germany was effectively cut off in 2022, sending shockwaves through global energy markets. As a substitute to gas fired power, Germany has been forced to reopen 'mothballed' coal fired power plants causing the price of coal rise to its highest price on record. Perversely, Australian coal miners and some state governments (via royalties) have benefited greatly from this energy crisis.

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Exam Tip: in the 2021, 2022, and 2023 economics exams, students were required to recall one AD and one AS factor influencing the economy over the past two years. Whilst many students were able to identify relevant factors in theory, in order to achieve full marks students needed to reference a contemporary factor (e.g. they needed to identify the correct trend occurring in the Australian economy over the period). These questions highlight the importance of students understanding the trends in current AD and AS factors and their impact on the achievement of Australia's three macroeconomics goals.

AD and AS factors and the effects on living standards

When determining how each of the AD and AS factors have impacted on living standards over the past two years, it is necessary to recall the significance of the government's domestic macroeconomic goals. When discussing these earlier in the Study Guide, it was clear that living standards would be enhanced if we could achieve:

- Strong (but sustainable) rates of economic growth
- Low and stable rates of inflation (price stability)
- Low rates of unemployment (full employment)

Of course, this means that living standards are likely to deteriorate if the rate of economic growth is too low and both the rates of inflation and unemployment are too high.

REVIEW/APPLICATION QUESTIONS 6A – domestic macroeconomic goals/factors affecting

1. ***Explain what is meant by the government's goal to achieve 'strong and sustainable rates of economic growth.'***
2. ***Explain why the government pursues a relatively strong rate of economic growth.***
3. ***Outline the three possible problems that can arise from 'unstainable' growth***
4. ***Outline one possible problem that can arise from growth which is too low***
5. ***Discuss how an over-reliance on carbon emitting energy may impact on future rates of economic growth.***
6. ***Discuss how an over-reliance on renewable energy may impact on current rates of economic growth.***
7. ***Define GDP and explain what it attempts to measure in the economy.***
8. ***Distinguish nominal GDP from real GDP and describe the measure used by the ABS to determine levels of real GDP in Australia***
9. ***Using a calculator and the data below, calculate the (i) annual rate of growth from Sep-22 to Sep-23 (ii) quarterly rate of growth between Dec-22 and Mar-23 (iii) total annual production in ($) terms (from Jun-22 to Jun-23)***

Quarter	Jun-22	Sep-22	Dec-22	Mar-23	Jun-23	Sep-23
GDP ($B)	$594.0	$595.3	$600.3	$603.5	$606.2	$607.5

10. ***Distinguish an 'annualised' growth rate from an annual growth rate and outline how it is possible for annualised rate of economic growth to be -2.0% when the annual rate of economic growth is 2%.***
11. ***Distinguish 'negative growth' from a 'recession' and indicate whether Australia has experienced either over recent years.***
12. ***Define what is meant by the government's goals for ''low and stable inflation.'***
13. ***Explain why an inflation rate of zero is not the target of the government.***
14. ***Outline two reasons why a relatively high rate of inflation can negatively impact on living standards.***
15. ***Outline two reasons why a relatively low rate of inflation can negatively impact on living standards.***
16. ***Using a calculator and the data below, calculate the (i) annual inflation rate between Sep 22 – Sept 23, Jun 22 – Jun 23 & Mar 22-Mar 23 (ii) quarterly inflation rate for, Mar-23, Jun-23, Sep-23 (iii) annualised rate of inflation for the Sep-23 quarter***

Quarter	Sep-21	Dec-21	Mar-22	Jun-22	Sep-22	Dec-22	Mar-23	Jun-23	Sep-23
CPI Index	119.7	121.3	123.9	126.1	128.4	130.8	132.6	133.7	135.3

17. ***Distinguish the following terms and give an example of each: inflation, deflation and disinflation.***
18. ***Explain how the ABS calculates the inflation rate for Australia.***
19. ***Distinguish the CPI headline rate of inflation from the underlying rate of inflation.***
20. ***Provide one possible explanation for the increase in petrol prices over 2022 and examine how this impacted on headline and underlying inflation.***
21. ***Explain how it is possible for some prices to fall when inflation is rising.***
22. ***Discuss how floods and cyclones typically impact on both headline and underlying rates of inflation.***
23. ***Identify and account for the differences between the headline and underlying rate of inflation over the past two years.***
24. ***Distinguish cost inflationary pressure from demand inflationary pressure.***
25. ***Outline and explain one cost inflationary pressure and once demand inflationary pressure over the past 2 years.***
26. ***Define inflationary expectations and explain how they can contribute to actual inflation.***
27. ***Explain why high rates of inflation can have negative consequences in the economy.***
28. ***Define what is meant by the government's goal of full employment.***
29. ***Define 'unemployment' and 'labour force' according to ABS' definitions.***
30. ***Explain what is meant by the non-accelerating inflation rate of unemployment (NAIRU).***
31. ***Predict what is likely to occur in the economy if the government attempts to reduce unemployment to below NAIRU levels.***
32. ***Describe one factor that might explain why the RBA and Treasury have decreased the NAIRU estimate to around 4%.***
33. ***Distinguish structural from cyclical unemployment.***
34. ***Define frictional unemployment and outline which part of the business cycle it is most likely to occur***
35. ***Describe two benefits of achieving full employment.***
36. ***Distinguish hidden unemployment from underemployment***
37. ***Define the labour force underutilisation rate.***
38. ***Explain why higher levels of underemployment make unemployment a less meaningful indicator of spare capacity existing in the economy.***
39. ***Explain how the casualisation of the labour force has affected the unemployment, underemployment and underutilisation rates.***
40. ***Discuss two negative consequences associated with high rates of unemployment.***
41. ***Define long term unemployment and provide a likely reason for long term unemployment climbing over recent years.***
42. ***Analyse how an increase in the participation rate might affect the unemployment rate.***
43. ***Analyse how a rise in the unemployment rate might affect the participation rate.***
44. ***Explain how an increased rate of retirement from the labour force from might affect both the unemployment and participation rates.***
45. ***During a recession, explain why the rate of growth in underemployment rate might exceed the rate of growth in the unemployment rate.***
46. ***Explain how an economic recovery is likely to affect the unemployment rate differently to the underemployment rate.***
47. ***For the following real labour force statistics, calculate (a) – (d) below and outline how each of these rates are likely to change in the future given that Australia is experiencing an ageing population.***

(a) Unemployment rate, (b) Participation rate, (c) Underemployment rate and (d) Underutilisation rate

Hypothetical labour force statistics	
Underemployed persons	***2,000,000***
Employed Persons	***9,000,000***
Unemployed Persons	***1,000,000***
Working age population	***20,000,000***

48. ***Identify and explain two AD factors that have supported economic growth and exerted downward pressure on the unemployment rate over the past two years.***
49. ***Identify and explain two AS factors that have supported economic growth and exerted downward pressure on the unemployment rate over the past two years.***

50. Identify and explain two AD factors that have helped to reduce inflation over the past two years.

51. Identify and explain two AS factors that have helped to reduce inflation over the past two years.

52. Select three of the factors identified in question 40-43 above and explain how each has influenced Australian living standards over the past two years.

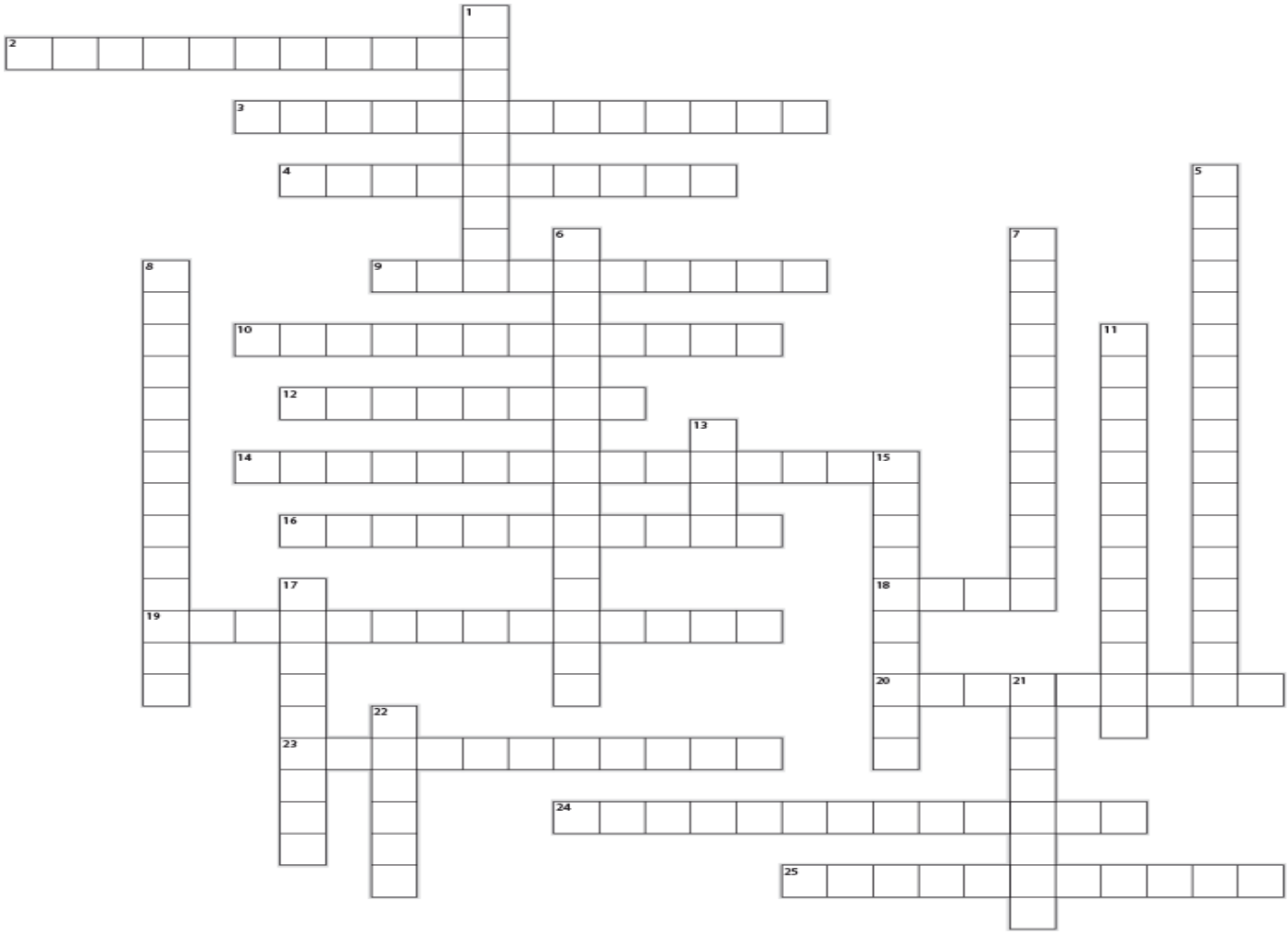
Quick revision crossword No 6
Domestic macroeconomic goals

Across

2. The employed and unemployed combined (2 words)
3. What has been happening to the labour force over time, which has made the unemployment rate a less meaningful indicator of the strength of the labour market
4. A common type of unemployment that will always exist in a dynamic economy
9. Levels of this for both consumers and producers tends to plummet during a recession
10. An increase in this AS factor will exert downward pressure on inflation
12. When this rate falls, it helps to improve growth and employment but will increase inflation
14. Lower inflation improves this for our tradables sector (i.e. exporters and import competing businesses)
16. Growth that does not contain this important characteristic will tend to erode living standards over time
18. This type of inflation is caused by the AS curve shifting to the left
19. An increase in the real level of production over time (2 words)
20. This variable falls when inflation occurs, making workers worse off (2 words)
23. The RBA measure of core (or underlying) inflation that focuses on the price changes for bulk of items in the CPI, but excluding those price changes that make up the top and bottom 15% (2 words)
24. When these change, there are both demand and supply effects, but the demand side is always stronger (2 words)
25. An increase in these will tend to increase inflationary pressure. An example of an AS factor affecting inflation (2 words)

Down

1. When the inflation rate is negative
5. The labour supply as a percentage of the potential labour supply (2 words)
6. The ultimate objective of governments that will be enhanced if all of the economic objectives are achieved (2 words)
7. The key statistic underpinning the full employment goal
8. That level of unemployment that exists when the government's economic growth goal is achieved and consistent with an unemployment rate of approximately 4.5% (2 words)
11. These considerations are crucial if we are to achieve sustainable rates of growth
13. The chain volume measure of GDP attempts to convert nominal GDP into _____ GDP
15. type of unemployment occurs when the skills of the unemployed do not match the skills required by industry
17. A sustained increase in the general or average price level
21. That type of unemployment that endures for more than 52 weeks (2 words)
22. A particular type of unemployment that occurs when people who are not members of the labour force, would actually prefer to be working, but are not actively seeking employment



UNIT 3 MINI EXAM NO. 2
AREA OF STUDY 2
Total marks = 40

Section A

Multiple choice (total marks = 10)

Section B

Short answer questions (total marks = 30)

Section A: multiple choice (10 MARKS)

1. The unemployment rate is calculated as the number of

(a) unemployed persons divided by number of employed persons
(b) The sum of all those people receiving job search allowance (i.e. unemployment benefits)
(c) The total number of people unemployed as a percentage of the labour force
(d) All those people in the country over 15 that do not have a job

2. The participation rate will fall if

(a) child care costs are increased
(b) the superannuation returns reach record high levels for a 5th consecutive year
(c) more workers move from full-time to part-time hours
(d) there is a large fall in the unemployment rate

3. Increases in aggregate demand in the economy

(a) always lead to demand inflation
(b) never lead to demand inflation
(c) cause demand inflation at or near full employment (productive capacity)
(d) cause demand inflation regardless of whether the economy is in a Boom or recession

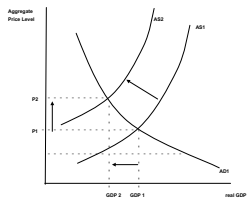
4 A reduction in the inflation rate is regarded as desirable because

(a) imports will be more competitive against domestic industry
(b) business confidence and investment is likely to be improved
(c) inflationary expectations are likely to be higher
(d) exporters will be less competitive

5. The bushfires that occurred across Queensland in 2023 are most likely to

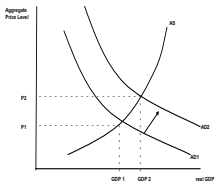
(a) increase economic growth and reduce inflation in the long term
(b) reduce economic growth and increase inflation in the long term
(c) increase economic growth and reduce inflation in the short term
(d) reduce economic growth and increase inflation in the short term

6. A change in inflation, as illustrated in the above AD/AS diagram may:



(a) have been caused by an increase in consumer confidence
(b) be the result of higher disposable income levels of consumers
(c) have been due to an increase in government expenditure
(d) have been the result of a decrease in productivity

7. A change in economic growth, as illustrated in the AD/AS diagram (below) is most likely to be a result of:



(a) an appreciation of the AUD
(b) a decrease in personal income taxes
(c) lower oil prices since 2014
(d) an increase in productivity

8. Economic growth is best defined as an increase in

(a) the value of output measured in US dollar terms
(b) the value of output measured in nominal dollar terms
(c) the value of output measured in constant dollar terms
(d) the value of output measured in current dollar terms

9. **Which of the following is most likely to provide the best indicator of changes of living standards in Australia?**

(a) changes in real GDP
(b) changes in real GDP per capita
(c) changes in inflation
(d) changes unemployment

10. **Which of the following is most likely to reduce the labour force participation rate?**

(a) an increase in the level of total employment
(b) a decrease in the number of 15-24 year olds undertaking full-time education
(c) an increase in the unemployment rate
(d) an increase in the number of job vacancies

PART B: STRUCTURED QUESTIONS (30 marks)

Question 1 (14 marks)
The Australian Federal Government seeks to achieve a number of economic goals.

(a) Explain what is meant by the government's price stability goal. (3 marks)
(b) Explain what is meant by the goal of strong and sustainable rate of economic growth. (3 marks)
(c) Explain how an increase in economic growth might have a limited impact on overall living standards. (4 marks)
(d) Explain why a fall in economic growth might not cause an increase in the unemployment rate. In your answer, refer to underemployment and the underutilisation rates. (4 marks)

Question 2 (8 marks)
Changes interest rates will have an impact on all of the government's economic goals.

(a) Explain how a rise in interest rates might affect the rate of inflation. Ensure that you explore both the demand and supply side impact. (4 marks)

(b) Explain how a fall in interest rates is likely to affect the government's goal of Full employment. Ensure that you explore both the demand and supply side impact. (4 marks)

Question 3 (8 marks)
'Productivity growth in Australia has been an important factor assisting the Australian government in it attempts to achieve its economic goals.'

a) Explain how an increase in the rate of productivity is likely to impact on low inflation. (4 marks)
b) Explain how an increase in the rate of productivity is likely to impact on full employment (4 marks)

YOU BE THE ASSESSOR: UNIT 3 AOS 2

In this section, you are required to assess the responses presented for each of the questions. You should award the responses a score (either full marks or less than full marks) and justify your decision. Once complete, compare your assessment to that of the authors [provided at the rear of the Study Guide].

1. Explain how relatively low wage growth can influence the achievement of full employment. 4 marks

Sample 1

Relatively low growth in wages will reduce the costs of production and the rate of inflation, which in turn increases Australia's international competitiveness and lifts aggregate demand (AD). This will result in the AD shifting to the right, leading to an increase in real GDP and economic growth. With greater levels of national output, businesses will require more labour which adds to employment and reduces the rate of unemployment. This means that the government is more likely to be successful in achieving its full employment goal.

Justification_____

_____

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_____

Sample 2

Relatively low growth in wages helps to stimulate economic growth and contributes to the achievement of full employment, which occurs when the economy experiences the lowest unemployment rate possible before inflationary pressures become unmanageable (or the NAIRU rate of approximately 5% unemployment). This is because low growth in wages helps to contain labour costs and decreases pressure on the costs of production. Businesses will then be more willing to increase investment and expand capacity, which helps to boost production levels. This should lead to an increase in the demand for labour, raise employment levels and decrease the rate of unemployment towards the full employment level. In addition, the lower price of labour provides an incentive for businesses to demand more labour relative to capital (an expansion along the demand curve in labour markets) which has an additional favourable impact on both jobs growth and the rate of unemployment.

Justification_____

_____

_____

_____

2. Outline why long-term unemployment increased in Australia up to 2021. 2 marks

Sample 1

This has occurred because of technological change in the economy which has altered the structure of Australian industries and increased reliance on capital relative to labour. This has resulted in higher levels of structural unemployment, with many of those structurally unemployed remaining so for more than one year.

Justification_____

_____

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_____

Sample 2

A decrease in consumer confidence over recent years has had a negative effect on Australia's unemployment rate. As consumer confidence falls, the demand for goods and services in Australia decreases, meaning that firms become less willing and able to supply, shifting the nation's aggregate supply curve to the left. This results in higher costs of production and prices, which causes producers to decrease their demand for labour and increasing the rate of long term unemployment

Justification_____

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_____

3. Describe one cause and one effect of a low rate of inflation up to the start of 2022. 4 marks

Sample 1
A low rate of inflation was caused by the slower rates of economic growth experienced by the USA, Europe and China. This led to slower growth in export demand and deflation in Australia. These lower prices meant that the purchasing power of consumers or households improved, such that material living standards of Australian households will increase.

Justification_____

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Sample 2
The relatively low rate of inflation was caused by a number of factors, including the slower rates of economic growth experienced by Australia's trading partners. Slower growth in the USA, Europe and China has reduced export demand and demand inflationary pressures in Australia. Slower growth in export demand means that Australian exporting businesses experienced a reduction in sales, which led to excess capacity which, in itself, eased pressure on prices. In addition, slower growth in export volumes or production meant that exporters experienced a fall in incomes and profits, which resulted in lower returns to its factors of production, such as lower dividends for shareholders and lower wages for workers. This further reduced demand inflationary pressures in the economy and contributed to the very low rates of inflation experienced in Australia. This brings many benefits for the Australian economy, not least of which is the beneficial effect on international competitiveness and the longer run benefits this brings for Australia's balance of payments, economic growth and living standards. Lower prices means that net exports and AD more generally should eventually rebound, resulting in a lower CAD as well as a higher level of AD and real GDP. Stronger growth in real GDP should therefore help to create employment and incomes, and ultimately boost material living standards over time as Australian households will have the ability to purchase more goods and services.

Justification_____

_____

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_____

4. Explain how an increase in aggregate supply might contribute to an increase in the rate of economic growth. 2 marks

Sample 1
An increase in aggregate supply (AS) means that producers are more willing and able to produce goods and services. It usually occurs as a result of improved supply conditions and effectively leads to an increase in productive capacity. The increase in AS exerts downward pressure on prices (or inflation), as businesses experience excess supply and discount prices to clear surplus stock. This in turn stimulates AD and leads to an increase in real GDP (economic growth).

Justification_____

_____

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Sample 2
If there is an increase in aggregate supply (AS) it means that more goods and services will be produced per unit of output (greater productivity) which means that producers will be more willing to raise output (i.e. an increased willingness to supply). This will result in higher output levels across the economy. Given that output equates to real GDP, growth in output by producers means that real GDP increases, which means that economic growth has increased.

Justification_____

_____

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_____

5. Explain how growth in both productivity and the participation rate can lead to an increase real GDP. 4 marks

Sample 1
Growth in productivity effectively means that the nation is producing more goods and services per labour hour employed and highlights that efficiency has increased. This contributes to disinflation in the economy, which in turn stimulates AD and economic growth. The **participation rate (PR)** refers to the degree to which people are participating in the labour force and, when it increases, it means that businesses will have access to more labour, enabling more output to be produced. This increases the rate of growth in production as measured by real GDP.

Justification_____

_____

_____

_____

Sample 2
Growth in productivity effectively means that the nation is producing more goods and services from any given volume of inputs, such as labour and capital, and indicates that Australia is more (technically) efficient in the way it produces goods and services. This helps to contain costs of production and allows businesses to reduce prices without impacting on profit margins. These lower prices encourage growth in AD (e.g. growth in Consumption and net exports) which stimulates the rate of growth in production (i.e real GDP). To the extent that lower production costs result in higher profit margins, this facilitates an increase in Investment demand, further boosting AD and real GDP over time. The **participation rate (PR)** refers to the size of the labour force as a percentage of the working age population. A higher participation rate (e.g. via government efforts to entice more mothers back into the workforce) will effectively increase the supply of labour and exert downward pressure on wages (or labour costs). This helps to contain (or reduce) costs of production and inflation, which stimulates growth in AD and lifts the rate of growth in production (i.e real GDP). In addition, the higher PR helps to protect tax revenue and further encourages growth in Investment and AD]

Justification_____

_____

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YOU BE THE ASSESSOR: CORRECTIONS AND ANALYSIS (U3 AOS 2)

1. Explain how relatively low wage growth can influence the achievement of full employment. 4 marks

While it is true that low wages growth 'can' reduce the effective costs of production and inflation, much more is required from the student on how this occurs. Instead, the student launches into a demand side explanation without consideration of the 'supply side' impact.

Sample 1

Sample answer: Relatively low growth in wages will reduce the costs of production and the rate of inflation, which in turn increases Australia's international competitiveness and lifts aggregate demand (AD). This will result in the AD shifting to the right, leading to an increase in real GDP and economic growth. With greater levels of national output, businesses will require more labour which adds to employment and reduces the rate of unemployment. This means that the government is more likely to be successful in achieving its full employment goal.

Student has not demonstrated an understanding of the FE goal, which is a key part of the question

Student effectively 'signposts' their response (let's the assessor know how where the response is heading

Student demonstrates an understanding of the FE goal. Reference to NAIRU not required but adds value to the quality of the response

Sample 2

Sample answer: Relatively low growth in wages helps to stimulate economic growth and contributes to the achievement of full employment, which occurs when the economy experiences the lowest unemployment rate possible before inflationary pressures become unmanageable (or the NAIRU rate of approximately 5% unemployment). This is because low growth in wages helps to contain labour costs and decreases pressure on the costs of production. Businesses will then be more willing to increase investment and expand capacity, which helps to boost production levels. This should lead to an increase in the demand for labour, raise employment levels and decrease the rate of unemployment towards the full employment level. In addition, the lower price of labour provides an incentive for businesses to demand more labour relative to capital (an expansion along the demand curve in labour markets) which has an additional favourable impact on both jobs growth and the rate of unemployment.

Final sentence adds value and leaves the assessor in no doubt that the student understands how low wages growth helps to create more jobs

An effective supply side explanation is required for how lower wages growth (as a supply factor) can reduce the UE rate.

Analysis (Sample 2 full marks)

Overall, Sample 1 lacks sufficient depth. While it highlights that the student understands the direction of the relationship, it leaves the assessor in some doubt as to the student's knowledge of the key links. It also makes the common mistake of not addressing a key part of the question, which is to move beyond an explanation of the impact on unemployment (or the unemployment rate) and to consider the implications for the achievement of the government's goal. Demonstrating an understanding of the goal, when it is referenced in the question, is important. Sample 2 is superior because it addresses all parts of the question and clearly demonstrates an understanding of the necessary links. Note that this student should still receive full marks even without reference to lower inflation and improved international competitiveness, which will occur (ceteris paribus) when the costs of production fall and the AS curve shifts to the right. Reference to inflation and international competitiveness provide an alternative avenue of answering the question successfully (providing the necessary supply side links are established).

2. Outline why long-term unemployment increased in Australia up to 2021. 2 marks

Clear identification of one cause of LT UE

Accurate outline of how the factor impacts on the demand for labour and LT UE

Sample 1

This has occurred because of technological change in the economy which has altered the structure of Australian industries and increased reliance on capital relative to labour. This has resulted in higher levels of structural unemployment, with many of those structurally unemployed remaining so for more than one year.

Demonstrates understanding of LT UE as distinct from UE more generally

Poor choice of factor as it relates more to cyclical UE

No attempt to link to LT UE

Sample 2

A decrease in consumer confidence over recent years has had a negative effect on Australia's unemployment rate. As consumer confidence falls, the demand for goods and services in Australia decreases, meaning that firms become less willing and able to supply, shifting the nation's aggregate supply curve to the left. This results in higher costs of production and prices, which causes producers to decrease their demand for labour and increasing the rate of long term unemployment.

Deficient explanation for how lower CC affects UE . The student should instead choose the AD route rather than the AS route

Despite mentioning LT UE, there is no outline for why this increases as distinct from UE more generally

Analysis (Sample 1 full marks)

Despite being the briefer response, Sample 1 is superior because it focuses on a key cause of higher long term unemployment (technological change/structural unemployment) and demonstrates a clear understanding of what is meant by long term unemployment (i.e. being unemployed for more than one year). Sample 2 focuses on a factor causing a rise in unemployment more generally and the student makes no attempt to link the factor to long term unemployment. In addition, the student incorrectly focuses on a supply side explanation for how a fall in consumer sentiment will impact on the rate of unemployment.

3. Describe one cause and one effect of a low rate of inflation up to the start of 2022. 4 marks

Clear identification of one cause of low inflation

Explanation is deficient. Link between lower OS growth and domestic inflation requires more depth. In addition, low rates of inflation is not the same as deflation

Sample 1

A low rate of inflation was caused by the slower rates of economic growth experienced by the USA, Europe and China. This led to slower growth in export demand and deflation in Australia. These lower prices meant that the purchasing power of consumers or households improved, such that material living standards of Australian households will increase.

Too brief. Why and how? What are material living standards?

Clear identification of one cause of low inflation

Explanations for how slower growth OS reduces inflationary pressure

Sample 2

The relatively low rate of inflation was caused by a number of factors, including the slower rates of economic growth experienced by Australia's trading partners. Slower growth in the USA, Europe and China has reduced export demand and demand inflationary pressures in Australia. Slower growth in export demand means that Australian exporting businesses experienced a reduction in sales, which led to excess capacity which, in itself, eased pressure on prices. In addition, slower growth in export volumes or production meant that exporters experienced a fall in incomes and profits, which resulted in lower returns to its factors of production, such as lower dividends for shareholders and lower wages for workers. This further reduced demand inflationary pressures in the economy and contributed to the very low rates of inflation experienced in Australia. This brings many benefits for the Australian economy, not least of which is the beneficial effect on international competitiveness and the longer run benefits this brings for Australia's balance of payments, economic growth and living standards. Lower prices means that net exports and AD more generally should eventually rebound, resulting in a lower CAD as well as a higher level of AD and real GDP. Stronger growth in real GDP should therefore help to create employment and incomes, and ultimately boost material living standards over time as Australian households will have the ability to purchase more goods and services.

Clear identification of one effect of low inflation

Explanations for how lower inflation can provide benefits

Analysis (Sample 2 full marks)

Overall, Sample 1 lacks sufficient depth. With respect to the cause of low inflation, the student's response requires more information and it confuses lower inflation (disinflation) with deflation. [While Australia did indeed experience a quarter of deflation (i.e. lower prices for a quarter), it did not experience 'deflation' over the past two years.] With respect to the effect of low inflation, its link to improved material living standards is too shallow and the student does not attempt to demonstrate an understanding of material living standards. Sample 2 provides two reasons to explain how slower overseas growth can contribute to a lower rate of inflation in Australia. [However, only one is required and the second simply adds value.] It also provides depth in describing how lower inflation (as distinct from deflation) can contribute to an improvement in material living standards over time.

4. Explain how an increase in aggregate supply might contribute to an increase in the rate of economic growth. 2 marks

Demonstrates an understanding of what is meant by an increase in AS

Demonstrates an understanding of how an increase AS can occur and links to productive capacity. This is not necessary for full marks, but serves to add value to the quality of the response

Sample 1

An increase in aggregate supply (AS) means that producers are more willing and able to produce goods and services. It usually occurs as a result of improved supply conditions and effectively leads to an increase in productive capacity. The increase in AS exerts downward pressure on prices (or inflation), as businesses experience excess supply and discount prices to clear surplus stock. This in turn stimulates AD and leads to an increase in real GDP (economic growth).

Demonstrates an understanding of how the increase AS ultimately leads to an increase in real GDP

Sample 2

If there is an increase in aggregate supply (AS) it means that more goods and services will be produced per unit of output (greater productivity) which means that producers will be more willing to raise output (i.e. an increased willingness to supply). This will result in higher output levels across the economy. Given that output equates to real GDP, growth in output by producers means that real GDP increases, which means that economic growth has increased.

This is an incorrect statement for it implies that AS can only increase as a result of higher productivity.

Deficient explanation for why an increase in AS contributes to an increase in economic growth.

Analysis (Sample 1 full marks)

Sample 1 is the superior response because it succinctly demonstrates an understanding of AS and provides a logical and plausible explanation of how an increase in AS leads to an increase in real GDP. Note that the student appropriately refers to the role of prices (i.e. downward pressure on inflation) and AD when explaining how an increase in AS leads to an increase in economic growth. Sample 2 makes the mistake of assuming that AS only increases in response to higher productivity. [The student should have used productivity growth as an example of a factor that leads to an increase in AS]. In addition, the student does not adequately explain how an increase in AS contributes to an increase in economic growth. It is insufficient to assert that an increase in AS results in higher output without an explanation for how or why this occurs.

5. Explain how growth in both productivity and the participation rate can lead to an increase real GDP.
4 marks

An inaccurate definition of productivity (too narrow as it specifically refers to labour productivity.

The link between productivity and real GDP too shallow. Note also that the student should refer to real GDP (include 'economic growth' in brackets).

Sample 1

Growth in productivity effectively means that the nation is producing more goods and services per labour hour employed and highlights that efficiency has increased. This contributes to disinflation in the economy, which in turn stimulates AD and economic growth. The **participation rate (PR)** refers to the degree to which people are participating in the labour force and, when it increases, it means that businesses will have access to more labour, enabling more output to be produced. This increases the rate of growth in production as measured by real GDP.

An inaccurate definition of participation rate

The link between PR and real GDP is too shallow.

An accurate definition of productivity.

The link between productivity and real GDP is detailed

An additional sentence of 'value add' makes it clear that the student understands the key links

Sample 2

Growth in productivity effectively means that the nation is producing more goods and services from any given volume of inputs, such as labour and capital, and indicates that Australia is more (technically) efficient in the way it produces goods and services. This helps to contain costs of production and allows businesses to reduce prices without impacting on profit margins. These lower prices encourage growth in AD (e.g. growth in Consumption and net exports) which stimulates the rate of growth in production (i.e real GDP). To the extent that lower production costs result in higher profit margins, this facilitates an increase in Investment demand, further boosting AD and real GDP over time. The **participation rate (PR)** refers to the size of the labour force as a percentage of the working age population. A higher participation rate (e.g. via government efforts to entice more mothers back into the workforce) will effectively increase the supply of labour and exert downward pressure on wages (or labour costs). This helps to contain (or reduce) costs of production and inflation, which stimulates growth in AD and lifts the rate of growth in production (i.e. real GDP). In addition, the higher PR helps to protect tax revenue and further encourages growth in Investment and AD].

An accurate definition of participation rate, with an example of a cause to add value (not necessary for full marks)

The link between the PR and real GDP is detailed and accurate. The final sentence of the response is not necessary for full marks, but once again adds value

Analysis (Sample 2 full marks)

Sample 2 is the superior response because it demonstrates an understanding of the key terms (productivity and participation rate), while Sample 2 has made errors that make it difficult for assessors to award full marks even though definitions of these terms is not specifically required in the question. In addition, Sample 2 elaborates on each of the key links that help to explain why higher productivity and PRs are likely to simulate real GDP. Sample 1 makes basic errors or omissions when attempting to elaborate on the links that prevent the student from achieving full marks.

VCE Economics Workshops 2024

Josh Verlin and Romeo Salla

Second week of Sept school holidays
Week commencing 30 September 2024
University of Melbourne

Participants will be directed through a series of activities designed to enhance examination performance. This includes analysis of sample responses, exercises to unpack the most difficult parts of the course, and strategies to incorporate relevant and contemporary information into examination responses. The overriding emphasis in the workshop is to guide students (hands-on) through a process that helps them to apply their knowledge in the examination. Students are provided with extensive opportunities to quiz experienced examination assessors

Check the CPAP website from the 22nd of April for further details and bookings
www.commpap.com

Chapter 3 [Unit 3 AOS 3]
Australia and the world economy

The gains from international trade

Australia conducts trade with the rest of the world in goods and services (including financial and labour services) because these transactions enable a country to boost living standards. It does this in the following ways:

- A wider range or selection of goods and services are available for consumption;
- Potentially cheaper goods and services are available for consumption, which not only provides a direct boost to living standards, but helps to create additional competitive pressures (boosting incentive to innovate and improve quality) and further reduce prices;
- Australian businesses have access to foreign physical capital (such as machinery) that may not be available in Australia, or cannot be acquired cheaply enough;
- Australian businesses have access to foreign human capital (i.e. workers) that may be in short supply in Australia;
- Australian businesses have access to foreign financial capital (i.e. money) in the form of either debt or equity that helps them to expand their businesses via Investment;
- Australian businesses will be better able to take advantage of the benefits of economies of scale, where larger production volumes (for a global market) result in lower average costs of production and lower prices; and
- Australia as a country can use foreign funds to finance expansion or consumption (which are the reasons for our CAD and NFD).

The Balance of Payments (BOP) and its components?

The balance of payments provides a record of financial transactions between residents of Australia and residents of the rest of the world. The BOP is compiled primarily from a range of ABS and other agency surveys and all receipts are recorded in BOP as CREDITS and all payments are recorded as DEBITS. The BOP comprises two major accounts, the Current Account (CA) and the Capital and Financial Account (CAFA), and BOP must equal zero over any given period. This means that any CA deficit (CAD) must be exactly offset by a CAFA surplus or any CA surplus must be offset by a CAFA deficit. [While this is true in theory, statistical manipulations are made to ensure that this occurs in practice.]

The Current Account (CA)

The CA records all receipts and payments of a 'current' (as opposed to 'capital') nature. A deficit on the Current Account means that payments to foreigners (debits) exceed receipts from foreigners (credits), where both these are made up of the following:

Payments (debits) are made up of things like:

- payment for imported goods and services;
- interest repayments for foreign debt;
- dividend payments for foreign equity (i.e. profits sent to overseas shareholders);
- other income payments to foreigners (e.g. property income, wages, etc); and
- transfer payments to overseas residents (e.g. gifts, foreign aid, etc).

Receipts (credits) are made up of:

- export receipts;
- interest repayments from foreigners;
- dividend receipts from shareholdings in foreign companies;
- other receipts from overseas (e.g. property income, wages, etc); and
- transfer payments received by Australians.

Exam Tip: With respect to the distinction between current and capital transactions, think of current transactions as those that do not result in any future obligations, whereas capital transactions result in some obligation to send or receive money (or something else of value) in the future. For example, the receipt of money for exports does not result in any future obligation for either the Australian exporter or the overseas importer (purchaser). However, the receipt of money in the form of a loan from a foreign bank is capital in nature because it results in future obligations (repayment of both the loan and the interest) to the overseas lender. The distinction is similar to the difference between C and I or G1 and G2.

Overall the Current Account is made up of four separate parts:

1. ***Balance on Merchandise Trade*** (exports minus imports of merchandise goods, e.g. manufactured goods);
2. ***Net services*** (exports minus imports of services, e.g. tourism);
3. ***Net primary income*** (receipts and payments of income such as dividend and interest as well as international labour income); and
4. ***Net secondary income*** (gratuitous payments/receipts such as foreign aid and gifts).

For 46 years (between 1973 and 2019), Australia experienced a CAD every quarter of every year. However, in the June quarter of 2019, Australia's current account returned to surplus ($3.2B) and it remained in surplus until the September quarter of 2022, when the current account once again returned to a small deficit ($0.4B) in the September quarter of 2022 and again in the most recent September quarter of 2023 ($0.16B). The period of current account surpluses since 2019 means that Australia spent less than it earned as a nation, resulting in Australian entities lending money to overseas borrowers or deciding to retire/repay existing debt. [However, the reverse was true in the September quarters of 2022 and 2023, as the deficits needed to be financed in the form of loans (debt) or the sale of Australian assets (equity). When the debt or equity enters the country from overseas it is recorded in the Capital and Financial Account as a credit, the bulk of which enters via the Financial Account.]

The Capital and Financial Account (CAFA)

The **Capital Account** is a relatively insignificant account and covers capital transfers (such as migrants' transfers and debt forgiveness) and the acquisition/disposal of non-produced, non-financial assets (such as sales of embassy land or copyrights) between residents and non-residents. The Financial Account is the more important account in that it effectively covers the manner in which Australia finances its CADs.

The **Financial Account** is made up of:

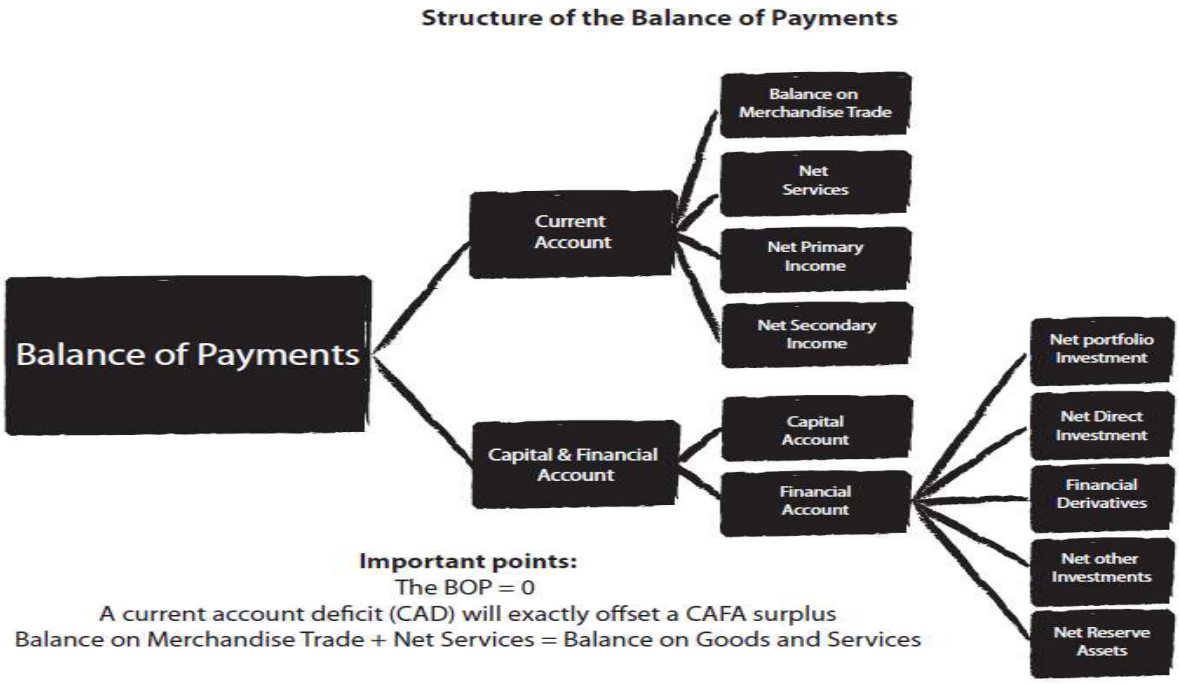
Official capital inflow (e.g. the Australian government selling bonds to O/S residents, which means O/S residents are lending the Australian govt money);

Official capital outflow (e.g. the Australian government lending money O/S, e.g. buying foreign govt bonds);

Non-official capital inflow and outflow which is made up of:

- borrowing and lending between Australian and overseas residents;
- net direct investment (e.g. setting up a production facility or plant); and
- net portfolio investment (e.g. net debt flows and the purchase of shares involving less than 10% control of a company).

An example of the structure of the balance of payments appears below.



Exam Tip: Students needn't be confused by the structure of the Financial Account of the BOP. Each of the official (government) and non-official (non-government) flows will be recorded in one of the five sub-accounts within the Financial Account. It is extremely unlikely that students will be required to draw upon a knowledge of the precise nature of financial flows through the bottom three of these five sub-accounts (i.e. Financial Derivatives, Net other Investments and Net Reserve Assets).

Exam Tip: In Part A of the 2022 and 2023 exams, Q10 and Q7 respectively required students to identify how transactions would be recorded in the BOP. With these types of questions, students first need to determine which part of the BOP the transaction is recorded, and second whether it is a credit (a receipt of funds into Australia) or a debit (the payment of funds to foreigners). In 2022, some students struggled to identify that the payment of rent to foreign investors is recorded as a debit in the NPI section of the current account. Whereas in 2023, some struggled to identify that the payment of dividends to Australians holding foreign shares is recorded as a credit in the NPI section of the current account. It should be appreciated that rent and dividends are examples of income flows that services net foreign liabilities (specifically net foreign equity) that are always recorded in the NPI section of the current account.

Exam Tip: In the 2021 exam, Question 4 provided a chart highlighting the growth in the current account balance (CAB) between 2011 and 2021 and part a required students to explain the trend in the CAB over the past two years for 2 marks. It is common for students to err by describing the trend pre 2018-19 and, in many cases, providing detail on the causes of the movement in the CAB (which is not required for the question). Part b required students to explain how the CAB over the past two years would have affected the CAFA balance. It is not enough to simply say that an increase in the CAS is likely to have a negative effect on the CAFA. Students should make it clear that they understand the structure of the BOP by saying that the CAFA will record a deficit balance that offsets the CAS such that the BOP = 0.).

Exam Tip: With respect to a question like 2b from the 2021 exam, students should be careful not to confuse 'flow variables' (e.g. the CAB and the CAFA balance) with 'stock variables' (e.g. NFD and NFL) by saying, for example, that a higher CAS leads to a decrease in the stock of debt in the CAFA. While a CAS can indeed lead to a lower 'stock' of NFD or NFL, the CAFA does not record the stock (or level) of debt, but rather the flows of borrowing from/lending to foreigners (i.e.money coming in from borrowing and recorded as credits versus money going out from lending and recorded as debits).

Exam Tip: Multiple choice Q12 of the 2017 exam required students to calculate the current account (CA) balance based on hypothetical figures for each of the components of the CA. This should have been straight forward for students who understood the make-up or structure of the CA. It highlights another example where students need to practice the key skill in the Study Design 'calculate relevant economic indicators using real or hypothetical data'. In future, it is not unreasonable to expect an exam question containing data from one of the other key accounts within the BOP (e.g. the capital and/or financial account). Remember the BOP always nets to zero so that a CAD of $158 million requires a surplus in CAFA of $158 million!

Current account figures on their own often provide little information to those not trained in economics. The number makes much more sense when it is compared to the nation's production or income levels as this provides an indication of the ability of a nation to sustain the CAD into the future. For example, Australia's CAD recorded in the September quarter of 2023 of $158M is miniscule when compared to the nation's income levels (or GDP) of approximately $607B, it represented a ratio of only 0.03% of GDP (or 0.03% of the size of the economy).

Cyclical and structural influences on Australia's current account balance

Structural factors that influence the current account balance are those unrelated to changes in the economic cycle. They influence the CAD as a consequence of underlying or inherent structural features of the economy that have resulted in relatively high CADs in the past. These factors will typically influence the current account balance over a more extended period of time (i.e. they have longer term implications) as opposed to cyclical factors, which have much shorter term implications. Given that cyclical factors are more short term, they cause the current account balance to fluctuate in line with movements in aggregate demand and economic growth. Each of the following factors are examples **of structural factors** influencing the current account balance:

- a national Savings and Investment imbalance (or national spending exceeding national income);
- relatively low rates of productivity growth;
- relatively low levels of technological advancement
- low levels of international competitiveness;
- changes in resource endowments (e.g. the discovery of a vast stockpile of new minerals); and/or
- shifts in comparative advantages (related to the above factors);

Large CADs have generally been a ***structural*** feature of the Australian economy due to our savings/investment shortfall – i.e. it has typically been with us for a long time (despite mostly surpluses since 2019) and need not be problematic. Being able to run a CAD allows us to finance investment in capital equipment as well as infrastructure and new mines that will help to increase national income and future living standards if these investments are effective. It is typically felt that business debt, unlike much of household debt, is good debt because firms will undertake cost benefit analysis to ensure the investment will create an income stream that

will repay the debt and create profits. Government debt, however, is far more prone to being used for election purposes and hence is less commercial (i.e. designed to create a profit) in nature.

The government acknowledges, however, that the CAD is highly ***cyclical*** in nature, growing during times of strong domestic demand, and falling during periods of declining demand (or economic downturns). This fact is illustrated by the recent statistics, where the CAD as a percentage of GDP rose to 4.3% of GDP in late 2015 (when economic growth was relatively strong). It declined to less than 1% of GDP in early 2019, before returning to surplus as the economy slowed down significantly over 2019 and entered a recession in 2020. This **cyclical improvement** to the CA balance between 2020 and 2023 was also supported by the high level of commodity prices, which helped to boost (mining) export incomes and raise the Balance on Merchandise Trade surplus. In addition, the generally lower exchange rate also helped to increase the competitiveness of exporters as well as raise the AUD price (and therefore income) from exports denominated in foreign currencies. For example, coal and iron ore (Australia's two largest exports) are almost entirely sold in USD which increased the income for Australian miners when converted back into the 'cheaper' AUD.

Exam Tip: Question 4d of the 2021 examination was the most difficult question on the paper. For 3 marks, students were required to 'explain how a change in one structural factor might result in improvement in the current account balance'. It was insufficient to simply highlight how a factor (such as growth in demand for exports from China or a depreciating exchange rate) improved the CAB. It was necessary to highlight a relevant structural factor (e.g. the savings and investment imbalance or relative rates of international competitiveness such as those relating to our high quality agriculture and mining sectors that give us a competitive advantage) and then follow through to explain how the factor led to an improvement in the CAB. Students should also be very careful not to confuse the current account balance with the budget balance, which continues to be a common mistake.

Exam Tip: In the 2020 examination, question 3c required students to explain how an exchange rate depreciation would impact on the current account balance. The best responses were those that referred to specific components of the current account (e.g. the BOMT or BOGS) as well as referring to debits/credits. In addition, many students continue to confuse the current account with net foreign debt by saying things like 'a lower exchange rate makes it more difficult to repay foreign debt' without attempting to make any connection to the current account. Students are also advised not to focus singularly on the net primary income (NPI) effect of a depreciation. This is because most of Australia's foreign debt/equity is now denominated in AUD such that a depreciation will no longer have a significant impact on (inflating) debits relative to credits in the NPI section.

Exam Tip: Q3a of the 2018 exam once again tested student understanding of a factor influencing the trend movement in the current account balance. As was the case in the 2017 exam, students continue to confuse the CAD with the budget deficit and had trouble isolating a specific factor which may have accounted for the trend movement in the CA balance (such as a change in the TOT, a movement in the exchange rate or a shift in global rates of economic growth). Importantly, the 2018 question contained the added difficultly of the CA balance falling (i.e. deteriorating) in 2017 from approximately -1.5% of GDP to -3.0% of GDP, before rising (i.e. improving) in 2018 to approximately -2.0% of GDP. The best responses will have been those that referred to the downward 'trend' in the CA balance (or alternatively the upward 'trend' in the CAD), using the figures from the chart as support.

Exam Tip: Q5a of the 2017 exam provided students with a chart showing the movement in the current account balance between 2010 and 2017. Students were asked to outline one factor that might explain the [declining] trend in Australia's current account since 2015-16 and the question was handled poorly by many students (e.g. 59% of students scored 0 or 1 out of 2 marks). For this 2 mark question, the first mark would be awarded for identifying the declining trend in the CA balance since 2015-16, while the second mark will have been awarded for an outline of a plausible factor contributing to this improvement, such as rising commodity prices/higher terms of trade. It will not have been enough to simply identify the factor. Instead, students will have needed to outline how the factor (e.g. a higher TOT) contributed to an improvement in the Balance of Goods and Services. Students also made the common mistake of confusing a current account deficit with a budget deficit.

Causes and implications of CADs

We will focus primarily on CADs in this section given that CADs were generally a part of the landscape for many years (up until 2019), and given that the current account has once again returned to deficit in September 2023. The implications can be reversed if Australia was to once again record current account surpluses in the future.

There were two primary causes of Australia's CAD:

- First, we had a Savings/Investment imbalance (i.e. savings have been insufficient) over many years. This has resulted in national spending exceeding income and a huge build up in net foreign liabilities which must be serviced through the net primary income (NPI) section of the current account. The deficit in the NPI section is the major component of the CAD (as seen in the chart on the next page).

- Second, our international competitiveness did not increase at the same rate as that of many other countries. This meant that the Balance on Goods and Services was often (but not always) in deficit, further contributing to the CAD.

The value of the CAD on an annual basis provides an indication of the extent to which Australia is spending beyond its means. Just like a household that borrows to finance current expenditure, the excess of expenditure over income (i.e. the deficit) need not necessarily be a problem if the borrowed funds are generating sufficient income to repay the debt. However, persistent and growing *deficits as a percentage of national income (equivalent to GDP)* can be worrisome because it means more and more of our current income is used to repay foreign liabilities (debt and/or equity). Accordingly, the value of the *CAD as a percentage of GDP* provides a guide as to the proportion of our total income (or production) that is effectively being financed by overseas countries.

The government tried to ensure that 'current account deficit pressures' did not emerge during those periods of stronger economic growth. When these 'pressures' did (or do) emerge is debatable. The RBA has in the past indicated that a deficit to GDP ratio of about 5 per cent is not sustainable in the longer term. Some texts may tell you that a sustainable level would be 2 to 3 per cent of GDP, but this is arguably too low.

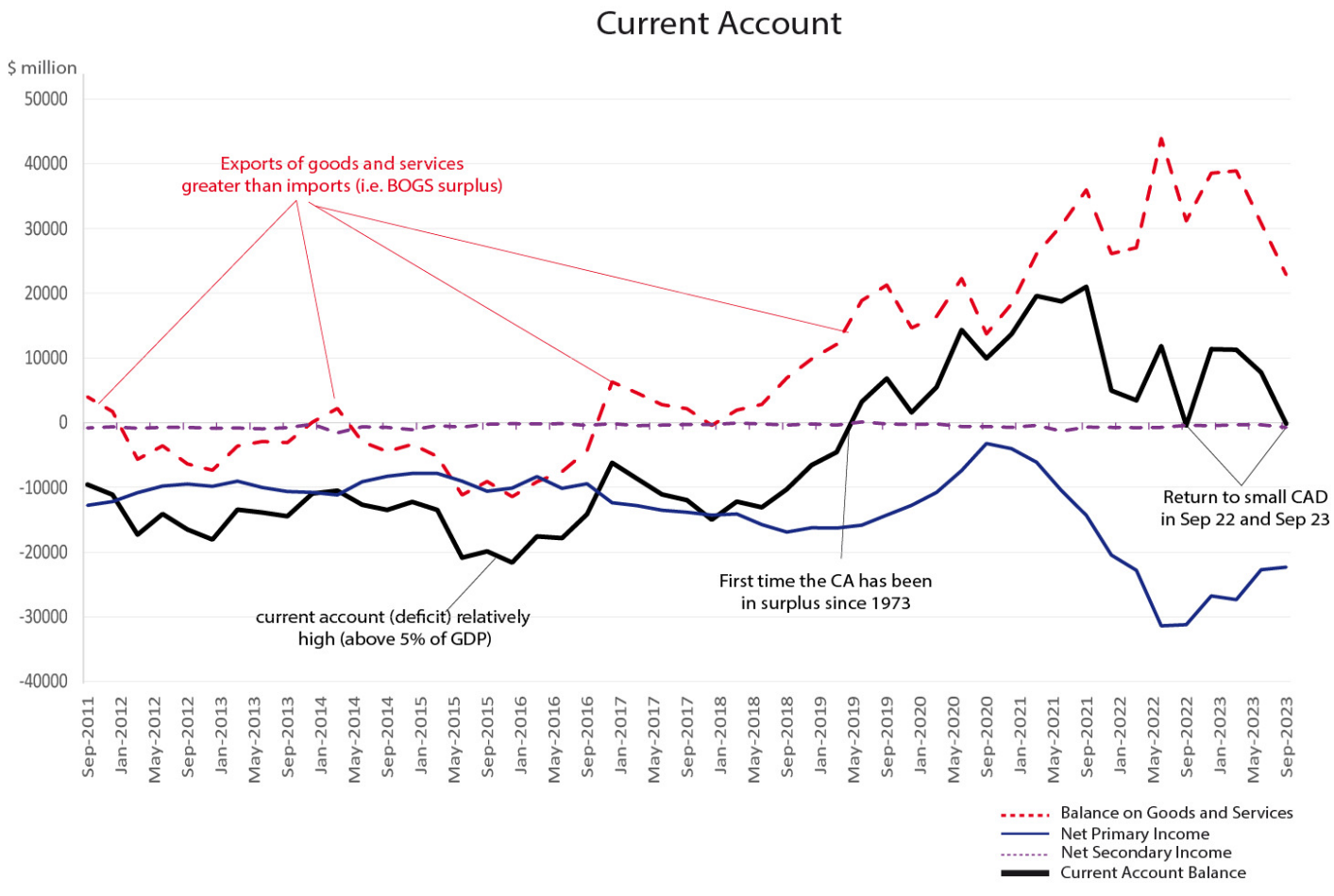
Is a CAD problematic for a country like Australia?

If spending is greater than income it means that Australia has to find money to finance that additional expenditure. This money comes from overseas typically in the form of borrowing (e.g. the sale of bonds) or the sale of other Australian assets (e.g. shares) The corresponding increase Australia's net foreign liabilities (i.e. debt and foreign equity) will not be a problem if the debt and equity can be adequately serviced (i.e. repaid) over time.

It is worth repeating that the incoming funds are recorded in the CAFA (specifically the Financial Account), this time as a credit. In this respect, the CAFA summarises and records the financing of the CAD. Further, the interest or dividends paid to service these foreign liabilities flows out through the CURRENT ACCOUNT. Consequently, we should note that 'spending greater than income' worsens the CAD for two reasons. ***First***, the increased expenditure on imports worsens the Balance of Goods and Services section of the CURRENT ACCOUNT. ***Second***, the interest paid to service the NFD (or dividends to finance equity) worsens the Net income section of the CURRENT ACCOUNT.

Exam Tip: In examinations, it is common for students to talk in terms of repaying the CAD. It is not possible to repay the CAD as it is a 'flow' variable (e.g. like income, or profit). Accordingly, it returns to zero at the commencement of each reporting period. Continuing CADs are likely to lead to a build up of net foreign debt over time. Always remember that it is the NFD that we can repay, not the CAD! Making little errors of this nature only serves to undermine the quality of student responses in the examination.

The chart below highlights the key current account statistics (original figures) since 2011.



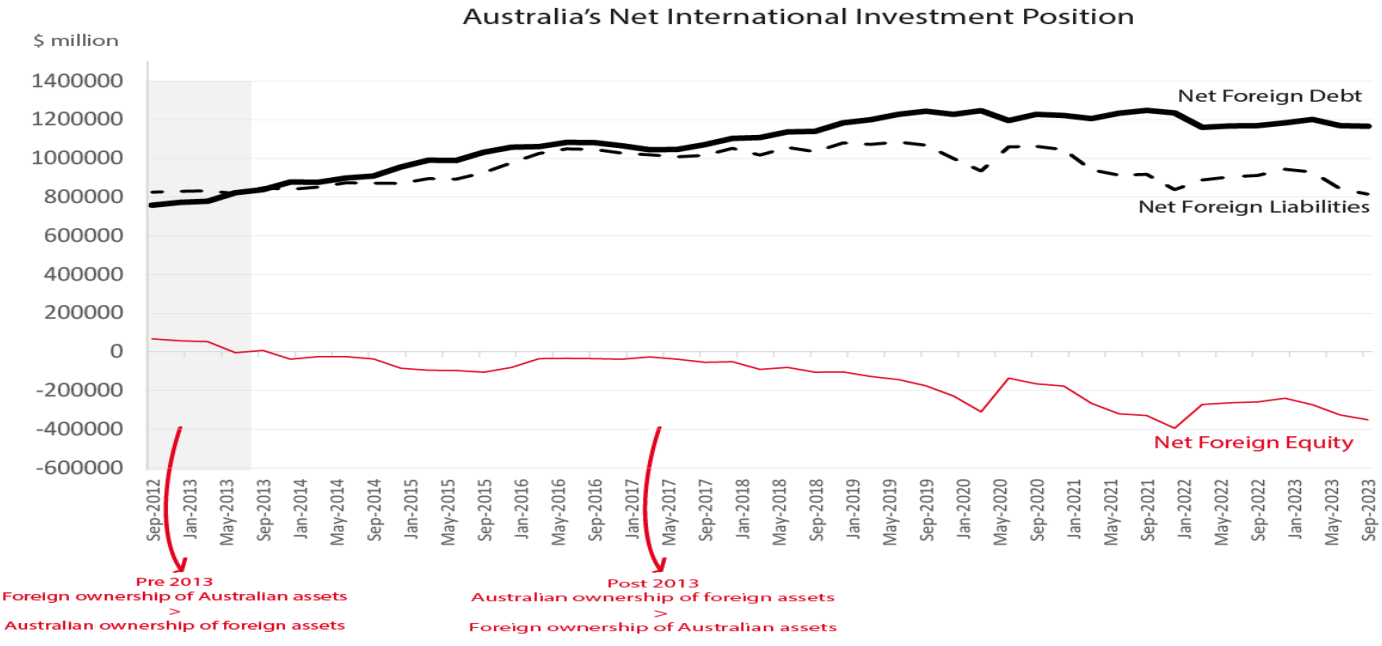
Key points to note are as follows:

- The current account was in deficit for many years before moving into surplus in the June quarter of 2019 and then returning to deficit again in the September quarter of 2022 and the most recent September quarter of 2023.
- The current account returned to surplus for most of the four year period 2019-2023 largely because of the huge improvement in the Balance on Goods and Services, with three key factors contributing to this improvement:
    - growth in export values due to strong growth in commodity prices;
    - growth in export values due to the relatively low exchange rate; and
    - falls in import values due to sluggish levels of Consumption and Investment demand.
- The improved current account position over recent years is also partly attributable to the generally lower net primary income balance as a result of lower global interest rates which reduces the cost of servicing foreign debt for Australia.
- The Balance on Goods and Services has been in surplus on several occasions over the period despite the existence of a CAD for most of the period (which was due to the continuing net primary income deficit i.e. the NPI balance has always been below 0%)
- The cyclical movement of the CA balance is largely due to swings in the Balance on Goods and Services (as evidenced by the dashed BOGS line moving in line with the thick dark CA balance line), which in turn is largely due to changes in the economic cycle. This means that the CAD typically improves during periods of slow domestic demand (or economic downturns) and deteriorates during recoveries/booms. The exception is if recoveries or booms are a result of strong global growth that drive up commodity prices and result in growth in mining export incomes – which is what occurred up to the end of 2022.

Exam Tip: It is easy to get mixed up when attempting to interpret or quote current account statistics. For example, a current account balance for the Sep quarter 2023 of -$158M is typically referred to as a $158M Current Account Deficit (CAD). Notice that the minus sign no longer needs to appear in front of the $158M. This is because of the inclusion of the word deficit, which effectively replaces the minus sign. Responses in past examinations reveal that it would be common for students to report this as a Current Account balance of $158M or a CAD of -$158M – both are incorrect and serve to undermine the quality of responses in assessment tasks or examinations. For example, recent exams have included charts containing movements in the CA balance (as a % of GDP) and it was common for students to incorrectly refer to a fall in the CA balance (e.g. from -1.5% of GDP to -3% of GDP) as a fall in the CAD; or a rise in the CA balance (e.g. from -3% of GDP to -2% of GDP) as a rise in the CAD. Students should always remember that in the Australian context, if the current account 'balance' falls it means that the balance becomes more 'negative' and therefore the current account 'deficit' increases.

The composition and cause of net foreign debt and net foreign equities

Australia's **Net International Investment Position (NIIP)** describes the extent to which Australia is financially obligated to the rest of the world. The ABS reports the change to Australia's NIIP on quarterly basis within the BOP. The NIIP is essentially made up of Australia's net foreign liabilities (NFLs), which in turn is made up of **net foreign debt (NFD)** and **net foreign equity (NFE)**. The most recent statistics available reveal that Australia's stock (or total) of NFLs fell from $1,062B in September 2020 to $815B at the end of September 2023, which was made up entirely of NFD ($1,167B), with NFE of -$352B, highlighting the fact that Australia currently has more equity investment overseas compared to the equity investment (in Australia) held by overseas parties. This is highlighted in the chart below.



Like a CAD, Australia's levels for NFLs reflect that national spending has been greater than national income and that, as a country, we needed to use foreign borrowing (or equity) to finance part of the spending shortfall. The continuing CADs up to June 2019 led to growth in NFLs given that net foreign inflows of debt and equity enter through the CAFA such that the CAFA surplus offsets the CAD.] Of course, the reverse has been true for most of the period since June 2019 as the presence of a CA surplus for most of the period contributed to a reduction in NFLs.

The movement in NFE over time highlights that the sale of Australian assets (such as shares) to overseas investors has increasingly been exceeded by the purchase of foreign assets by Australian investors (in large part due to superannuation funds investing internationally). This effectively means that, since late 2013, Australia's CAD was completely financed by overseas borrowing. Prior to this time, Australia's CAD was financed by a combination of debt (NFD) and equity (NFE). If the trend movement for NFE were to continue, then higher levels of NFD will be less problematic in the future and governments are even more likely to focus on the stock of net foreign liabilities (NFL) when assessing the health of Australia's external position.

Exam Tip: Students often fail to appreciate that Net Govt Debt or (covered in Unit 4) is only a part of total NFD (the other part being private sector net debt). It is therefore incorrect to argue that a budget surplus will reduce NFD. In other words, a reduction in NGD debt does not mean that the NFD will decrease to the same extent – this is because the private sector is likely to borrow more in a climate of budget surpluses (or deficit reductions).

Exam Tip: Students also often stated that a surplus in BOGS would reduce NFD (or NFL), forgetting that the large Net Primary Income deficit created on ongoing pressure on the CA and upward pressure on NFD/NFL given the continuing imbalance between spending and income (or insufficient national savings).

Exam Tip: Many students confuse the terms net foreign debt (NFD) and net foreign liabilities (NFL). NFL includes NFD in addition to the net value of overseas equity (e.g. ownership) in Australia (i.e. NFE). Both NFD and NFE require servicing, with NFD serviced via interest and NFE serviced via profits or dividends.

Exam Tip: It is incorrect to argue that a CAD will always lead to a higher NFD. Indeed, it is possible for a country to have CADs, but experience no increase in NFD. How can this happen? Instead of issuing debt to finance CADs, a country can simply sell off some its assets (e.g. selling shares in companies to overseas residents). Accordingly, NFD won't increase, but net foreign liabilities will, due to an increase in NFE.

Australia's aim is to achieve NFL levels that can be adequately maintained (e.g. the funds are put to productive use and generate returns that finance the debt or equity). Foreign debt or equity levels that rise too high might reflect that Australia's ability to service its liabilities is diminishing. In particular, high NFD or NFE levels are likely to:

- lead to Australia's credit rating being downgraded, which will increase interest rates;
- lead to a fall in the AUD as foreigners will be less inclined to invest in our currency; and
- contribute to an increase in cost inflation (via higher IRs and a lower dollar).

The return to current account surplus should, therefore, help to preserve Australia's good credit rating and increase pressure on the exchange rate.

Since September 2020, Australia's level of NFLs have declined from $1,062B to $815B for three main reasons:

- First, the reverse of the savings/investment imbalance that plagued Australia up to 2019, reflected in National Savings exceeding National Investment (or national income exceeding national spending). This of course also reflects the return of the current account to surplus (for most of the period) and the net investment outflows that have reduced NFD and NFE.

- Second, the valuation effect stemming from the fact that Australia has a net foreign currency asset position which has resulted in a lower value of NFLs as the exchange rate depreciated. This is because the bulk of Australia's foreign debt liabilities are denominated in Australian currency (typically USD) while the bulk of our assets are denominated in foreign currency. So when the AUD depreciates, it leads to a reduction in the net value of our NFLs (NFD + NFE). This is because the value of our debt liabilities remains unchanged (as they are denominated in AUD), but the value of our assets (e.g. ownership of foreign shares) increases because they are denominated in the more valuable foreign currency (e.g. USD).

- Third, the relatively higher interest rates over recent years has depressed bond prices (note there is always an inverse relationship between bond prices and bond yields) which has reduced the value of Australian (Government) Bonds in global markets and therefore decreased the value of Australia's debt liabilities.

Exam Tip: While the Study Design requires students to understand the causes of net foreign debt and net foreign equities (i.e. NFLs), students will not be directly examined on the valuation effects described above (i.e. the effect on the level of NFLs following a change in IRs and the exchange rate). However, an understanding of factors that can influence the value of NFLs might be useful in the exam in the event that a question asks for reasons why NFLs might be increasing or decreasing.

Extension: The importance of external stability

It is important that Australia is able to meet its international financial obligations that result from transactions with the rest of the world. The government can make our country more 'externally stable' by, for example, ensuring that (as a country) we do not have a large imbalance between spending and income such that our national debt levels become difficult to service (i.e. repay).

Exam Tip: Specific reference to 'external stability' no longer appears in the Study Design. Previously it was included as one of the key economic goals of the government. While it is not likely to be specifically mentioned in the exam, it is not impossible. Students should remember what external stability implies in relation to the CAD, NFLs (or NFD) and the stability of the AUD. It is also worth remembering that Australia's external position improved markedly since 2019 given the emergence of a current account surplus and the related fall in NFLs.

The key variables that will help us to determine if we are externally stable are:

- The size of the CAD;
- The level of Australia's NFD (or NFLs); and
- The relative stability of Australia's exchange rate

It has generally been accepted that a CAD of approximately 5-6% of GDP is sustainable for a country like Australia. A CAD much higher than this is likely to trigger some contractionary government policies in order to reduce its size. With respect to NFD it (like the CAD) needs to be at a level where it can be adequately repaid without causing problems for the domestic economy (such as a rapidly depreciating currency). Some suggest that a sustainable level of NFD is one that is below approximately 60% of GDP. However, even when it was sitting at 60% (as it was close to in September 2021), Australia's net debt level was more manageable than other countries, given that many countries rely on debt to stimulate their economies. Furthermore, our Net Foreign Equity position is favourable, offsetting some of the impact that NFD has on Australia's NFL. Sustainable levels of NFD helps to ensure that Australia maintains its AAA credit rating and prevents our external position from causing a large depreciation of the exchange rate. It is generally assumed that "private debt" is good debt because businesses borrow with an expectation of profit and hence will only take on debt if debt servicing is manageable and the risk of default is small. In contrast, government debt is more susceptible to being used for political purposes and is less likely to add to productive capacity (which can make it more difficult to service over time).

Exam Tip: Students should understand the difference between 'net' and 'gross' in the context of debt. Gross debt is the total amount owed to lenders, whereas net debt is gross debt minus the total amount that is owed to us by borrowers. For example, if you borrow $10,000 from a bank, but your friend owes you $8,000, then your gross debt is $10,000 but your net debt is $2,000.

It can be useful to think about external stability by using the analogy of a simple household. Every household typically has the objective of being financially stable such that any imbalance between household spending and income is sustainable and any debt it incurs (e.g. mortgages) can be serviced. Like a country, there is no problem with spending being greater than income so long as you have the ability to pay off the debt (or equity) that is incurred along the way. So 'signs' that suggest a household may be financially unstable are a large gap between spending and income (which is equivalent to the CAD) and high levels of net debt (which is equivalent to NFD). Of course, this situation is caused by excessive amounts of expenditure or insufficient income being earned (which is often related to a lack of international competitiveness at the macro level).

When the economy does experience signs of external instability, such as a very high CAD and/or NFD, this will, ceteris paribus, lead to instability in the value of the currency (i.e. the exchange rate). The government (via the RBA) will sometimes seek to smooth out any damaging fluctuations in the currency, particularly those driven by speculation that causes the currency to diverge from its fundamental value.

The importance of 'external stability' is highlighted with reference to the experience of a number of European countries in the past. In particular, Greece, Ireland, Italy, Portugal, and Spain [The PIIGS] all experienced financial crises from 2008 as a result of national (primarily government) borrowing that became excessive and unsustainable. This resulted in huge austerity measures and/or rescue packages (involving the European Union and the IMF) being undertaken in many of these countries. The measures ultimately resulted in large cuts to government expenditure and restrictions on further borrowing and falling living standards. In addition, they experienced large downgrades to credit ratings, which raised the cost of borrowing and compromised Investment into the future. These factors had a negative impact on economic growth and employment in those countries, reducing average living standards. In essence, by spending beyond their means for too many years, these countries allowed their debt levels to become unsustainable. By allowing their countries to bring forward too much future consumption via debt, they faced years of austerity in order to pay for the consumption they already enjoyed. This is why it is important that NFD, in particular government debt, is kept to manageable levels.

The terms of trade (TOT): meaning, measurement, causes and effects

The TOT is a ratio of the prices received for Australian exports to the prices paid for imports (Px/Pm). If the TOT increases, there must be a rise in the average prices received for our exports and/or a fall in the average prices paid for our imports. A rise in the TOT is generally beneficial for Australia because it results in exporters receiving higher incomes from any given volume of exports, and/or Australian importers be paying less for any given volume of imports. This increases the value of net exports, boosting both the Balance on Goods and Services (BOGS) in the current account as well as raising nominal GDP via an increase in (X – M). This then ultimately increases real GDP via the increase in both Consumption and Investment that flows from the growth in national

income (e.g. via greater profits and wages). Accordingly, growth in the TOT will accelerate economic growth, help to reduce the rate of unemployment and boost material living standards. However, it will also lead to an increase in demand inflationary pressure, making it more difficult to achieve price stability.

Exam Tip: The TOT is an area that continues to trouble students, including Q1b of the 2020 exam. When analysing improvements in the TOT, students should not think in terms of higher X prices being bad for exporters. A higher TOT reflects higher prices received for Australian X (i.e. after demand and the sale has occurred). For example, the increase in the TOT up until 2022 occurred as a result of growing world demand for commodities (particularly iron ore and coal). This increased the world price of commodities and caused Australian exporters of commodities to receive higher prices for their output, increasing export values for Australia. In other words, the rising world demand (which is a positive) has caused X prices to rise, rather than rising prices causing X demand to fall!

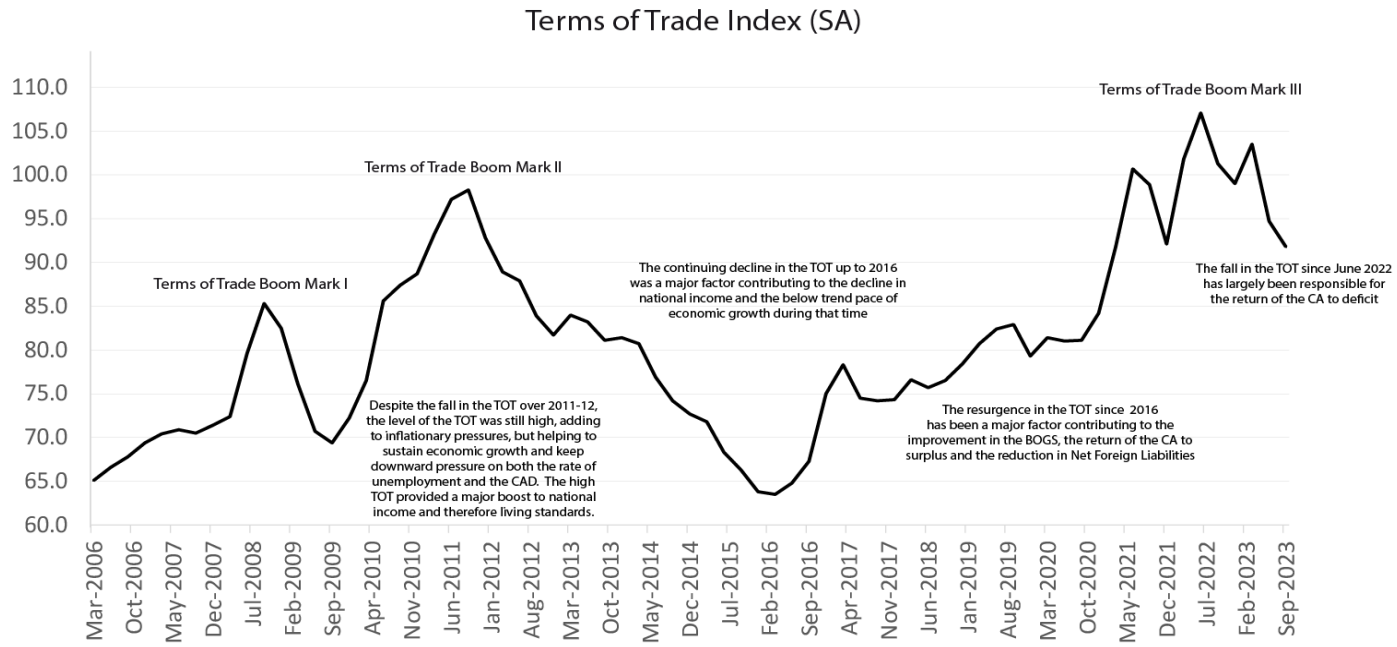
Exam Tip: With specific reference to the 2020 question, students were required to connect a 'favourable movement' in the TOT to the exchange rate. When attempting to explain what is meant by a favourable movement in the TOT (i.e. prices received for X increasing relative to the prices paid for M) it is important not to assert that it means the index increases above 100 (e.g. the TOT index could increase from 70 to 80 and it is a favourable movement). Then when linking a higher TOT to the exchange rate, it is insufficient to simply say that 'a higher TOT increases the demand for the AUD and therefore causes the exchange rate to increase'. Instead, it is necessary to explain why the demand for the AUD increases (e.g. because any given volume of exports will yield a higher value which requires foreign purchasers to demand more AUD in the foreign exchange market, which then increases the value of the AUD).

Exam Tip: In the 2019 exam, students performed poorly trying to explain how an 'unfavourable' movement in the TOT might affect the goal of SSEG and living standards. When attempting to demonstrate an understanding of the TOT, many students made the common mistakes of saying things like: 'export values have declined relative to import values', 'exports have declined relative to imports' and 'import prices have declined relative to export prices' and students then struggled to link the lower terms of trade to a lower level of aggregate demand (and therefore economic growth). This area of the course requires careful revision if students are to avoid these common mistakes.

Exam Tip: Often students become confused about whether they need to talk about the causes and effects of a change in the TOT. For example, the 2019 and 2020 exams required a discussion of the effects, while the 2012 exam focused on causes and effects. A beautiful response that discusses the effects when the exam asks for the causes (and vice versa) will result in zero marks.

Exam Tip: In examinations, students often confuse the TOT with the Balance of Trade (BOT). For example, in the 2021 exam, students were asked to explain how the performance in the trade balance over the past two years might have affected SSEG and living standards. Those students who referred solely to the TOT instead of the BOT could not achieve full marks, unless of course they linked the higher TOT (which was relevant) to the growth in the BOT. In the 2012 exam, Q4d required students to explain the difference between the TOT and current account balance. Those who said that the TOT is one of four accounts in the current account should have received zero marks. In the 2013 examination, a number of students also failed to demonstrate an understanding of the TOT in Q1a. Always remember that the TOT relates to **prices** of X **over prices** of M but the BOT (or the current account) refers to the **value** of X **minus** M.

The chart below highlights the movement in the TOT since 2006.



Extension/background: The growth in the TOT over 2007-8 and again over 2020-11 was referred to as the 'TOT Boom Mark I' and 'Mark II' and occurred because of large increases in demand for Australian minerals (mainly iron ore and coal) from growing economies, in particular, China. Without this large growth in the TOT, Australia's external accounts would have been much worse. In particular, the booming TOT up until 2011 was a major reason for the improvement in Australia's trade balance (or BOGS) and relatively low CAD. However, between 2011 and 2016, the TOT entered a period of significant decline, hailed the 'end of the TOT boom'. It was driven primarily by growth in the world supply of commodities, like iron ore, and a slowdown in world demand, as the growth rate of key economies (including China) fell. But the fact remained that the TOT was still relatively strong up until 2013-14, exerting a positive influence on growth and jobs (assisting with the achievement of the SSEG and FE goals). It was one of the few factors exerting pressure on inflation (making price stability more difficult to achieve).

However, between 2013-14 and 2015-16, the TOT fell to much lower levels following further increases in the global supply of commodities as mining companies increased investment in mine capacity (attracted by higher prices). This increase in global supply coincided with much lower demand as global growth stalled, such as the slower rates of industrial production in China, and downturns in Japan and many European countries. With supply outpacing demand, commodity prices and the TOT fell to the lowest level seen in more than a decade. This caused nominal GDP and Real Gross Domestic Income to decrease, prompting many commentators to claim that Australia was in the midst of an 'income recession' at the time. This drop in national income certainly weighed down on economic growth and increased pressure on unemployment, but also helped to maintain downward pressure on inflation. The lower TOT also continued to have negative implications for Australia's net exports, with the BOGS falling from a surplus in 2014 to deficits between 2014 and 2016.

Between 2016 and 2022-23, the TOT climbed once more on the back of resurgent coal, iron ore and natural gas prices, which positively impacted on Australian standards of living via the influence on income per capita, which raised the spending power of households, as well as lifting tax revenue for federal and state governments, which in turn boosted its capacity to provide government services. Importantly, the relatively high TOT over recent years (along with a relatively low exchange rate) has been a contributing factor behind the increase in the Balance on Merchandise Trade since 2018-19, and the return to current account surplus. The fall in the terms of trade since the middle of 2022 has the reverse effects on the balance of payments and the economy more generally.

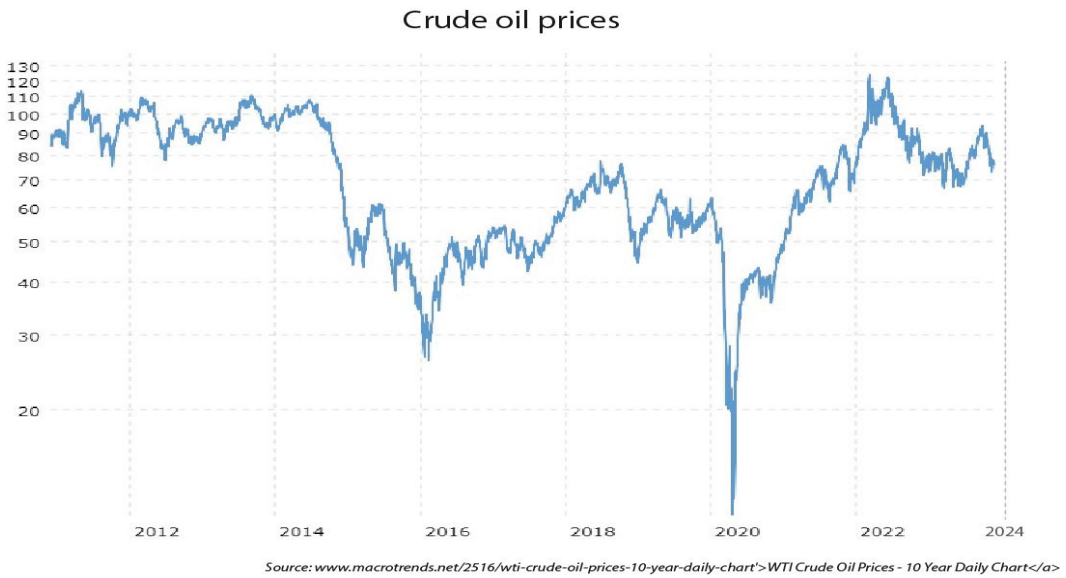
Focusing on the most recent period, the growth in the TOT between June 2020 and June 2022 was largely unexpected as commodities increased to record highs. This was a consequence of a resurgent appetite for commodities by China, as it required iron ore as an input for growing steel production to be used in the large scale infrastructure projects. In addition, supply disruptions in countries like South Africa and Brazil resulted in a reduced supply of iron ore to world markets and created further upward pressure on the iron ore price. Since the war in Ukraine, the rise in prices for commodities, such as natural gas and coal, also contributed to the record growth in the TOT over this period.

The continuing high TOT over recent years (despite the fall over 2023) was a major factor behind Australia's economic recovery; the CA surpluses and the vast improvement to the cyclical component of the government's Budget which led to a budget surplus of more than $20 billion for 2022-23 (covered in Unit 4). However, the decline in the TOT from the middle of 2022 (albeit from high levels) started to have the reverse effects as those outlined above – reducing economic growth, employment and inflation, as well as contributing to a fall in the current account surplus and return to surplus in September 2023.

Exam Tip: In an exam, it is useful to remember that an increase in the TOT will typically increase inflationary pressures for two main reasons. Firstly, higher prices received for exports will increase export income, which adds to national income and triggers demand inflationary pressures. Secondly, as more goods/services are offered in export markets, it adds to capacity constraints for local production, and further increases inflationary pressure. Input costs may also rise, lifting the costs of production (e.g. coal and gas price rises have contributed to higher energy costs). However, to the extent that any rise in the TOT is due to the lower prices paid for imports, this will help to reduce inflationary pressure.

Recent oil price movements (as a global cost of production) and the terms of trade

The chart below captures the high volatility of oil prices. During 2014, oil prices fell from over $100 a barrel in to less than $30 a barrel in 2015-16. It was caused by growth in the global supply of oil exceeding demand, with much of the additional supply coming from a large increase in USA oil production and the slower demand a result of stalling or slowing economies (e.g. Europe and China) which reduced global consumption of key energy resources such as oil, iron ore, coal, etc. Between 2016 and 2019, oil prices recovered somewhat (albeit not to its 2013-14 high), but during 2020 global oil prices collapsed once more, falling back to less than $20 as the global supply of oil increased and demand fell as industrial production halted during the "covid induced" global recession. In addition, prices fell as a consequence of the price war between Saudi Arabia and Russia at the time. Between 2020 and 2022, oil prices recovered once more, increasing significantly due to increased global demand, as economies recovered from recession, as well as reduced supply due to OPEC restrictions and weather related disruptions. But they fell once more from the middle of 2022 due to factors such as more supply from OPEC, an increase in the supply of oil from US strategic reserves as well as slowing of the global economy due to a tightening of monetary policies from central banks.



Source: www.macrotrends.net/2516/wti-crude-oil-prices-10-year-daily-chart'>WTI Crude Oil Prices - 10 Year Daily Chart

Given that oil is a commodity that Australia exports, one would expect that any fall in oil prices would contribute to a fall in Australia's TOT, which negatively impacts on the economy. However, while Australia does indeed export oil, it is a net importer of oil (i.e. our imports of oil exceed our exports of oil). This means that a fall in oil prices exerts upward pressure on the TOT, enabling Australia to purchase more (oil) imports for any given voume of exports. It therefore has supply side benefits for the economy, helping to reduce the **costs of production** and inflation as well as providing a positive stimulus to economic growth. Lower fuel prices also improves household budgets as less income was spent on fuel (demand for fuel is price inelastic, meaning falling prices cause a proportionally smaller increase in demand).

Exam Tip: Q2d(ii) of the 2015 exam was a difficult question for students. It required an outline of the significance for household budgets of price elasticity of demand for petrol in light of recent falls in petrol prices. The best responses were those that demonstrated an understanding of the PED and made it clear that households are better off because their (weekly/monthly) consumption of fuel will cost less when petrol prices are falling.

While lower oil prices helps to boost Australia's TOT and reduce costs of production for Australian businesses, there are a host of other imported raw materials or productive inputs whose prices will vary in foreign markets. This includes the prices of machinery, vehicles, computer equipment and parts or other intermediate inputs used in Australian industries such as transport, manufacturing, mining and telecommunications sector. To the extent that the prices of these Australian imported inputs falls, it results in a rise in the TOT (as the prices paid for imports falls) which leads to additional supply side benefits to the economy. It helps to increase AS, or productive capacity, leading to lower prices and an increase in AD, which then boosts economic growth, employment and living standards.

The exchange rate, its meaning and measurement and the factors affecting its value

The exchange rate was considered as an AD and AS factor affecting economic growth, inflation and unemployment earlier in the Study Guide. It is usually measured by the value of AUD compared to the USD or the Trade Weighted Index (where the TWI is the average value of the AUD compared to a weighted basket of foreign currencies of Australia's trading partners).

Australia seeks to ensure that the exchange rate is stable in the sense that it is not subject to volatile rises and falls. A volatile AUD would indicate that there is international uncertainty about the value of AUD. This deters investment in Australian assets, placing (further) downward pressure on the AUD, potentially increasing our international debt obligations because:

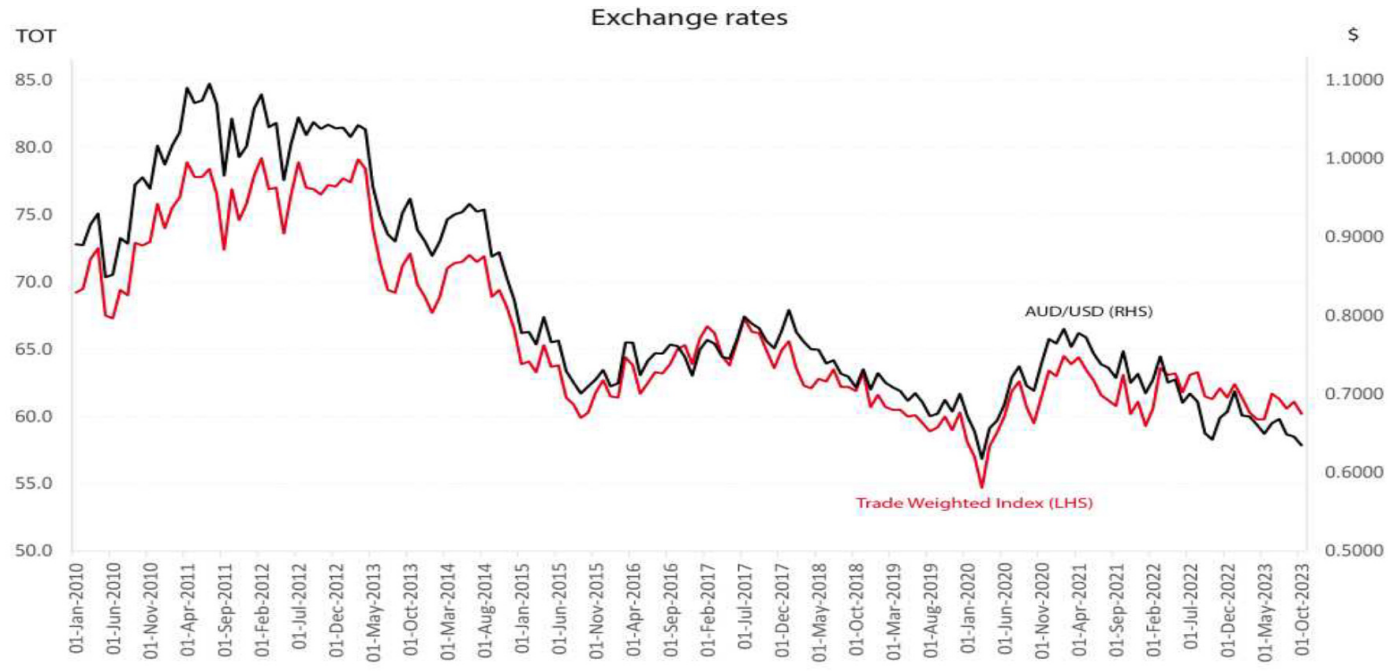
- Any debt denominated in foreign currency increases; and
- Australians must pay a higher risk premium for overseas borrowings (i.e. higher interest rates);

Exam Tip: As noted earlier, given that Australia currently has a net foreign currency asset position (i.e. most of our foreign liabilities are actually denominated in AUD while most of our foreign assets are denominated in foreign currency) a fall in the AUD actually helps to reduce the level of value of Australia's NFLs (NFD + NFE).

The value of the AUD is primarily determined by the demand and supply for our currency in the foreign exchange market. The demand and supply is influenced by a number of factors such as trade flows (imports and exports) and, increasingly, sentiment and speculation driven by current and future financial returns that are often based on changes in relative interest rates, or investment returns internationally (e.g. investing in Australian mines during the boom years). This is because money is now much more easily moved around the world to the areas where the greatest return is perceived to exist.

Factors affecting the value of the exchange rate

Changes to the value of Australia's exchange rate since 2010 (both against the USD and in trade weighted terms) can be seen in the chart below.



The chart shows that the exchange rate reached a peak in 2011, climbing towards USD 1.10 before declining to USD 0.70 in late 2015 before recovering to above USD 0.80 in early 2018. Between January 2018 and March 2020, the exchange rate depreciated to a low of USD 0.55 but then appreciated to a USD 0.76 in early 2021. Since then, the exchange rate has depreciated to a low of USD 0.63 in late 2023. Over the past three years, the exchange rate has depreciated markedly against the USD, from USD 0.74 (Nov 2020) to USD 0.63 (Oct 2023). However, when measured by the TWI over the same period, the depreciation has been less significant, with the TWI falling from 61.5 to 60.2 over the same period. This is primarily due to the fact that US interest rates have increased by more than Australia and the rest of the world (see interest rate differential below), exerting downward pressure on Australia's exchange rate relative to the USA but little change against other currencies.

Factors that will exert downward pressure on the value of the exchange rate include the following:

A **lower interest rate differential** between Australia and the rest of the world such that Australian interest rates are relatively lower than those offered overseas. This causes capital outflow (funds exiting the country in search of higher offshore returns) or reduced capital inflow, which reduces the net demand for AUD on foreign exchange markets and decreases the value of the AUD. This has been a major factor behind the depreciating exchange rate against the USD over the past couple of years, given that the USA tightened monetary policy (i.e. raised interest rates), more aggressively than Australia, which caused net capital outflow as investors were attracted to the relatively higher interest rates offered in the USA. This raised the supply of AUD on foreign exchange markets and caused Australia's exchange rate to depreciate.

Exam Tip: Students often get confused about both the direction of foreign flows and the reason for these flows when there is a change in the interest rate differential. This was once again demonstrated by student responses to Q2b of the 2023 exam. It is important to remember that reference to capital inflow simply means that money is coming into Australia, while capital outflow refers to money exiting Australia. The flows in this context refer to flows between lenders and borrowers, where the lenders are considered the investors (investing in interest bearing assets such as bonds). So the lower 'relative' interest rates in Australia causes investors (i.e. lenders) to take their money out of Australia in order to lend (invest) to USA borrowers (e.g. the issuers or holders of the bonds). This causes both an increase in the demand for USD and an increase in the supply of AUD on foreign exchange markets, both of which causing the value of the AUD to fall relative to the USD.

Exam Tip: Q1a of the 2020 exam required students to describe how a lower cash rate (i.e. interest rates) in Australia puts downward pressure on the value of the exchange rate. Students struggle to make the important connections when linking a change in interest rates to the exchange rate. The best response will have been those that referenced important concepts such as interest rate differentials, capital inflow/capital outflow and the demand/supply of the Australian dollar on foreign currency markets. Students should note that is not enough to simply say that lower interest rates will reduce the demand for the AUD on foreign currency markets.

Exam Tip: When responding to Q2b in the 2023 exam (which required students to account for the downward trend in the AUD), it was common for students to refer to a fall in Australian interest rates as a cause, when they needed to appreciate that interest rates have actually risen in Australia, and that they have only fallen 'relative to USA interest rates'. This mistake will have prevented them from achieving full marks.

- An increase in the ***demand for imports relative to the demand for exports***, which causes the supply of AUD on the foreign exchange market to rise relatively to the demand, forcing the value of the AUD to fall.

Exam Tip: Both the 2020 exam (Q1b) and 2019 exam (Q4b) required students to explain how lower economic growth overseas is likely to influence the exchange rate. While many students were able to make a link between lower growth overseas and net export demand, they were unable to extend their response by linking this to the lower value of Australia's exchange rate. The best responses were those who were prepared to unpack the link between lower export demand and the demand for the AUD on foreign currency markets.

- A ***fall in the TOT*** (or lower commodity prices) which results in any given volume of Australian exports earning less relative to a given volume of imports, which reduces the net demand for AUD and therefore reduces its value.

Exam Tip: Q1b of the 2020 question, students were required to explain how a favourable movement in the TOT was likely to influence the exchange rate. Students should note that it is insufficient to simply say that 'a higher TOT increases the demand for the AUD and therefore causes the exchange rate to increase'. It is necessary to explain why the demand for the AUD increases (e.g. because any given volume of exports will yield a higher value which requires foreign purchasers to demand more AUD in the FX market which then increases the value of the AUD).

- A higher ***relative rate of inflation*** in Australia compared with other countries will, over time, reduce Australia's international competitiveness, negatively impact on net export demand, decrease the demand (and increase the supply) of the AUD on foreign exchange markets and reduce its value.
- A fall in Australia's ***credit rating*** from its current AAA level would mean that, as a country, we have become less creditworthy (or financially secure) and considered to be a more risky investment proposition for foreign investors. For example, if Australia's NFD levels increased significantly, threatening our ability to service foreign debt into the future, it would tend to reduce the demand for various Australian investment assets (including the AUD itself from ***foreign currency speculators***), which then contributes to an exchange rate depreciation as fewer funds enter the country (reducing the demand for the AUD) and more funds exit the country as investors seek out less risky investments (increasing the supply of the AUD).
- A movement of ***capital flows*** away from Australia for reasons other than a change in the interest rate differential, such as concern about Australia's debt levels (either net government debt or net foreign debt) and its implications for Australia's credit rating. For example, in late 2016, credit ratings agencies were on the verge of downgrading Australia's credit rating following news of a further blow out in the budget deficit (and net government debt) over the next few years. This caused the AUD to fall as currency speculators (and investors more generally) invested in other currencies in order to avoid losses that could materialise if Australia was considered a riskier investment destination.

Of course, when each of the above factors work in the opposite direction, there will pressure on the Australian exchange rate to appreciate.

Exam Tip: When we examine the factors impacting on the exchange rate, or indeed any economic variable, it is useful to remember that there are a host of factors that may have an influence. For example, in isolation, a rising TOT should see a higher exchange rate, as the demand for AUD rises. However, over 2021, despite the TOT rising significantly, the exchange rate depreciated because other factors were more dominant, such as lower (relative) interest rates. This is why economists are often fond of including the rider 'ceteris paribus' when analysing the relationship between economic variables.

Exam Tip: Q14 (MC) of the 2018 exam was a tricky question relating to the impact on US interest rates and the Australian dollar following an increase in US inflation. Many students were able to identify that US interest rates would rise, but there was uncertainty about the impact on the Australian dollar. This is because, on the one hand, a higher US rate of inflation (if sustained) should ultimately result in a depreciation of the US exchange over time (i.e. an appreciation the Australian dollar). On the other hand, the higher US interest rates will attract capital inflow into the USA (or capital outflow from Australia) resulting in a depreciation of the Australian dollar. While it is true that higher inflation in the USA was what came first, its impact on exchange rates will be outweighed by the impact of higher US interest rates, such that the Australian dollar would be expected to depreciate. Indeed, this was a major factor behind the fall in the Australian dollar over 2018. This explains why an increase in inflation in Australia will typically be followed by an exchange rate appreciation as foreign currency dealers anticipate a tightening of monetary policy (higher interest rates) and the capital inflow that follows. Over time, however, the higher relative rate of inflation should indeed reduce competitiveness and negatively impact on the value of the Australian dollar.

The effect of exchange rate movements on our domestic macroeconomic goals and living standards

Earlier in the Study Guide (AOS 2) we saw that a change in the Australian exchange rate tended to have both AD and AS effects on the economy. On the demand side, a lower AUD causes:

- an increase in international competitiveness, which boosts net export demand, stimulates AD and real GDP, and helps to achieve the goal of ***strong and sustainable rates of economic growth.***
- an increase in the demand for labour following the rise in economic growth, which reduces the unemployment rate and assists with the achievement of the ***full employment goal***.
- an increase in demand inflationary pressure following the rise in net export demand (and the incomes and additional spending this generates) which makes it more difficult to achieve ***price stability***.

On the supply side, a lower AUD causes:

- the costs of production and cost inflation to increase as the prices of intermediate and capital imports rise. This also makes it more difficult to achieve ***price stability***.
- A decrease in international competitiveness as the higher cost inflation reduces net export demand and AD. This will then work against the demand side benefits for ***economic growth*** and ***full employment***.

Overall, the demand side benefits stemming from a change in the exchange rates will outweigh the supply side costs such that a fall in the exchange rate will boost economic and employment growth, which in turn contributes to growth in incomes and increases ***material living standards***. With respect to inflation, the lower exchange rate will result in reinforcing AD and AS effects, increasing inflation and making it more difficult to achieve price stability.

Exam Tip: Q2c of the 2023 exam required students to explain how the depreciation of the AUD is likely to have affected the achievement of one macroeconomic goal and living standards. Given that it is relatively easy to connect a lower AUD with stronger growth in net exports, AD, economic growth and employment, a good choice of goal was SSEG or FE. This is because the link to living standards is relatively straigthforward and unambiguos. However, the choice of price stability as the goal can be problematic because it is common for students to link the higher rate of inflation to living standards and ignore the benefits to living standards stemming from higher rates of economic growth, employment and incomes. Accordingly, the best responses will be from those who argue that, despite the negative effects on inflation, the lower AUD will have helped to improve living standards.

Exam Tip: When responding to Q2c of the 2023 exam, some students attempted to argue that the depreciation reduces the value of net exports. While this can indeed occur, particularly in the short run, as the price effect can dominate the volume effect (sometimes referred to as the J-curve effect), this needed to clarified. Given that a knowledge of the J-curve is not required knowledge in VCE Economics, students are best served by focusing on the beneficial effects that a depreciation has for the value of net exports, AD and indeed the CA balance. Also refer to next Exam Tip.

A lower exchange rate will help to improve the ***current account balance*** over time given that international competitiveness improves and net demand rises as a result. This increase in net exports therefore increases export credits relative to import debits, boosting the BOMT and BOGS, and reducing the size of the CAD.

To the extent that any NFD is denominated in foreign currencies (e.g. USD), a lower exchange rate will also lead to an increase in debits within the net primary income section of the current account (as more AUD is required to service debt denominated in foreign currencies). However, given that most of Australia' foreign debt is denominated in Australian currency and most of our foreign assets are denominated in USD, this effect is somewhat reversed such that a lower exchange rate will actually help to reduce the CAD (or increase the CAS). In fact, given that most of Australia's stock of foreign assets (e.g. Australian owned shares in foreign companies or foreign bonds) is denominated in foreign currency, an exchange rate depreciation can actually help to improve the NPI section as the value of income credits from dividends/rent etc. will increase when converted into Australian currency.

Exam Tip: The beneficial impact of a lower exchange rate stems from the fact that there is a substitution into Australian exports and away from imports, which leads to higher net export values via the influence on 'volumes'. However, it is indeed possible for a depreciation to reduce the current balance in the short term. This is because it can take time to change export and import contracts which means that any given volume exported or imported will be subject to a price effect that works to reduce export values and increase import values. For example, the lower AUD will increase the overall price we pay for any given volume of imports that had already been ordered by Australians, as well as decrease the price we receive for any given volume of exports that had already been ordered by foreigners. This necessarily reduces export values and increases import values, reducing net exports and worsening the current account. This short term effect is often referred to as the 'J-curve' because negative impact on net export values will be reversed over time as the volume effect comes more into play. Knowledge of the J-curve is not required knowledge in VCE Economics.

Exam Tip: When students are asked to discuss a factor contributing to a rise in the value of the AUD, those who talk about its effects cannot be awarded marks, irrespective of the sophistication of the response. In addition, students need to do more than say the dollar rose because 'demand for the AUD increased' (or 'the supply of the AUD decreased'). Students must 'dig deeper' and uncover a likely reason for the fall the rise in demand (and value), such as a rise in commodity prices/TOT. Similarly, if students are asked to discuss the effects of a rise in the AUD, no marks can be awarded if the cause of the appreciation is discussed.

Exam Tip: If students are asked to demonstrate an understanding of how a fall in the AUD impacts on the current account (CA), such as Q1c of the 2020 exam, students will have scope to focus on any section of the CA. The BOGS effect is the easiest to explain and is the one most likely to get students full marks. The BOGS plus the net (primary) income effect would not be required, and the net (primary) income effect 'on its own' should be avoided. Students should ensure that their response makes reference to the overall effect on the current account balance - has the lower AUD caused the current account balance to improve (e.g. a higher CAS) or deteriorate? The inclusion of specific balance of payments terminology (e.g. debits and credits as well accounts within the BOGS, such as the BOMT) will serve to enhance the quality of student responses.

Exam Tip: Q1c of the 2020 exam also required students to connect a lower exchange rate to material and non-material living standards, which was a challenging question for students. With respect to material living standards, the easiest approach is to connect the growth in net exports to growth in AD, employment and real GDP per capita. With respect to non-material living standards, students could link the stronger rate of economic growth with damage to the environment (e.g. pollution or CO2 emissions) or link growth in real GDP per capita to the non-material benefits related to greater employment/lower unemployment such as self esteem and mental well being.

Factors affecting International competitiveness

International competitiveness refers to a country's ability to compete in global markets for goods and services, where this competition can be based on price or non-price factors (e.g. service or quality). An improvement in Australia's international competitiveness means that Australian firms or industries are producing goods and services at lower prices and/or higher quality compared to competitors overseas. [**Trade liberalisation** is one of the major policy initiatives or global developments that has helped to boost Australia's international competitiveness, and this will be considered separately in Part 2 of the Study Guide in the context of AS policies.]

Some other key factors affecting international competitiveness include productivity, production costs, availability of natural resources, exchange rates and relative rates of inflation.

Productivity helps to reduce **average costs of production** and/or raise the quality of goods of services because inputs (such as labour and capital) and able to produce more or better quality goods for every hour employed in businesses. This helps to increase international competitiveness as Australian goods and services become relatively more attractive to foreign buyers (via lower prices and/or better quality), and domestic import competing producers will be better able to compete against imports.

Lower **costs of production** can occur for reasons other than a change in productivity, such as lower costs of labour that might be a result of growth in the supply of labour or lower cost of other inputs (e.g. lower cost intermediate or capital inputs from abroad). These types of favourable supply side events will enable businesses to pass on some (or all) of the lower costs to consumers via lower prices, which helps to reduce the rate of inflation and improve international competitiveness.

A reduction in Australia's **relative rate of inflation** (i.e. relative to the rest of the world) will also boost the international competitiveness of Australian businesses. While the lower inflation rate may be a result of higher productivity or lower production costs, as discussed above (i.e. emanating from the 'supply side' and resulting in lower cost inflation), it may also be a result of lower growth in AD (i.e. emanating from the 'demand side' and resulting in lower demand inflation). Either way, the lower growth in prices (disinflation), or reduction in prices (deflation), will once again make Australian goods and services relatively more competitive in the global market.

The **availability of natural resources** will also influence Australia's international competitiveness. The discovery of new, higher quality and/or rare mineral deposits, for example, will increase the Australian supply of these resources, helping to reduce prices and increase the ability to attract a greater share of the global market. A major driver behind Australia's relatively high level of international competitiveness in the market for natural resources is the fact that we enjoy a comparative advantage in the production of agricultural and mining goods, by virtue of the size of the country and the quality/quantity of the resources naturally available.

Movements in the value of the **exchange rate** will also influence international competitiveness. The effects of these exchange rate movements was discussed in detail earlier in the Study Guide in relation to AD and AS factors affecting economic activity. In short, a lower exchange rate will mean that the price paid for exports in foreign currencies will be lower than before, enabling foreign importers to purchase more Australian exports for any given amount of foreign currency (or purchase any given quantity of exports for a lower amount of foreign currency). This means that Australian exporters will be in a better position to increase their share of the global market. In addition, a lower exchange rate will increase the domestic price of imports, which results in local import competing businesses being in a better position to win market share away from importers.

The effect of movements in international competitiveness on the macroeconomic goals and living standards

An increase in international competitiveness should assist with the achievement of **price stability**, **strong and sustainable growth** and **full employment** and lift Australian living standards. This occurs because:

- More competitive goods and services reflects (or leads to) lower prices which helps to contain the rate of inflation to within 2-3% over time.
- Lower prices (or greater international competitiveness) will lead to an increase in AD (e.g. growth in net export demand), which stimulates real GDP and enables economic growth to be stronger and more sustainable, given that it is driven by supply side improvements to the economy (i.e. the AS curve shifting to the right).
- Stronger economic growth over time will help to increase the demand for labour, which creates employment and helps to reduce the rate of unemployment towards the government's full employment level (approximately 4.25%).

Overall, lower prices combined with stronger growth in production, employment and incomes will all contribute to growth in material **living standards** given that Australians (on average) will have access to more goods and services.

REVIEW/APPLICATION QUESTIONS 7 – Australia and the world economy

1. ***Discuss how international transactions can boost living standards.***
2. ***Distinguish the terms 'balance of payments' and 'balance on merchandise trade'.***
3. ***Draw a chart that outlines the structure of the Balance of Payments that clearly shows four sections of the Current Account and two sections of the Capital and Financial Account (CAFA).***
4. ***Describe the relationship between the Current Account and the CAFA and outline how a higher current account surplus influences the CAFA.***
5. ***Explain why Australia can experience a Balance on goods and services surplus and yet still experience a CAD.***
6. ***Explain what is meant by the expression 'a sustainable CAD and NFD'.***
7. ***Outline the two major causes of the CAD.***
8. ***Explain what is meant by the statement that 'Australia's CAB is partly structural and partly cyclical'.***
9. ***A CAD is not a problem. Discuss.***
10. ***Describe two possible factors contributing to the current account briefly returning to deficit in 2022.***
11. ***Provide two examples of transactions that are recorded in the current account and distinguish these from another two transactions that are recorded in the CAFA.***
12. ***Using the charts provided earlier, describe the movement in the CAB over the past two years and provide two possible causes for this movement.***
13. ***Distinguish net foreign debt from net foreign liabilities.***
14. ***Using the charts provided earlier, describe the movement in net foreign liabilities over the past two years and provide a possible cause for this movement.***
15. ***Describe the trend movement in Net Foreign Equity and discuss the implications for external stability.***
16. ***Outline the possible negative implications of a CAD well above 6% of GDP. In your answer, refer to Australia's credit rating.***
17. ***Discuss why it is not possible to pay off a CAD.***
18. ***Explain how high levels for both the CAD and NFD are likely to impact on the value of the AUD.***
19. ***Explain how a return of the current account to deficit in the future is likely to affect the stock of Net Foreign Liabilities.***
20. ***Define the Terms of Trade (TOT).***
21. ***Using the charts provided earlier, describe and account for the trend in the TOT over the past two years.***
22. ***Explain how a high(er) TOT helps to achieve SSEG and FE, but can make it more difficult to achieve Price Stability (PS).***
23. ***Describe three factors that might cause the exchange rate to rise.***
24. ***Describe how a higher exchange rate is likely to affect the achievement of SSEG, FE and PS. Distinguish the demand and supply side effects.***
25. ***Explain how a higher dollar can impact on the CAB.***
26. ***Outline three separate factors that will impact on Australia's international competitiveness.***
27. ***Describe how an improvement in international competitiveness is expected to influence the achievement of Australia's macroeconomic goals and living standards.***

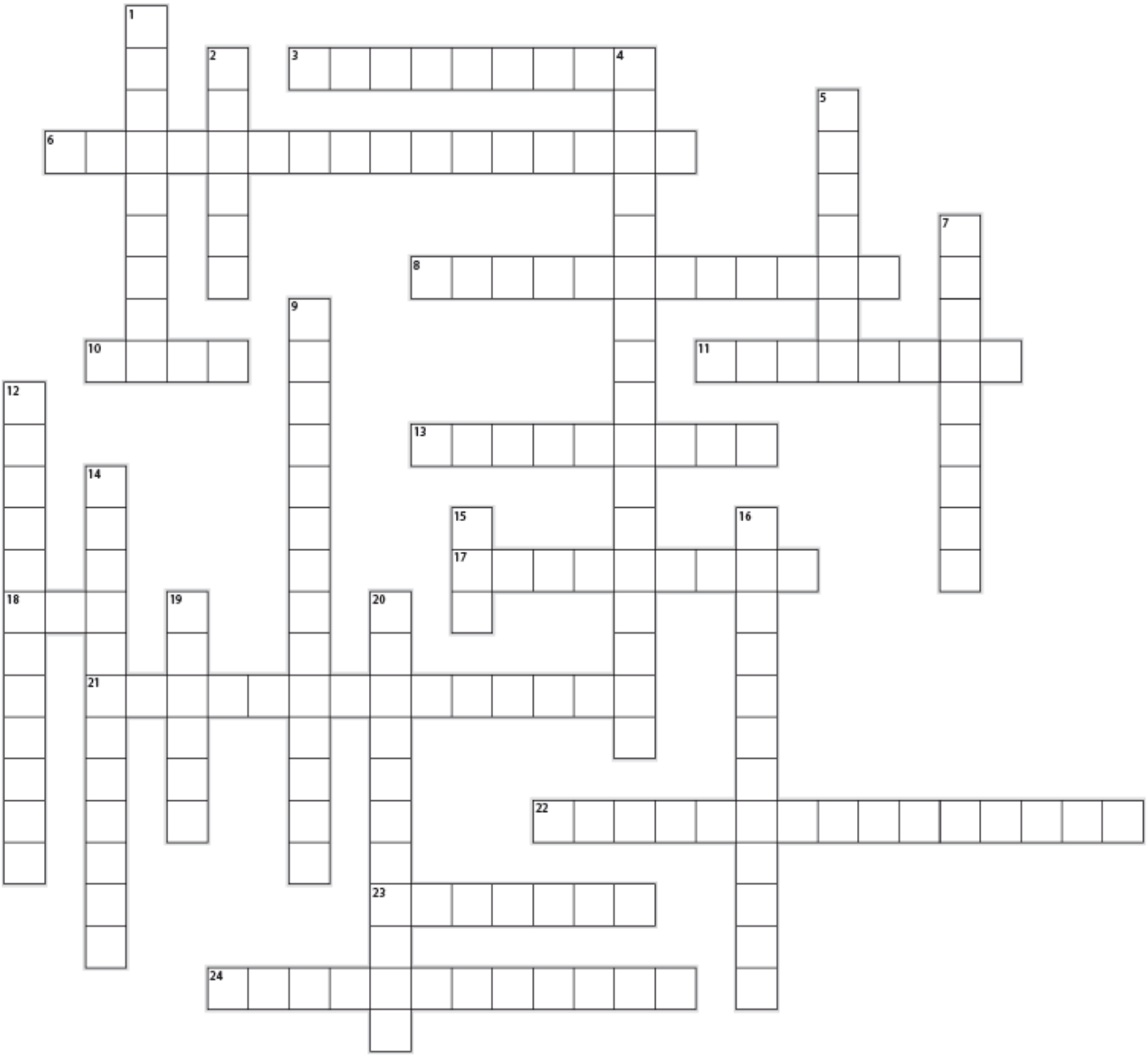
Quick revision crossword No 7: Australia and the world economy

Across

3. The largest section in the current account that is the primary reason for the CAD (2 words)
6. Part of Net foreign liabilities that has fallen below zero in the last decade (3 words)
8. The rate at which one international currency is traded for another (2 words)
10. A section of the current account that includes the Balance on Merchandise Trade and net services (acronym)
11. When the economy enters a downturn the CAD tends to fall and when it enters the recovery the CAD tends to rise. This is referred to as the _____ component of the current account.
13. The macroeconomic variable increases when the exchange rate falls, making it more difficult to achieve one of the key macroeconomic goals of the government
17. A form of protection, like tariffs, but involving an increase in government expenditure
18. When Australia is spending beyond its means it will tend to cause this to rise (acronym)
21. One part of the Balance of Payments (2 words)
22. When the value of the AUD depreciates, it will improve Australia's international _____
23. A form of import protection that focuses on price controls
24. When the value of a currency falls

Down

1. This type of investment is typically made up of purchases of shares (or stocks) by foreigners
2. A form of import protection that focuses on volume controls
4. When Australia is able to meet its international financial obligations that result from transactions with the rest of the world without jeopardising economic growth and other economic objectives (2 words)
5. This account in the CAFA is relatively insignificant
7. This account is made up of official and non-official capital flows
9. The total amount of debt owed to overseas interests minus the total amount of debt owed to Australia (3 words)
12. When the value of the currency rises
14. When this increases, it will (ceteris paribus) result in an increase in international competitiveness
15. The country used as the standard benchmark when determining the value of the Australian currency (acronym)
16. This will tend to rise for Australia when there is an increase in commodity prices (3 words)
19. This type of foreign investment includes the setting up a production facility or plant
20. The combination of net foreign debt and net foreign equity is referred to as net foreign _____



TEST YOURSELF: 50 MULTIPLE CHOICE QUESTIONS – AREA OF STUDY 2 & 3

1. The unemployment rate is calculated as the number of

(a) unemployed persons divided by number of employed persons
(b) persons in the labour force divided by the number of unemployed
(c) unemployed divided by size of the labour force
(d) employed persons divided by number of unemployed persons

2. The participation rate will increase if

(a) the retirement age is reduced from 60 to 55 years
(b) there is an increase in family allowance payments
(c) conditions worsen and more workers move from full-time to part-time hours
d) women are encouraged to enter the workforce

3. An example of structural unemployment is the

(a) decision to stand down employees with redundant skills
(b) shutdown of a manufacturing plant due to a world recession
(c) decision by an employee to take a holiday before looking for a new job
(d) decision by an employee to leave Australia to seek work overseas

Questions 4 to 5 refer to the following

4. Consider the following data for a certain region

total population	800,000
employed persons	440,000
working age population (15-64 years)	600,000
unemployed persons	40,000
unfilled vacancies	20,000

The size of the labour force is

(a) 440,000 (c) 500,000
(b) 480,000 (d) 600,000

5 The labour force participation rate in this region is

(a) 80% (c) 50%
(b) 60% (d) 5%

6. When productivity increases it is likely to:

(a) worsen external stability and decrease inflation
(b) improve external stability and decrease inflation
(c) improve external stability and increase inflation
(d) improve external stability and not affect inflation

7 If average interest rates are 6% in Australia and the USA increased their interest rates from 1% to 4% then this would have the following effect on the Australian economy

(a) Cause an appreciation of the Aussie dollar
(b) Cause a depreciation of the Aussie dollar
(c) Cause the Reserve Bank to decrease Australian interest rates
(d) Cause international investors to divert their funds from the USA to Australia

8. If wages are increased by 4% when productivity increases by 6%, this is likely to:

(a) reduce inflationary pressure
(b) increase inflationary pressure
(c) cause a decrease in Australia's international competitiveness
(d) not have any effect on inflation but increase our competitiveness

9. Increases in aggregate demand in the economy

(a) always lead to demand inflation
(b) never lead to demand inflation
(c) cause demand inflation at or near full employment (productive capacity)
(d) cause demand inflation regardless of whether the economy is in a Boom or recession

10 A reduction in the inflation rate is regarded as desirable because

(a) imports will be more competitive against domestic industry
(b) business confidence and investment is likely to be improved
(c) inflationary expectations are likely to be higher
(d) exporters will be less competitive

11. Which of the following is likely to reduce Australia's rate of inflation?

(a) an increase in aggregate demand
(b) an increase in import prices
(c) a depreciation of the AUD
(d) tariff reductions

12. Low domestic rates of inflation encourage

(a) increased average weekly earnings
(b) reduction of domestic living standards
(c) redistribution of income to importers
(d) redistribution of income to exporters

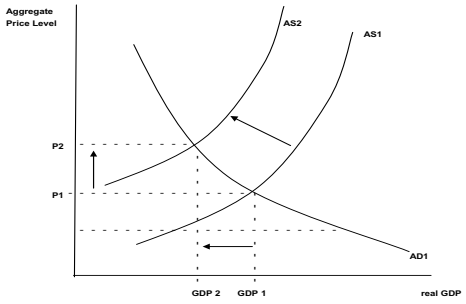
13 Lower rates of domestic inflation compared with our international competitors

(a) should lower productivity levels in Australia compared to overseas countries
(b) should lead to a depreciation of AUD on world markets
(c) is likely to lead to a reduction in Australia's Current Account Deficit
(d) is likely to lead to lower real wages in Australia

14. Consider the following aggregate demand/aggregate supply schedule

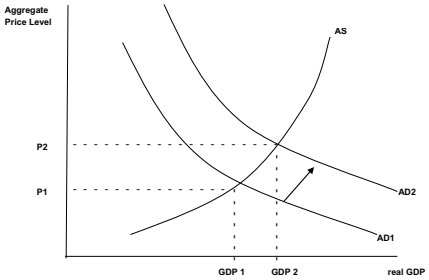
An increase in price from P^O to P^1 may

(a) have been caused by an increase in consumer confidence
(b) be the result of higher disposable income levels of consumers
(c) have been the result of higher real unit labour costs
(d) have been due to an increase in government expenditure



15 Consider the aggregate demand/aggregate supply diagram below. An increase in price from P^O to P1 may be the result of

(a) a depreciation of the AUD
(b) an increase in personal income taxes
(c) lower real unit labour costs
(d) an increase in productivity



16 The underlying inflation rate

(a) is usually lower than the published (headline) inflation rate when the prices of volatile goods is falling faster than other goods
(b) includes all one-off or volatile price increases in its measurement
(c) is usually higher than the published (headline) inflation rate when the prices of volatile goods is rising faster than other goods
(d) is usually higher than the published (headline) inflation rate when the prices of volatile goods is falling faster than other goods

17 Economic growth is best defined as an increase in

(a) the value of output measured by the RBA
(b) the value of output in measured in nominal dollar terms
(c) the value of output in measured in constant dollar terms
(d) the value of output in measured in current dollar terms

18 GDP per capita is used to indicate changes in which of the following:

a) Production values for each Australian
b) Inflation impact for each Australian
c) Economic prosperity for each Australian
d) Productivity contribution by each Australian

19 Interest payments resulting from borrowings from overseas are recorded in Australia's balance of payments as a

(a) debit in current account
(b) credit in current account
(c) debit in capital and financial account
(d) credit on capital and financial account

Questions 20 to 21 are based on the following hypothetical figures for Australia's balance of payments:

	$m
Exports	**65000**
Imports	**72000**
Net Services	**-3000**
Net primary and secondary incomes	**-11000**

20. The balance on merchandise trade is

(a) -7000m (c) -10000m
(b) 7000m (d) -20000m

21 The balance of payments on current account shows a

(a) deficit of $7000m (b) deficit of $14000m
(c) deficit of $20000m (d) surplus of $7000m

22 Which of the following would contribute to an immediate improvement in Australia's current account deficit?

(i) a reduction in interest payments made to overseas lenders
(ii) greater purchases of shares in foreign countries
(iii) a decrease in dividends paid overseas

(a) (i) and (ii) (c) (i) and (iii)
(b) (ii) and (iii) (d) (i), (ii) and (iii)

23 Which of the following is most likely to be responsible for the target rate of inflation not being achieved?

(a) a fall in the price of internationally traded goods and services
(b) domestic demand rising faster than the productive capacity of the economy
(c) subdued growth of average weekly earnings
(d) a low level of inflationary expectations

24 Which of the following is most likely to reduce the labour force participation rate?

(a) an increase in the level of total employment
(b) a decrease in the number of 15-24 year olds undertaking full-time education
(c) an increase in the unemployment rate
(d) a decrease in the unemployment rate

25 Which of the following is least likely to affect the rate of economic growth in Australia on the supply side?

(a) the higher proportion of the population in the labour force
(b) technological progress that raises productivity in the economy
(c) the economy produces capital at a faster rate than the population grows
(d) an increase in the level of household disposable income

26 Which of the following transactions is a credit item in the current account of Australia's balance of payments?

(a) the cost of hiring a ship from Japan to carry iron ore to Japan
(b) the payment of interest to Japanese residents who hold Australian Treasury bonds
(c) the export of iron ore to Japan
(d) the import of Toyota cars from Japan

27 Which of the following is likely to have an effect on the level of unemployment that is different from that of the other three?

(a) an increase in the rate of personal income tax
(b) a depreciation of the Australian dollar
(c) stronger growth in the USA and Japan
(d) a decrease in the level of general interest rates

28 Interest rates can be regarded as a demand factor influencing the rate of economic growth. What makes interest rates a demand factor is their influence on?

(a) the cost of producing goods and services
(b) the cost of borrowing money for Consumption and Investment
(c) the amount of social wage income
(d) the amount of market income

29 Which of the following factors cannot be regarded as both a demand and supply factor affecting economic growth?

(a) interest rates
(b) productivity
(c) wages
(d) the value of the Australian dollar

30 Under which of the following circumstances will a depreciation of the Australian dollar result in an increase in the value of Australia's foreign debt?

(a) when Australian residents borrow from Australian banks in order to speculate in foreign currencies
(b) when Australian residents borrow from Australian banks on the security of property held in foreign countries
(c) when Australian debt is the result of loans from overseas banks and denominated in Australian currency
(d) when Australian debt is the result of borrowing in a foreign currency

31 A growth in real GDP of 4% per annum suggests that

(a) the economy is experiencing a decline in its import purchases
(b) the economy is experiencing growth in its export sales
(c) after adjusting for inflation, the value of production has grown by 4%
(d) after adjusting for inflation, the number of goods and services produced has grown by 4%

31. Which of the following groups of people are included in the calculation of the labour force underutilisation rate despite being employed?

(a) The hidden unemployed
(b) The underemployed
(c) The discouraged workers
(d) Part-time workers

32. Which international transaction is unlikely to boost Australian living standards in the short term?

(a) The receipt of tourism export sales
(b) The purchase of crude oil from Saudi Arabia
(c) The purchase of submarines from Japan
(d) The purchase of computer equipment from the USA

34 Which of the following factors is likely to have an effect on Consumption expenditure which is different from that of the other three factors?

(a) An increase in the savings ratio
(b) A decrease in the rates of personal income tax
(c) A decrease in the level of consumer confidence
(d) An increase in the level of unemployment

35 Which of the following is both a demand and supply factor influencing the level of economic growth?

(a) The level of environmental protection
(b) The level of disposable income
(c) The cost of raw materials
(d) Interest rates

36 When the rate of economic growth exceeds approximately 5%, it means that

(a) inflationary pressure is likely to decrease
(b) there is likely to be a greater pressure on the CAD
(c) NFD is likely to decrease
(d) unemployment is likely to rise

37 As a consequence of slower growth in China, which one of the following goals would be easiest to achieve in Australia?

(a) Full employment
(b) Economic growth
(c) Higher Living standards
(d) Low Inflation

38 A fall in the exchange rate is likely to result in

(a) a fall in the price of imported shoes and a decrease in the quantity of imported shoes
(b) a fall in the price of imported shoes and an increase in the quantity of imported shoes
(c) a rise in the price of imported shoes and an increase in the quantity of imported shoes
(d) a rise in the price of imported shoes and a decrease in the quantity of imported shoes

39 Which of the following events is likely to reduce Australia's credit rating?

(a) A large increase in the value of the Australian exchange rate
(b) Growth in the Terms of Trade to record levels
(c) Net foreign Equity becoming more and more negative over time
(d) An increase in net foreign debt to 200% of GDP

40 Which of the following is unlikely to result in an increase in international competitiveness?

(a) An increase in productivity
(b) An increase in unit labour costs
(c) A decrease in the exchange rate
(d) An increase in the availability of natural resources

41 Which of the following could be regarded as a demand factor affecting economic growth?

(a) a change in taxation rates
(b) the size and productivity of the labour force
(c) the cost and availability of raw materials
(d) technological change

42 When the government achieves price stability via the elimination of demand inflationary pressure in the economy, it is likely to be <u>associated with</u>:

(a) lower levels of unemployment
(b) higher levels of economics growth
(c) an increase in national income
(d) Lower levels of employment growth

43 When the government achieves price stability, it is likely to <u>cause</u>:

(a) lower levels of unemployment
(b) lower levels of economics growth
(c) a deterioration in income equality
(d) higher levels of unemployment

44 Which of the following is most likely to reduce the current account deficit?

(a) a lower level of technical efficiency
(b) a reduction in the terms of trade
(c) a lower exchange rate
(d) higher levels of net foreign liabilities

45 In relation to Australia's balance of payments statistics over 2022, which of the following statements is correct?

(a) Net Foreign Debt has continued to fall
(b) The current account balance moved into deficit
(c) The Net Primary Income deficit fell
(d) The Balance on Goods and Services moved into deficit

46 When price stability is achieved, it is likely to lead to:

a) a decrease in the CAD
b) a decrease in employment
c) a decrease in economic growth
d) a decrease in living standards

47 When a country fails to achieve price stability, which of the following is likely to occur as a consequence?

(a) an increase in Investment
(b) an increase in Consumer confidence
(c) an increase in the level of real wages
(d) an increase in the current account deficit

48 An increase in interest rates is likely to

(a) weaken the exchange rate (i.e. the AUD)
(b) improve the competitiveness of our traded goods sector
(c) jeopardise the government's chances of achieving full employment
(d) increase the rate of economic growth

49 The achievement of full employment is likely to

(a) place pressure on the inflation rate
(b) lower real incomes in the economy
(c) have little impact on economic growth
(d) worsen the extent of inequality in the distribution of income

50 Stronger rates of Gross National Expenditure (i.e. final demand) will tend to

(a) jeopardise the achievement of full employment
(b) cause a rise in both the CAD and the NFD
(c) worsen the distribution of income and wealth in the economy
(d) dampening investor and consumer confidence

UNIT 3 MINI EXAM NO. 3
AREA OF STUDY 3
Total marks = 40

Section A

Multiple choice (total marks = 10)

Section B

Short answer questions (total marks = 30)

Section A: multiple choice (10 MARKS)

1. The terms of trade decreased late in 2022. If this trend continues into 2023 as expected, it is likely to contribute to:

(a) A rise in the exchange rate
(b) Downward pressure on Net Foreign Debt
(c) A higher current account deficit (CAD)
(d) A fall in the price of commodities

2. Which of the following events is likely to reduce the current account deficit in 2023?

(a) The fall in the Terms of Trade
(b) The fall in the Trade Weighted Index
(c) Slower growth in China
(d) A fall in credits relative to debits in the Balance on Merchandise Trade

3. The payment of dividends to overseas shareholders will appear in the balance of payments as:

(a) a credit in the Capital and Financial Account
(b) a debit in the Capital and Financial Account
(c) a credit in the Current Account
(d) a debit in the Current Account

4. **Which of the following is not found in the Current Account of the Balance of Payments?**
   (a) Receipt of dividends by Australian companies operating offshore
   (b) Repayment of loans to foreign lenders
   (c) Spending in Australia by foreign tourists
   (d) Receipt of school fees by foreign students studying in Australia

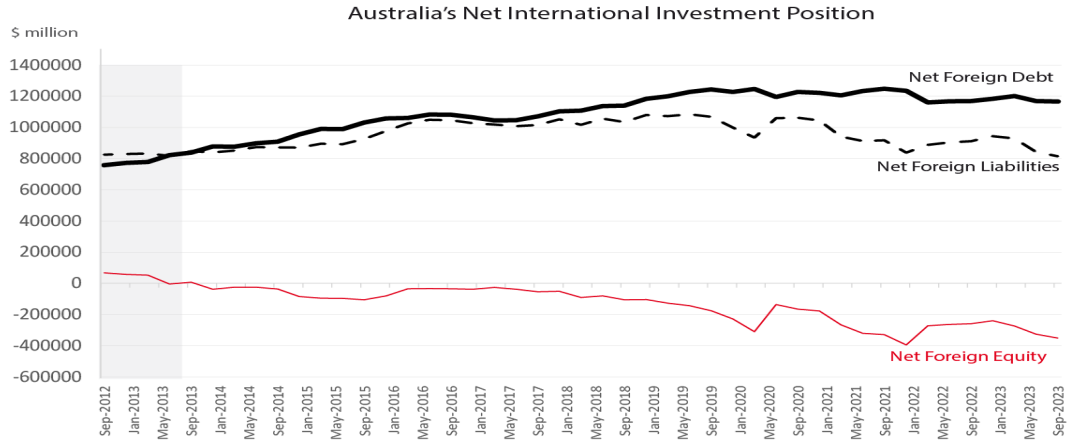
5. **A low rate of inflation in Australia compared to inflation rates experienced overseas is likely to contribute to:**
   (a) A decrease in international competitiveness and higher living standards
   (b) An increase in international competitiveness and a lower exchange rate
   (c) An increase in international competitiveness and a decrease in the current account deficit
   (d) An increase in international competitiveness and no effect on living standards, the current account deficit or the exchange rate.

6. **Which of the following statements is inaccurate in relation to the benefits of international trade?**

   (a) It enables a wider range or selection of goods and services to be available for domestic consumption
   (b) Australian businesses will be burdened by economies of large scale production
   (c) Australian businesses have greater access to foreign physical and human capital
   (d) Australia can use foreign funds to finance expansion or consumption

7. **Which of the following is likely to have an impact on Australia's terms of trade that is different to the other three?**
   (a) A higher global demand for iron ore
   (b) Lower prices of manufacturing imports from China
   (c) A lower world supply of coal
   (d) A higher world price of crude oil

Questions 8 and 9 relate to the chart below:



8. **Which of the following statements is correct in relation to net foreign equity?**
   (a) It's trend since 2012 has had a favourable impact on the current account
   (b) It has continued to increase since 2013
   (c) Since 2013, Australian ownership of foreign assets is less than foreign ownership of Australian assets
   (d) It's movement over 2022 should contribute to a lower NPI deficit

9. **Which of the following statements is correct in relation to Australia's Net International Investment Position**
   (a) Net foreign equity makes up the largest component of Net foreign liabilities
   (b) The growth in Net foreign liabilities up to 2019 exerted downward pressure on the CAD
   (c) The growth in NFD is likely to increase Australia's credit rating and increase the exchange rate
   (d) The change in net foreign liabilities since 2020 reflects a general improvement in Australia's current account balance

10. **In relation to growth in international competitiveness, which of the following statements is incorrect?**
   (a) It is likely to contribute to the achievement of price stability and economic growth
   (b) It is likely to contribute to growth in net exports and a higher current account deficit
   (c) It is likely to contribute to an increase in economic growth and material living standards
   (d) It can be a response to an increase in productivity and efficiency

PART B: STRUCTURED QUESTIONS

Question 1
Discuss the likely impact of a depreciation of the Australian dollar on: (4 marks)

(a) the balance of merchandise trade; and
(b) the net primary income deficit

Question 2
Explain how an increase in the rate of economic growth may affect Australia's Current Account Deficit (CAD).
(4 marks)

Question 3 (4 marks)
Explain how an increase in the rate of productivity is likely to influence price stability and international competitiveness.

Question 4
Distinguish the terms of trade from the current account balance. (3 marks)

Question 5 (4 marks)
Describe two possible reasons for the fall in Australia's terms of trade.

Question 6 (4 marks)
Outline how a fall in both interest rates and the terms of trade are factors that contribute to a lower exchange rate.

Question 7 (4 marks)
Describe how a depreciation of Australia's exchange rate can help to achieve the goal of full employment and promote Australian living standards

Question 8 (3 marks)
Based on the following figures for Australia's balance of payments for the quarter ended 2022, calculate both the value of the Balance on Goods and Services (BOGS) and the Current Account balance. You must show your calculations and a calculator may be used.

	$m
Exports of goods	152702
Imports of goods	113831
Exports of services	19623
Imports of services	27300
Net primary income deficit	33191
Net secondary income deficit	280

YOU BE THE ASSESSOR: UNIT 3 AOS 3

In this section, you are required to assess the responses presented for each of the questions. You should award the responses a score (either full marks or less than full marks) and justify your decision. Once complete, compare your assessment to that of the authors [provided at the rear of the Study Guide.

1. Outline what is meant by an exchange rate depreciation and explain how a fall in Australia's terms of trade is likely to affect Australia's exchange rate. 4 marks

Sample 1
An exchange rate depreciation occurs when the value of a country's currency (e.g. the value of the AUD) falls relative to the purchasing power it has over another country's currency. For example, if the value of the AUD falls from USD1.00 to USD0.75 it means that the AUD exchange rate depreciates and one hundred Australian dollars will only be able to purchase seventy five US dollars. A fall in Australia's terms of trade (average prices received for exports relative to the average prices paid for imports) is likely to contribute to an exchange rate depreciation given that many Australian exporters (e.g. iron ore and coal mining companies) are likely to be receiving lower (global) prices for their exported output. This ultimately causes mining companies to receive less foreign currency for any given volume of exports, which negatively affects the total value of export receipts (price X quantity) and leads to a fall in the demand for AUD on foreign exchange markets and a lower AUD exchange rate

Justification_____

_____

_____

_____

Sample 2

Exchange rate depreciation means that the value of the dollar has fallen. It will tend to fall when our international competitiveness falls as a result of declining rates of productivity growth or rising rates of inflation which decreases our international competitiveness. A fall in Australia's terms of trade should lead to a decrease in the exchange rate because the value of exports will decline. This reduction in the exchange rate will then help to increase competitiveness and AD as well as promote economic growth and reduce the current account deficit.

Justification_____

_____

_____

2. Explain how a depreciation of the exchange rate is likely to impact on the current account deficit (CAD) and price stability. 5 marks

Sample 1

A depreciating exchange rate will increase the demand for Australian exports because foreigners will need to use less of their own currencies to purchase Australian exports. This will contribute to an increase in the BOMT and reduce the size of both the CAD as well as the size of NFD, given that fewer funds (e.g. debt and equity) will need to be sourced from overseas in order to finance the CAD. The lower exchange rate will also help to increase AD and economic growth, which makes it more likely that the government will achieve its goals for strong and sustainable rates of economic growth and full employment (i.e. the NAIRU – non-accelerating inflation rate of unemployment).

However, the lower exchange rate will eventually cause inflation to rise over time because it causes the price of imports to rise, many of which are included in the consumer price index. This means that prices will not be stable and price stability will not be achieved.

Justification_____

_____

_____

Sample 2

A depreciating exchange rate (i.e. a fall in the value of the AUD on foreign currency markets) is likely to reduce the size of the CAD but make it more difficult to achieve price stability. This is because a lower AUD increases the international competitiveness of Australia's tradables sector because the price of Australian exports effectively falls for foreigners and the price of imports rises for domestic consumers. This boosts the demand for Australian exports, as well raise the demand for goods and/or services produced by Australian import-competing producers. This will increase Net Exports, boosting export credits relative to import debits in the Balance on Merchandise Trade (and Balance on Goods and Services) within the current account of Australia's balance of payments. Other things being equal, this reduces the overall size of debits relative to credits in the current account, which necessarily leads to a lower CAD. The lower exchange rate will, however, add to inflationary pressures and make it more difficult to achieve the RBA's goal of 2-3% growth in the CPI per annum over time. This is because a lower AUD will increase the price of numerous capital and intermediate imports, which adds to the costs of production for many Australian businesses. As a supply factor, this adds to the prices (as businesses seek to protect profit margins) and contributes to growth in inflation. In addition, the lower AUD also adds to demand inflationary pressures given that it stimulates AD via the boost to Net Export demand.

Justification_____

_____

_____

3. Describe the trend in the terms of trade since 2020 and explain a factor which could account for its movement over this time. 4 marks

Sample 1

The terms of trade (exports over imports) has trended up from an index just below 90, and then down to 80, before trending back up to 110, then down to 70 before increasing once again towards the new terms of trade boom Mark 3, where the index was close to 120. This has resulted in a an increase in AD and economic growth given that exporters will be receiving more income from export sales, which eventually flows through to an increase in Investment in the economy. The government will also be receiving more tax revenue which boosts the ability of the government to support economic activity through tax cuts or spending initiatives.

Justification_____

_____

_____

Sample 2
The terms of trade (export prices over import prices) has trended up since 2020 from an index of approximately 90 in early 2020 to an index of approximately 110 by September 2022. A factor that may account for the higher TOT is the stronger global demand for commodities such as natural gas and iron ore over this time. This raised the average prices received for Australian exports over this period given that iron ore and natural gas are major commodity exports for Australia, which in turn increased export prices relative to import prices, causing an increase in the TOT.

Justification_____

_____

_____

4. Outline how an increase in international competitiveness can reduce the current account deficit and improve living standards.5 marks
Sample 1
An increase in international competitiveness means that Australian businesses are better able to compete in global markets as a result of lower prices or higher quality goods and services. This can reduce the CAD because lower priced exports (or better quality exports) will tend to raise the demand for net exports (by increasing exports and reducing imports), which increases the surplus on the Balance on Goods and Services (BOGS). Given that the BOGS is a major sub-account within the current account, a higher surplus in the BOGS will help to decrease the size of the CAD. Given that an increase in competitiveness will have favourable impact on net exports (X – M), it will boost AD given that net exports is a component of AD. These higher levels of AD will stimulate economic growth and help to increase real GDP (or real income) per capita, which is one measure of material living standards, indicating that Australians, on average, will be able to purchase more goods and services than before.

Justification_____

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Sample 2
International competitiveness can be increased via the removal of forms of protection, such as tariffs and creation of free trade agreements with other countries, such as the CHAFTA signed by Australia and China. It causes the CAD to increase because cheaper imports will be allowed to enter into Australia, which leads to an increase in debits relative to credits in the Balance on Merchandise Trade (BOMT) and the Balance on Goods and Services (BOGS). As the BOMT and BOGS move further away from surplus and more into deficit, this will serve to increase the Current Account Balance. A larger CAD will eventually cause the Trade Weighted Index (TWI) to fall, which in turn will increase Australian living standards because Australian goods and services will become more competitive on international markets. Export demand is likely to rise as foreigners will find it is cheaper to purchase Australian goods and services and import demand is likely to fall as Australian consumers will substitute out of imports and into the relatively cheaper Australian import competing goods and services. This will cause an increase in (X-M), raising AD and real GDP, which should eventually cause material living standards to increases as measured by real GDP per person.

Justification_____

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5. Explain the relationship between the current account deficit (CAD) and net foreign debt (NFD) 5 marks

Sample 1
The current account is made up of the balance on merchandise trade, net services, net primary incomes and net secondary incomes. The BOMT and net services will sometimes be in surplus in Australia, but the overall current account is usually in deficit in Australia due to the large deficit within the net primary income section. An increase in the CAD is likely to cause an increase in NFD because the CAD is effectively caused by a national savings and investment imbalance, which requires foreign savings to finance the shortfall. These foreign savings will usually enter Australia in the form of debt, such as the purchase of Australian company or government bonds by foreigners, which ultimately leads to an increase in NFD.
Justification_____

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Sample 2
The CAD represents the negative (deficit) balance in the current account of Australia's balance of payments, which is made up of four sub-sections: The balance on merchandise trade, net services, net primary incomes and net secondary incomes. All of the transactions that flow through the current account (as either credits/inflows or debits/outflows) will be recorded in one of these four accounts and the combined total represents the balance in the current account over any period, which for Australia is negative (i.e. deficit). NFD represents the stock or value of net debt obligations to foreigners, with the total amount owed to foreigners far outweighing the amount owed by foreigners to Australians. Any increase in the CAD is likely to cause an increase in NFD and any increase in NFD is likely to cause a further increase in the CAD. This occurs because the CAD reflects national spending exceeding national income, which requires foreign financing, either in the form of debt or equity. Accordingly, a higher CAD will usually result in a higher level of NFD. For example, if the CAD is $50B for 2017, it means that $50B must enter the

country to effectively finance the CAD, much of which will be in the form of debt, therefore increasing NFD. Once NFD increases, however, its servicing over time (through the payment of interest in the net primary income section of the current account) will further increase the CAD. For example, an increase in NFD of $50B will mean that $5B in net terms will move through as a debit in the NPI section of the CA, which adds to the CAD for that period. Australia's CAD is primarily due to the large stockpile of NFD which creates huge interest payments to foreigners that are recorded as debits in the Net Primary Income section of the current account.

Justification_____

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6. Explain how a fall in the terms of trade is likely to affect the goal of strong and sustainable economic growth, and Australia's living standards.
4 marks

Sample 1
The term of trade is the ratio of average export prices and average import prices. When the TOT falls, it means the demand for our exports is low and therefore reducing our AD and real Gross Domestic products (GDP) growth. As our current GDP growth is 1.4%, our goal of strong and sustainable economic growth of 3-3.5% is unlikely to be achieved. The low AD will result in low employment rates and therefore reducing the ability of households to access to goods and services, reducing material living standards.

Justification_____

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Sample 2
A lower terms of trade (TOT) implies that the prices received for exports has decreased relative to the prices paid for imports, leading to a reduction in the value of net exports because exporters will be receiving less for any given volume of exports. As net export values decrease, the national income will decrease, reducing dividends and factor incomes paid to households, thus reducing disposable income. As disposable income is lowered, household access to goods and services is reduced, which means that material living standards have worsened. Additionally, a decrease in net exports will reduce AD, disncentivising firms from producing a large output, as opportunities for profit are reduced. Investment and output decreases across the business sector, leading to a lower rate of growth in real GDP and making it more difficult to achieve the desired strong rate of economic growth (of approximately 3%) that is needed to support employment. In addition, the decline in Investment by exporting firms can have a negative impact on the nation's productive capacity (e.g. reduced investment in plant and capacity) and make it more difficult to sustain stronger growth into the future.

Justification_____

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SUGGESTED ANSWERS TO ALL MC QUESTIONS AND MINI EXAMS 1 – 3

ANSWERS TO REVIEW MULTIPLE CHOICE QUESTIONS PART A (AREA OF STUDY 1)

TEST YOURSELF 50 MC QUESTIONS AOS 1				
1. D	2. C	3. C	4. A	5. D
6. B	7. D	8. B	9. A	10. A
11. A	12. B	13. A	14. D	15. C
16. D	17. C	18. D	19. C	20. A
21. B	22. B	23. D	24. C	25. C
26. A	27. C	28. A	29. A	30. B
31. B	32. A	33. B	34. B	35. D
36. C	37. D	38. C	39. A	40. C
41. A	42. C	43. A	44. A	45. C
46. A	47. D	48. C	49. C	50. D

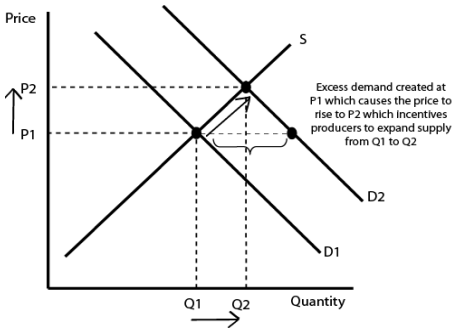
TEST YOURSELF 50 MC QUESTIONS AOS 2 + 3				
1. C	2. D	3. A	4. B	5.A
6.B	7.B	8. A	9. C	10. B
11. D	12.D	13. C	14.C	15.A
16. D	17. C	18. C	19. A	20. A
21. C	22. C	23. B	24. C	25. D
26. C	27 A	28. B	29. B	30. D
31. C	32. B	33.C	34. B	35. D
36. B	37. D	38. D	39. D	40. B
41. A	42. D	43. A	44. C	45. B
46. A	47. C	48. C	49. A	50. B

ANSWERS TO MINI EXAM NO. 1 (AREA OF STUDY 1)

1	A	B	C	D
2	A	B	C	D
3	A	B	C	D
4	A	B	C	D
5	A	B	C	D
6	A	B	C	D
7	A	B	C	D
8	A	B	C	D
9	A	B	C	D
10	A	B	C	D
11	A	B	C	D
12	A	B	C	D
13	A	B	C	D
14	A	B	C	D
15	A	B	C	D

STRUCTURED QUESTIONS
Question 1

(a) Explain how increase in the price of a substitute can affect the supply of a product. Use a full labeled demand and supply diagram to illustrate. (4)



An increase in the price a substitute will cause the demand for a product to rise. This will initially result in excess demand for the product and cause the price to increase over time. As the price rises, existing producers see greater profit opportunities by allocating more resources to the production of this product and therefore supply more to the market (i.e. they increase production of the product).

(b) Discuss how an increase in productivity at Kraft foods may affect the market for Kraft products.(4)

Greater productivity at Kraft means that output per unit of inputs has increased, facilitating a drop in the average (or per unit) costs of production. Assuming that Kraft operates in a relatively competitive market (with substitute products in competition), the (relative) price of Kraft products can fall without a negative impact on profit margins, enabling it to attract more sales. Kraft will therefore increase the quantity produced (or supply to the market). The market will then be experiencing lower prices and greater production.

(c) Explain what is meant by an 'efficient allocation of resources'.(2)

An efficient allocation of resources occurs when the nation's resources are allocated in the production of goods and services such that living standards or welfare are at the absolute maximum. Any alternative allocation of resources will result in lower living standards. The most efficient allocation of resources necessarily implies that all measures of efficiency (e.g. technical, dynamic, intertemporal) are maximised.

(d) Define technical efficiency and discuss how an increase in technical efficiency can improve living standards. (4)

Technical efficiency occurs when the nation is producing its goods and services in the best way possible, with minimum waste and lowest costs. It is consistent with production occurring at peak productivity levels. When this occurs, it means that goods and services are produced at the lowest possible cost and, providing markets are competitive, is likely to lead to lower prices. As prices are lower, consumers are able to afford a greater bundle of goods and services, improving their material living standards.

(e) Discuss how changes in relative prices can result in a reallocation of the nation's resources. (3)

When one price changes relative to another, it sends signals to producers that it may be beneficial to reallocate resources from one productive activity to another. For example, if the price of apples increased, producers in the agricultural sector may decide to reallocate some of their land and machinery away from the production of another crop (such as pears) towards the production of apples. This is because the higher price of apples is likely to reflect greater profits to be made by supplying this product to the market instead of another product.

(f) Explain why a business will prefer a low price elasticity of demand (PED) for its product and discuss one factor that might cause the PED to increase. (4)

A business will prefer a low price elasticity of demand (PED) for its product because it will enable it to raise prices without causing a significant drop in consumer demand. Indeed, if the PED is low enough (represented by a very steep demand curve), the business can raise price and increase total revenue (and profit) even though there has been a (small) reduction in demand. A factor that might cause the PED to increase is an increase in the number of substitute products in the market. This will mean that consumers have rival products to turn to in the event that there is a price rise, leading to any given increase in price resulting in consumers becoming more responsive (or price sensitive) and reducing demand by more than would have been the case before the introduction of the substitutes.

(g) In *perfectly competitive markets, it is assumed that there are lots of buyers and sellers, there are no barriers to entry or exit and products are homogenous.* Explain why markets are likely to be less competitive when any <u>two</u> of the above conditions are not met. (4 marks)

- *Without lots of buyers and sellers, there will be few people bidding the price up (in the case of buyers) to justify production and few firms creating pressure for the price to come down (in the case of sellers). In particular, an absence of sellers effectively means that one or two firms have 'market power' with minimal competitive pressures to prevent the prices from being 'too high.'*

- *Without freedom of entry to (and exit from) a market, it will be difficult for potential firms to enter the market if they perceive profit opportunities are available. For example, if an entrepreneur is discouraged from entering a market because the establishment costs are so high (e.g. a gold mine) it means that the incumbent firms have minimal competition (or substitutes) and are free to charge excessive prices or make 'super normal' profits.*

- *Without the assumption of 'homogenous goods,' there is an absence of 'substitutes' that can provide consumers with the opportunity to switch their preferences in the event that prices are excessive.*

Question 2

(a) Define a market failure. (2)

A market failure occurs when markets across the economy, left without government intervention, will lead to an inefficient allocation of resources such that national living standards or welfare are not 151nderutil. They occur because the individual self-interest motivates resources to flow to the production of goods and services in such a way that society is made worse off. In short, there is an over-production of some goods (such as those with negative externalities) and an underproduction of others (such as public goods).

(b) Explain how asymmetric information may contribute to an inefficient allocation of resources and discuss one government action to account for the market failure. (4)

When one party to an economic transaction has more information than another, it leads to either an under or over-allocation of resources to the production of a particular product. For example, assume that a car yard is aware that a second hand vehicle has a defect that is difficult to detect. Potential consumers will be unaware of the defect and many consumers would be deterred from purchasing second hand cars because of the likelihood of purchasing 'a lemon.' Accordingly, consumers are more likely to avoid the second hand market and purchase a new car instead (as information is more symmetric), or purchase from a more reliable source (e.g. friends or family). This leads to an over-allocation of resources to the production of new cars and an under-allocation of resources to the sale of second hand cars. To protect against this type of market failure, governments have devised numerous laws to ensure that consumers are somewhat protected from the losses that result from asymmetric (or imperfect) information. For example, laws that require second had car dealers to provide warranties on cars less than $3000 is designed to ensure that consumers are less likely to experience financial loss if they purchase a 'lemon.'

(c) Explain why any <u>one</u> of the following services is generally regarded as an example of a public good: prisons, defence services or lighthouses. (4)

They are all examples of public goods because they all contain the following important 'public good' characteristics. That is, they are all non-depletable and non-excludable. Prisons are non-depletable because one person's enjoyment of the prison service (i.e. keeping them safer) does not prevent another person from enjoying the same service. In other words, there is joint consumption of the service. In addition, it is not possible to exclude a person from enjoying the benefits of the prison it that person refuses to pay for the service. (The same argument applies to the services of defence and lighthouses)

(d) Discuss two measures the government could take to 151nderuti the problems associated with any negative externality in production, such as excessive emissions of Co2 into the atmosphere by big businesses. (4)

There are a number of strategies that can be employed by governments to reduce the incidence of any negative externality in production. First, a government could decide to impose a tax on any pollution (or Co2) that is emitted into the atmosphere. The tax will add to the production costs when the business pollutes the environment, which can ultimately have a negative effect on profits (e.g. the firm is likely to increase prices to maintain profit margins and the increased prices will reduce sales and production). Accordingly, the business will have incentives to find better pollution abatement technologies or simply reduce pollution in order to reduce costs.

Second, the government can establish an emissions trading scheme similar to the one proposed and rejected in Australia. The government sets a target level of Co2 emissions for the nation and then sells permits (or rights) to polluters allowing businesses to pollute a certain volume of Co2 into the atmosphere. The total volume permitted will equate to the target. Businesses will always have incentive to obtain the best pollution abatement technology (or move to alternative energy sources) because they can then sell their 'permits' on the open market to firms who are less efficient at pollution abatement. The government then lowers the target and reduces the number of permits on the market, which results in higher permit prices, making it more expensive to pollute and increasing the incentive to reduce pollution.

(e) Describe one example of government intervention in markets that unintentionally leads to a decrease in the efficiency of resource allocation. (4)

An example of government intervention is the Renewable Energy Target (RET) that is designed to rectify the market failure in the form of climate change (negative externality). The RET mandates that by 2030 Australia should generate around 80% of its energy from renewable (clean) energy sources such as wind and solar in order to meet its emission reduction targets. This involves energy producers being required to produce or source more energy from renewable sources (such as wind and solar) which are currently more costly and relatively inefficient ways of generating electricity on a large scale. By forcing producers to rely on less reliable energy (e.g. wind energy produces no electricity when the wind is not blowing) and more expensive forms of energy (e.g. current technology makes it impossible to store large volumes of renewable energy when it is not being consumed), this adds to the cost of energy. It therefore increases the cost or price of pollution abatement relative to that which could be achieved via a more efficient policy, such as carbon pricing via a market based emissions trading scheme (ETS). [A carbon price via a market based ETS is widely considered to be the most cost effective form of achieving lower Co2 emissions.] Accordingly, the opportunity costs associated with this government intervention are not maximised, resulting in a less efficient use of the nation's resources.

(f) Outline one way the government can increase competition in markets. (2 marks)

The government devises a whole host of laws that seek to limit the incidence of anti-competitive behaviour. These are summarised in the Trade Practice Act 1974 (renamed the Competition and Consumer Act 2010) and are policed by the ACCC. To For example, the government requires that any proposed merger between two large businesses must pass the ACCC's 'merger test.' Mergers will only be permitted if they it can be demonstrated that the merged entity will not substantially lessen competition in the market place. This effectively prevents the establishment of monopolies in important industries like banking, where a combined entity comprising NAB, Westpac, the CBA and ANZ would most certainly lead to a less competitive market for banking services.

ANSWERS TO MINI EXAM NO. 2 (AREA OF STUDY 2)

1	A	B	C	D
2	A	B	C	D
3	A	B	C	D
4	A	B	C	D
5	A	B	C	D
6	A	B	C	D
7	A	B	C	D
8	A	B	C	D
9	A	B	C	D
10	A	B	C	D

Question 1

a) Explain what is meant by the government's price stability goal.(3)

Price stability (low inflation) is the govt's goal to contain the rate of inflation to within the 2-3% on average over time. Rates of inflation below 2% are not targeted for fear of dampening economic growth and rates above 3% are considered too high due to the negative impacts likely to be felt in the economy (such as the negative impact on Investment and AD). The main govt body responsible for achieving this goal is the RBA.

b) Explain what is meant by the goal of strong and sustainable rate of economic growth (3)

The goal SSEG involves the govt seeking to achieve a strong rate of growth in the level of real GDP, generally considered to be within the range of 3-3.5% such that it is strong enough to create employment, boost incomes and lift living standards. Rates too low (in particular below 2-3%) are generally unacceptable primarily because employment growth is likely to be minimal and unemployment is likely to rise. Rates above 3.5-4% are generally unsustainable in terms of the likely impact on inflation, the CAD/NFD and the environment.

c) Explain how an increase in economic growth might have only a limited impact on overall living standards (4)

This can occur because living standards are dependent upon changes in both material and non-material factors. Economic growth means that there has been an increase in real GDP (or production) from one period to the next – in other words, there is an increase in material living standards as measured by an increased volume of goods and services available and higher incomes available for spending. However, if the increases in real GDP caused a deterioration in non-material living standards, such as a depletion of natural resources, global warming or other negative externalities in production, then the growth in overall living standards will be impaired.

d) Explain why a fall in economic growth might not cause an increase in the unemployment rate. In your answer, refer to underemployment and the underutilisation rates. (4)

This can occur for two main reasons. First, in many cases, the decline in the demand for labour that occurs in line with the fall in national output may result in fewer hours worked rather than fewer jobs. In other words, businesses may decide to reduce the hours worked of their employees rather than sack workers. This will have no impact on the unemployment rate, as more workers became 'underemployed' instead (i.e. working less hours than they preferred). Accordingly, the fall in economic growth results in the underutilisation rate (the underemployed + unemployed as a percentage of the labour force) riser faster than the unemployment rate. Second, it is theoretically possible that the decline in economic growth can trigger a fall in the participation rate such that those laid off from work do not look for a new job (i.e. they do not become unemployed) or those unemployed leave the labour force (stop looking for work) because job prospects have diminished.

Question 2 (8 marks)

a) Explain how a rise in interest rates might affect the rate of inflation. Ensure that you explore both the demand and supply side impact. (4)

On the D side, an increase in IR is likely to reduce both C, I and therefore AD as a result of the higher cost to take out loans and the reduced availability of cash after servicing existing loans which are now more expensive. The reduction in AD will reduce demand inflationary pressure . On the S side, higher IR will increase the costs of production for businesses and exert upward pressure on prices. Overall, an increase in IR will (ceteris paribus) reduce the rate of inflation over time. This is because the D side impact outweighs the S side impact and is the reason why the RBA tightens monetary policy (raises interest rate) to reduce inflation.

b) Explain how a fall in interest rates is likely to affect the government's objective of Full employment. Ensure that you explore both the demand and supply side impact. (4)

On the D side, a decrease in IR is likely to increase both C and I (reasons see opposite of above), which stimulates AD. This will increase real GDP, EG, the demand for labour, thereby leading to increases in employment growth and a consequent reduction in unemployment. That is, Full Employment is more likely to be achieved, where FE is the lowest unemployment rate possible without triggering inflationary or external pressures (approximately 5%). On the S side, a decrease in IR will reduce the costs of production for businesses, allowing them to reduce prices, attract more sales and increase employment growth. Accordingly, employment growth is likely to be even greater, reducing unemployment and assisting with the achievement of FE.

Question 3 (8 marks)

a) Explain how an increase in the rate of productivity is likely to impact on Low Inflation (LI) (4)

An increase in productivity is an example of a supply side factor that lifts EG and helps achieve LI simultaneously. Increases in the ratio of outputs to inputs (i.e. productivity) work to decrease average production costs and exert downward pressure on prices (as competitive pressures motivate businesses to pass on the lower costs in the form of lower prices). This assists in reducing the rate of inflation and helps in the achievement of LI, which is the goal to keep inflation (as measured by the CPI) to within 2-3% on average over time.

b) Explain how an increase in the rate of productivity is likely to impact on Full Employment (FE).(4)

An increase in productivity is likely to have both short and long run impacts on FE, which is the government's objective to achieve lowest unemployment rate possible without triggering inflationary or external pressures (approximately 4.25%). In the SR, increases in productivity are often associated with a reduction in

employment (e.g. firms taking on new technology to replace labour or firms restructuring their enterprises) and an increase in unemployment. However, in the LR, increases in productivity work to reduce prices and stimulate AD (e.g. X demand increases because lower prices boost the international competitiveness of our traded goods sector). This will then increase EG, demand for labour and cause a reduction in unemployment. Overall, productivity growth can make it more difficult to achieve FE in the SR, but assists in its achievement in the LR.

ANSWERS TO MINI EXAM NO. 3 (AREA OF STUDY 3)

1	A	B	**C**	D
2	A	**B**	C	D
3	A	B	C	**D**
4	A	**B**	C	D
5	A	B	**C**	D
6	A	**B**	C	D
7	A	B	C	**D**
8	**A**	B	C	D
9	A	B	C	**D**
10	A	**B**	C	D

1.Discuss the likely impact of a depreciation of the Australian dollar on:
(a) the balance of merchandise trade (BOMT); and
(b) **the net primary income deficit [4]**

The BOMT comprises X of Goods less M of Goods. The depreciation of the AUD (i.e. a lower Australian exchange rate) will increase the value of X and decrease the value of M in the longer term, causing the BOMT to improve (i.e. increase the surplus). This is because our exporters would become more price competitive, increasing X sales and boosting credits in the BOMT. Alternatively, you can think of exporters being price takers and receiving more for any given quantity of X, thus boosting the value of X. In addition, a sustained drop in the dollar should over time cause a substitution away from some imports and towards domestic import competing industries, thereby reducing M and further boosting the BOMT. Given that a depreciation of the AUD is likely to improve the BOMT, this should (ceteris paribus) reduce the net primary income deficit as X >M, should translate into a smaller CAD and reduces need to borrow from OS. This decreases servicing of overseas debt (which is a debit in the net primary income section). However, any debt that has been denominated in foreign currency (e.g. USD) will now be more difficult to repay. As these payments go through the net primary income section as debits, the net primary income section should worsen. On balance, given that more and more of Australian foreign debt is denominated in domestic currency, this negative effect on the NPI section is less relevant.

2. Explain how an increase in the rate of economic growth may affect Australia's Current Account Deficit (CAD). [4]

An increase in EG is likely to be associated with strong growth in AD or GNE, some of which will spill over into M purchases and therefore worsen the BOMT and increase the CAD. This increase in CAD must be counterbalanced by CAFA surplus (which is primarily an increase in the receipt of borrowing from OS which increases net foreign liabilities). Alternatively, strong EG can be said to exacerbate the gap between national spending and income (where spending > income), which necessitates the purchase of M (increase BOGS) and borrowing from OS (increase NFD or NFLs). However, if the EG has been due primarily to supply side reforms (e.g. increases in productivity) that expand the nation's productive capacity, then it is possible for the rises in EG to occur without the CAD or NFD/NFLs deteriorating. This is because the strong AD can more easily be accommodated by the growing AS (or productive capacity). Similarly, if the EG is occurring purely as a result of strong X growth, then rising EG will, indeed, be associated with a lower CAD/NFD.

3.Explain how an increase in the rate of productivity is likely to influence price stability and international competitiveness. [4]

An increase in productivity is an example of a supply side factor that helps to achieve price stability and improve international competitiveness. Increases in the ratio of outputs to inputs (i.e. productivity) is likely to decrease average production costs given that more output can be produced from the same inputs which reduces unit costs of production and exerts downward pressure on prices (as competitive pressures motivate businesses to pass on the lower costs in the form of lower prices). This assists in reducing the rate of inflation and helps to achieve price stability (2-3% growth in the CPI on average over time). The lower growth in domestic prices (or perhaps fall in prices) will then typically translate into greater price or international competitiveness of Australia's tradeables sector (exporters and import competing producers) given that the prices of import competing products and exports is likely to growing more slowly (or falling more quickly) than foreign products.

4.Distinguish the terms of trade from the current account balance. [3]

The terms of trade is defined as a ratio of average prices received for Australia's exports to the average prices paid for Australia's imports. It effectively represents the volume of imports that can be purchased with a given volume of exports. In contrast, the current account (CA) balance refers to the balance (deficit or surplus) that exists in one of the two major accounts within Australia's balance of payments. The TOT is simply a ratio of 'prices' and does not reflect values of exports or imports, whilst the CA balance is what 'value' remains after deducting all current outflows (debits) for items such as imports, from all current inflows (credits) for items such as exports.

5.Describe two possible reasons for the fall in Australia's terms of trade. [4]

The terms of trade index (TOT) can fall as a result of the slow growth in the global economy, e.g China, whose lower demand for construction material, such as steel, would cause the global demand and price for commodities like iron ore and coal to fall significantly. Given that Australia is a large exporter of iron ore and coal, the lower world price of these commodity exports results in a continuing fall in the prices received for exports relative to the prices paid for imports. In addition, supply side factors could be relevant. For example, following the investment phase of the mining boom in Australia and abroad, there was a large scale increase in the global supply of key commodities (iron ore and coal) as increased mine capacity (as well as an increase in the number of mines) meant that more mining production occurred. This would exert downward pressure on global commodity prices, a fall in the average prices received for Australia's commodity exports and a further reduction Australia's TOT.

6.Outline how a fall in both interest rates and the terms of trade are factors that contribute to a lower exchange rate. [4]

Lower interest rates, ceteris paribus, will mean the interest rate differential between Australian and overseas rates (e.g. USA interest rates) has widened. With higher relative rates on offer overseas, this contributes to capital outflow as Australian investors (lenders) decide to invest (lend) overseas. As these funds (capital) exit Australia, they are exchanged into foreign currency, increasing the supply of AUD on foreign exchange markets and causing the price of the AUD (i.e. the

exchange rate) to fall. In relation to the lower TOT [assuming that it has occurred because of lower commodity prices], it will contribute to a lower exchange rate because Australian exporters, particularly commodity producers who experience much lower prices for their exported commodities, will receive less value for any given quantity of exports sold on global markets. This reduces the demand for and value of the AUD in foreign exchange markets as foreign buyers require fewer AUD to purchase any given quantity of exports.

7. Describe how a depreciation of Australia's exchange rate can help to achieve the goal of full employment and promote Australian living standards. [4]

The fall in the value of the AUD helps to boost the international competitiveness of Australia's tradables sector (exporters and import-competing businesses). Exporters can therefore more easily penetrate export markets as the prices of their exports are lower when purchased with foreign currency. Similarly, import-competing businesses will be able to increase market share as imports become more expensive and Australians substitute into the relatively cheaper domestic alternatives/substitutes. With an increase in net exports, this boosts AD and economic growth and helps to maintain employment growth as the derived demand for labour by trade-exposed industries increases. This should place downward pressure on the unemployment rate towards the full employment or NAIRU (non-accelerating inflation rate of unemployment) level of approximately 4.25%. To the extent that the lower AUD helps to increase net export demand and economic growth, it also helps to lift real GDP per capita, which is a measure of material living standards of Australians. This means that, on average, Australians will have a higher level of income, which increases their access to goods and services and boosts their material prosperity and living standards. [To the extent that the higher level of real GDP contributes to a larger derived demand for labour and lower unemployment, the non-material benefits provided by employment (such as self-esteem and a sense of purpose) will also increase, providing a further boost to living standards.]

8. Based on the following figures for Australia's balance of payments for the quarter ended 2022, calculate both the value of the Balance on Goods and Services (BOGS) and the Current Account balance. You must show your calculations and a calculator may be used.[3]

Exports of goods	152702
Less Imports of goods	113831
BOMT	*38871*
Exports of services	19623
Less Imports of services	27300
Net Services (NS)	*-7677*
BOGS = BOMT + NS	**31194**
Less Net primary income deficit	33191
Less Net secondary income deficit	280
Current Account balance	**-2277**

DEMAND AND SUPPLY QUICK QUIZ 1 - ANSWERS

1	2	3	4
D	B	D	A
5	6	7	8
B	D	A	C
9	10	11	12
B	D	A	B
13	14	15	16
B	A	D	C
17	18	19	20
A	C	D	B
21	22	23	24
B	A	A	C
25	26	27	28
C	A	B	D
29	30	31	32
D	D	B	D
33	34	35	36
A	A	A	B
37	38	39	40
A	B	B	A
41	42	43	44
A+C	A	B+C	B
45	46	47	48
A	D	D	C
49	50		
C	A		

QUICK QUIZ 4:AGGREGATE DEMAND AND SUPPLY QUICK QUIZ – ANSWERS

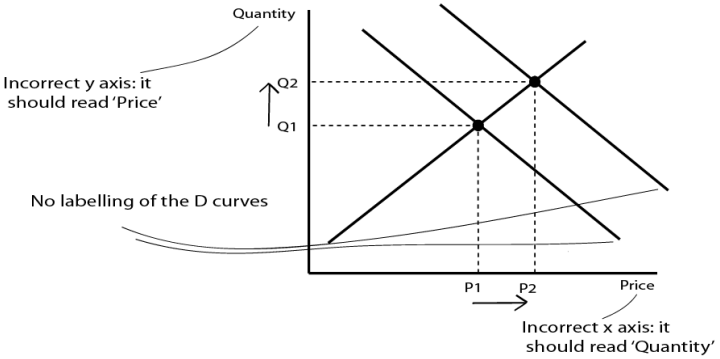
1	2	3	4
C	D	A (C)	A
5	6	7	8
D (B)	C (A)	A	D (B)
9	10	11	12
D	B	D	C (B)
13	14	15	16
B	A (C)	A (ST) B (LT)	A

***Note**: the primary or predominant effect is listed first.*

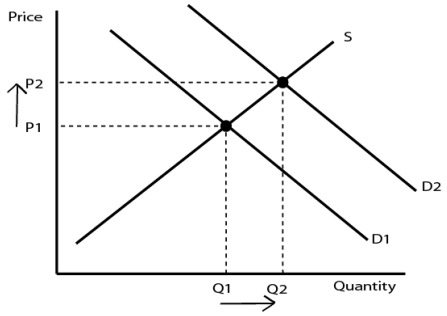
YOU BE THE ASSESSOR: CORRECTIONS AND ANALYSIS (U3 AOS 1)

Q1a Draw a fully labelled diagram below and show how an increase in the demand for king prawns at any given price is likely to be reflected in the diagram. 2 marks

Sample Answer 1



Sample Answer 2 (full marks)



Analysis (Sample 2 full marks)

While Sample 1 actually has the (demand) curve shifting in the right direction, with an accurate depiction of the outcome for prices and quantity (i.e. both increase), it has too many errors (such as no labelling of curves and wrong labelling of axes) and therefore is likely to score zero marks. [Note that it is possible for Sample 1 to achieve 1 mark given that it is superior to a 'blank' response. However, this decision will ultimately be made by the Assessing Panel when determining the type of responses that fail to demonstrate the key skill 'construct…demand and supply diagrams'.]. Response 2 makes no errors and clearly demonstrates that the student has acquired the key skill.

Q1b Outline and justify two demand factors that would be expected to shift the demand curve for king prawns to the right and interpret how this is likely to influence the equilibrium price and quantity for king prawns. 4 marks

Two demand factors are provided with a brief explanation (outline) of why lower taxes and higher immigration will influence the factors provided, but only one is justified with the link from lower taxes to higher consumption being mentioned but there is no justification of why a higher population will shift demand to the right.

Sample 1

Two Demand factors that would be expected to shift the demand curve for king prawns to the right could be a decrease in income tax rates and an increase in immigration that boosts our population. Lower income taxes will increase disposable income, meaning they have more to spend and hence increases the quantity consumers wish to buy at any price, shifting the demand curve to the right. An increase in Australia's population will also shift demand to the right at any given price. This shift in the demand curve will allow producers to increase their prices leading to an expansion in supply and demand at the new equilibrium where more king prawns (quantity rises) are sold at a higher price.

The shift in demand is linked to higher prices and a higher quantity sold but no explanation as to why producers can charge a higher price is provided nor is it explained how a new equilibrium is achieved via contracting demand along the new demand curve as prices rise

Sample answer 2 outlines two demand factors (disposable income and population) and makes explicit why demand at any given price will increase as a result of both factors not just one.

Sample 2

Two demand factors that would be expected to shift the demand curve for king prawns to the right could be lower income taxes increasing disposable incomes and an increase in Australia's population brought about by higher immigration. As disposable income increases consumers have additional money available and their capacity to buy goods and services increases so a "normal" product like king prawns would be expected to see an increase in demand at any given price (ceteris paribus). Equally as Australia's population increases (ceteris paribus) there will be more people to consume prawns at any given price shifting the demand curve to the right at any given price. At the original equilibrium price there will be an excess of demand or a shortage of supply. The producers will observe that they can increase their prices and sell more prawns which will increase the profits available. The higher prices and profits will see more resources allocated to supplying prawns so the supply of prawns will expand towards the equilibrium price. As the price rises the demand will contract along the new demand curve until demand is equal to supply and a new equilibrium with higher prices and quantities of king prawns sold.

An explanation is then provided of how a new equilibrium is achieved because at the original price a shortage/ excess demand occurs which creates an incentive to charge higher prices and make higher profits so supply will expand along the supply curve and the higher prices will contract demand. New equilibrium has higher quantity bought and

Analysis (Sample 2 full marks)

It is important when you are asked to outline two demand factors that you do more than just state two factors that will shift the demand curve. Equally, when asked to justify these two demand factors, two explanations should be provided. Merely stating that higher demand leads to higher prices is not a justification. An explanation of the impact of excess demand/shortage of supply on price and hence producers willingness to supply is also required. Both answers correctly state the price and quantity increase but, for sample answer 1, there is limited explanation/interpretation of how a new equilibrium is achieved.

2. Discuss the role of competitive markets in achieving dynamic and allocative efficiency within an economy and explain the link to living standards. **6 marks**

Sample 1

A good explanation of allocative and dynamic efficiency is provided and they are linked together and an explanation of living standards is provided

An example is provided to provide clarification of link between dynamic and allocative efficiency

Allocative efficiency refers to how well resources such as capital and labour are being used to produce the goods and services that best satisfy society's needs and wants and hence maximise overall living standards (our quality of live in material and non material terms). If allocative efficiency is achieved then resources are best satisfying society's needs and wants and no alternative use will make society better off so living standards are maximised. Dynamic efficiency refers to how quickly resources can be utilised to satisfy society's needs and wants as our tastes and preferences change and the point of allocative efficiency changes. How quickly resources can be reallocated to produce these goods and services will be important in satisfying our living standards. If it takes a long time for resources to move to produce what society desires then dynamic efficiency is low and living standards will decline until allocative efficiency is achieved. For example, if sugar free drinks become more popular but producers take two years to alter their production towards these drinks, then dynamic efficiency is slow and allocative efficiency will not be achieved for at least two years. A competitive market, with many buyers and sellers, will force businesses to produce more efficiently and so allocative and dynamic efficiency are likely to be achieved. This will result in higher living standards than would be likely to occur in a non competitive market.

One characteristic of a competitive market is provided but there is no explanation of why businesses are "forced" to be allocatively and dynamically efficient and so why living standards will be higher in competitive markets.

Sample 2

A good explanation of allocative and dynamic efficiency is provided and they are linked together and an explanation of living standards is provided

An explanation of competitive markets is provided and justification for why competitive markets force businesses to be dynamically efficient is made and thus how that links to allocative efficiency and living standards.

Allocative efficiency refers to how well resources such as capital and labour are used to produce goods and services that best satisfy society's needs and wants. If allocative efficiency is achieved then no alternative use of resources will make society better off so living standards (our quality of life) are maximised. Dynamic efficiency refers to how quickly resources can be utilised to satisfy society's needs and wants as our tastes and preferences change and the point of allocative efficiency changes. The time it takes for resources to be reallocated to produce these goods and services will be important in satisfying our living standards. If it takes a long time for resources to move to produce what society desires then dynamic efficiency is low and living standards will decline until allocative efficiency is achieved. A competitive market involves many buyers and sellers who have very good information about what is in demand, as well as ease of entry and exit so they can easily move their resources to producing goods and services that are in high demand (consumer sovereignty) and hence increase profits. If producers are slow to reallocate resources then a competitor/s will quickly enter the market or increase output to gain market share and hence increase their own profits, whilst the less dynamic producers will find the lower demand for what they are producing will reduce profitability. Given that producers seek to maximise their profits, as consumer preferences change and demand shifts between good and services, the relative price and profit firms can make from the more highly demanded items will also increase. Firms that are slow to adjust will lose market share and potentially go broke. Accordingly, a competitive market will force firms to be more dynamically efficient and therefore more responsive to consumer demands compared to markets that are less competitive. This will result in higher (material) living standards as consumers will have access to better quality and/or lower priced goods and services. For example, if sugar free drinks become more popular but producers take years to respond because they have an effective monopoly/oligopoly (i.e. market power prevents an erosion of profits that would occur in a more competitive market), then dynamic efficiency is low and allocative efficiency will not be (quickly) achieved, lowering living standards.

An example is provided to further demonstrate their understanding. However, enough has been written and the example simply serves to consolidate the quality of the response! Note it would also be possible to approach this question by discussing how competitive markets in the absence of government intervention can lead to a market failure because consumer sovereignty may lead to resources being allocated towards goods and services with negative externalities, or that damage common access resources, or are a result of asymmetric information (illicit drugs, land clearing, over fishing etc), that are not in societies best interests in the short or long run. Dynamic efficiency might be high, such that if the demand for illicit drugs increases resources quickly flow to this production, but the allocation of resources would not be allocatively efficient! Resources are also unlikely to flow to areas with positive externalities such as public goods, like education and health, because not everybody will be willing to pay a "market price". So competitive markets in the absence of government intervention may be dynamically efficient but will not be allocatively efficient.

Analysis (Sample 2 full marks)

Both answers do a good job of explaining what allocative and dynamic efficiency are and how they are linked to living standards. They both also provide an example to demonstrate/consolidate their understanding. However, while Sample 1 provides a characteristic of competitive markets, only Sample 2 provides enough features and explanations to justify why changing demand (which is related to consumer sovereignty) in a competitive market will force a reallocation of resources towards the higher priced and more profitable items, ensuring dynamic efficiency is higher and so allocative efficiency is (more quickly) achieved. Note also that the following passage makes a clear link back to the question, helping to maximise the chances of full marks being awarded. *"…Firms that are slow to adjust will lose market share and potentially go broke. Accordingly, a competitive market will force firms to be more dynamically efficient and therefore more responsive to consumer demands compared to markets that are less competitive. This will result in higher (material) living standards as consumers will have access better quality and/or lower priced goods and services."* [Note: Although the key skills in the study design does not directly link the role of markets in allocating resources to living standards, the key knowledge does make explicit the role of relative prices in markets on the allocation of resources and the effect on living standards. Economics is also all about using resources to best satisfy the needs and wants of society so it is not unreasonable to expect a question along these lines.]

Q3. Explain why a producer would prefer to operate in a market with low price elasticity of demand (PED) for a product and outline the significance of one factor influencing the PED. 4 marks

Sample 1

PED is defined in terms of the relationship between price and quantity demanded.

A link is shown between low and high PED and its impact on profits due to how quantity demanded responds and an example is provided (always helps to demonstrate understanding)

The PED refers to how the quantity consumers are willing to buy will respond to a change in the price of the relevant good or service. In a market with low PED, a given % change in price will cause a smaller % change in quantity demanded. For example, if raising the price by 10% leads to a 5% fall in sales, then the product will have a low PED. This means that a low PED allows producers to make more profit if they raise prices because the negative impact on quantities sold will not be enough to outweigh the positive impact from higher prices, enabling the total sales revenue (i.e. price X quantity) to increase. In contrast, a high PED would mean that a 10% rise in price would lead to a greater fall in demand (of say 50%), which will lead to lower profits overall due to the higher price having a larger impact on the quantity bought. Producers therefore wish to operate in a market with low PED. The degree of necessity to consumers will influence how consumers respond to a change in price. If a good or service is a 'necessity' (i.e. a need), then as the price rises consumers are likely to keep their demand relatively constant and reduce consumption of less important goods and services (i.e. those that are not necessities). Addictive products, like tobacco, are a good example of products with a low PED. It highlights an important reason why governments impose higher and higher excise on tobacco, knowing that the higher tax actually increase government tax revenue.

An outline/ brief explanation is provided of a factor (necessity) that causes PED to be low and a clear example is provided to demonstrate this factor (caused by addiction in this case)

Sample 2

The PED relates to how quantity responds to a change in price. Low PED will allow firms to raise price and increase profits. Producers generally seek to maximise profits and so they want to operate in a low PED market whenever possible. A factor that would be likely to influence the PED is the degree of necessity. This can be influenced by advertising so more advertising will mean that a product is more likely to be a necessity and elasticity will therefore be lower.

Elasticity itself is defined as how quantity responds to a change in price BUT there is no statement of what low PED actually means in terms of how consumer demand responds to a change in price.

A clear link between low PED and profit is made (higher) but no justification of why profit rises.

A suitable factor affecting PED is identified but student spent time outlining a factor affecting the 'degree of necessity' rather than outlining the significance of a factor influencing the PED (not just elasticity)

Analysis (Sample 1 full marks)

Both answers are similar in their approach but only Sample 1 accurately defines low PED, whilst Sample 2 merely defines 'elasticity' without providing clarification of what 'quantity' means in the context of the question (QD or QS?). Both link low PED to higher profits and hence justify why low PED is preferred but only Sample 1 explains why profits are higher (because of demand falling by proportionally less than the price rise). Both answers outline why necessity/need influences consumer demand to remain high in the face of higher prices but only Sample 1 links this to low PED rather than just PED. Sample 1 also provides an example to support their explanation. Had Sample 2 shown what low 'price elasticity of demand' actually means rather than just 'elasticity', and then linked necessity to low PED specifically rather than more generally, then potentially it could also have scored full marks in far fewer words (often an issue in an exam!)

Q4. Evaluate the role of free and competitive markets in allocating resources. 5 marks

Clear link between free and competitive market and how resources are allocated based on profit and consumer sovereignty

Clear explanation of what an efficient allocation of resources does and does not mean.....e.g. satisfying needs and wants of society overall not just what individual consumers may desire.

Clear link to why unregulated markets are effective at reallocating resources to satisfy consumer desires due to relative price and profit increasing as demand increases.

Sample 1

A 'free' market is one that is free of any intervention/controls and so producers are free to use resources in whatever way that maximises profits. Markets are effective (dynamically efficient) in allocating resources to satisfy consumer demand (consumer sovereignty). In order to produce goods and services, resources such as labour and capital are required. In a 'competitive market' with many buyers and sellers, and easy entry and exit from a market, producers will quickly respond to changing consumer demands in order to maximise profits. This reallocation of resources occurs because, as the demand for one output increases, producers will observe shortages in the market and the price rises to attract new supply, increasing the relative price received compared to an alternative use. This increases the relative profit from the product in greater demand and results in unregulated markets being effective at allocating resources to satisfy consumer preferences. However, what some consumers desire (e.g. illicit drugs, tobacco, overconsumption of alcohol) may not be what best satisfies the needs and wants of society as a whole (allocative efficiency). Accordingly, satisfying consumer needs is unlikely to be the most allocatively efficient use of resources that best satisfy society's needs and wants, which ultimately means that free markets will lead to an (allocatively) inefficient allocation of resources. Markets will fail to deliver the best outcomes for society. In other words, free and competitive markets will fail to achieve the most allocatively efficient allocation of resources and these 'market failures' can come in a number of forms. For example, markets fail due to externalities associated with production and consumption of some goods and services which leads to an over or under-allocation of resources to the production of these goods and services. In the case of pollution as a negative externality, it is often created in production that damages current and future living standards. Without regulation, excessive pollution would occur and there would be an over-allocation of resources to relative 'dirty' forms of production and therefore an under-allocation of resources to 'cleaner' forms of production. If, however, producers were forced, via laws/regulations, to pay the full cost of this pollution (i.e. the government attempts to internalise the negative externality), then the market price would rise and consumers would buy less. This would ultimately result in fewer resources being allocated to this output and hence help to rectify the market failure (too many resources causing pollution). Because of market failures such as this, governments intervene in markets via regulations and controls in order to ensure that allocative efficiency is more likely to be achieved than under an unregulated market.

Explanation of why free markets fail and an example is provided to show understanding.

The evaluation explains why markets fail if unregulated and then links it to government intervention and back to the question, an excellent way to end an evaluation!

Sample 2

A clear explanation of what is meant by an unregulated market

A clear explanation of why unregulated markets will alter resource use to satisfy consumer preferences based on relative price and profit.

Dynamic efficiency is defined and is related to how efficiently resources are being used and why unregulated competitive markets will respond quickly due changes in demand.

A free market is one free from any regulation and controls. A market is where buyer and sellers come together and in a competitive market where there are many buyers and sellers and easy entry and exit from the market producers will be forced to produce what is in demand or another firm will enter or increase their output to gain market share and higher profits. This occurs because as demand increases producers will observe shortages in the market and will increase their prices to increase their profits and make it worthwhile allocating more resources to its production. This raises relative price compared to alternative uses of resources and hence relative profit increases and more of this output will be created. Dynamic efficiency refers to how quickly resources can be allocated to satisfying consumer needs and the fear of competition and losing market share will mean that firms will quickly alter what and how much they produce to maximise their own profits by satisfying consumer sovereignty. A regulated market with controls and laws may be slow to respond to changing consumer needs for instance government regulation restricting where and how many houses or flats can be built on land will force up prices and reduce the markets ability to satisfy consumer needs for more property. Thus an unregulated market will be best at satisfying consumer sovereignty due to improved dynamic efficiency.

The impact of regulation on how quickly resources can be reallocated is then shown to potentially reduce dynamic efficiency with a good example and linked back to why a regulated market could then be slow to satisfy consumer demand which is then linked to why unregulated markets are more effective at satisfying consumer sovereignty. BUT no discussion of what allocative efficiency means or why satisfying consumer needs alone can and does lead to market failure so the evaluation has led to a false conclusion and therefore should not receive full marks

Analysis (Sample 1 full marks)

[To evaluate means to explore an issue or topic and reach a conclusion and ideally provide a solution. For evaluation questions, students should attempt to focus on factors such as 'costs (disadv) versus benefits (adv)', 'short versus long run' implications and the implications for various 'stakeholders' (e.g. consumers versus producers, current generations versus future generations).] The key to this question is recognising that resources are best allocated when they are used to maximise the needs and wants of society as a whole and not what individual consumers think is best for them. In other words, allocative efficiency is the most important form of efficiency and just satisfying consumer demands will lead to market failure (where resources are not allocated to best satisfy society's needs and wants). This is the major reason why Sample 2 is deficient. Dynamic efficiency is important in allocating resources but consumers do not always desire what is in their best interest. For instance, the demand for illicit drugs such as "ice" is rising but the negative externalities associated with their consumption (misery, crime, poor health, death, violence etc) means that whilst high profits may be available to producers, the resources are not being used to best satisfy the needs and wants of society (market failure). Thus to prevent resources being allocated in a way that creates market failure, it is important that governments intervene to regulate the use of some activities within the economy. Sample 1 adequately addresses the question and adds value by specifically exploring an example of a particular market failure (pollution as a negative externality in production) that makes unregulated markets problematic. Note that students could equally choose other market failures, such as public goods or asymmetric information.

The reason for govt intervention is made clear, markets do not always get it right! And the desire for allocative efficiency is explained and defined

An example of intervention is provided and an explanation of how and why they intervene provided

Q5a. Using an example, explain how government intervention in a market has unintentionally reduced the efficiency of resource allocation.
6 marks

Sample 1

Markets left to competitive forces will typically be technically efficient and dynamically efficient because of the need to stay competitive and to produce what is in demand (consumer sovereignty), in order to maximise profits. However, consumers do not always "buy" what is in society's best interests, leading to an under (e.g. education) or over allocation of resources to some forms of production (e.g. illicit drugs), hindering our ability to achieve allocative efficiency (the allocation of resources that best satisfies the needs and wants of society). The government typically involves itself in markets to alter the allocation of resources so that resources are more likely to be used in an allocatively efficient manner.

E10 Biofuel is a fuel that contains 10% ethanol. The NSW and Qld governments have mandated (regulation) that 4% of fuel in QLD and 6% of fuel sold in NSW should be E10 biofuel. The government has intervened in this market to promote a more environmentally friendly fuel source that reduces reliance on fossil fuels (reducing negative externalities by helping to reduce emissions, assist with managing "climate change" and boosting intertemporal efficiency by ensuring fossil fuels last longer), and to establish an Ethanol industry in Australia.

The government intervention mandates large fines of up to $550,000 per quarter for not achieving the E10 targets. However, consumers typically do not want to buy E10 fuel and many retailers have removed regular unleaded fuel pumps to force consumers to buy E10. While E10 demand has increased, consumers have also switched to buying premium fuels which most cars do not need, costing motorists more money and reducing spending on goods and services that would bring greater utility. The Productivity Commission and the ACCC both recommend the removal of the biofuel mandates because it reduced consumer choice, damaged dynamic efficiency due to reducing competition and did not bring environmental benefits, indeed protecting local ethanol producers by discounting the fuel excise on local production but imposing the full excise on imported fuels actually prevented the importation of more environmentally friendly fuel sources.

The impact of the intervention is explained AND evidence that the intervention did not achieve its objectives is provided

Overall, the government intervention led to an allocation of resources that actually reduced how efficiently resources are used in the Australian economy because consumers were "forced" to buy more expensive fuel that reduced their discretionary income and hence their ability to satisfy needs and wants that bring greater utility. This also reduces the income of other businesses potentially increasing unemployment, which prevents technical efficiency from being achieved, since there are unused resources sitting idle. Resources were also used for ethanol production rather than in areas of greater comparative advantage such as agricultural exports. On top of these unintended consequences the desired environmental benefits were not achieved. In combination, this intervention has made it harder to achieve allocative efficiency and as a result government intervention has led to a less efficient allocation of resources in the economy.

Direct reference to why and how the intervention has created unintended consequences and reference to efficiency is made explicit...something students often fail to make clear

The answer is linked back to the question, often a good strategy to ensure that the question has actually been responded to appropriately!

Why governments intervene to help achieve allocative efficiency due "market failure" caused by "consumer sovereignty" is explained

How and why the government has intervened in the labour market is explained and evidence that it is a current intervention

Sample 2

Governments typically intervene in markets to correct for market failure which occurs when resources are not used in a way that best satisfies the needs and wants of society (allocative efficiency). Consumers will typically buy what is in their own perceived self-interest rather than consume what is in the best interests of society. For instance, we typically over consume tobacco, illicit drugs and fossil fuels (which create negative externalities whereby costs are imposed on third parties) and under consume education and health (positive externalities, providing benefits to third parties).

In order to ensure that workers are paid a salary that allows them to live a "dignified" quality of life, the government intervenes in labour markets by setting a minimum wage. This wage is adjusted each year by Fair Work Australia (FWA). In 2017, FWA also reduced penalty rates for weekend work because it said it created a two tier playing field between large firms who set wages based on Enterprise Bargaining Agreements (EBA's) and small businesses who were forced to pay weekend penalty rates. As a result, FWA felt that many small businesses simply stayed closed or worked reduced hours.

Setting a minimum wage above the market clearing equilibrium price/wage (where demand = supply) means that more workers are attracted to offer their services and so participate in the labour market. This leads to an expansion in the supply of labour. However, setting the wage too high increases the cost of employing people and so firms typically substitute to capital (machinery/automation/robotics) or reduce the hours they open. As a result, the demand for labour falls, leading to a contraction along the demand curve for labour and higher unemployment. As a consequence, allocative and technical efficiency are not achieved, demonstrating that government intervention can have unintended consequences.

The impact of this intervention on employment and participation rates is explained

Here is where the response is deficient. No justification or link is made between unemployment and the impact on technical or allocative efficiency. While an explanation of the impact of a minimum wage on unemployment is made in the previous paragraph, technical efficiency is not defined nor specifically linked to unemployment. In addition, the student does not explain why having unemployment means allocative efficiency is not achieved. A link to only one efficiency is likely to be sufficient to achieve full marks, but it must be stated explicitly and the link must be transparent.

Analysis (Sample 1 full marks)

Sample 1 is more than worthy of full marks, providing more detail than would be required for 6 marks, which runs the risk that the student might be unable to finish other parts of the paper! Despite this potential shortcoming, the response is excellent in that it provides clear links (examples) of how E10 intervention can have unintended consequences and negatively impact on efficiency. In fact, its reference to all four "efficiencies" indicates a high quality candidate. However, it is likely that only one unintended consequence on resource allocation is required to achieve full marks in the examination, with the best responses focusing on allocative efficiency.

Why governments intervene to correct for market failures (which is not a specific requirement of the question, but does lead to how their intervention can have unintended consequences) provides a great lead into the example of how the State governments have intervened in the petrol market. Why and how they have intervened is clearly explained and its impact on how resources are allocated is clearly linked to allocative efficiency and consumer sovereignty. Reference to the two premier government advisory organisations adds weight to the finding that the intervention has reduced consumer outcomes and led to a less efficient allocation of resources, which is clearly explained and linked back to the question. Students often struggle to make the final links, and that is the problem with Sample 2, which, until the final paragraph, is also on track for full marks, but in the end does not explicitly link the unintended consequences of the intervention in labour markets (unemployment) to how efficiently resources are allocated via its impact on either technical or allocative efficiency .

Q5b. Use a fully labelled diagram to show how the market referred to in part (a) will be affected by either the government intervention, or some other factor. 3 marks

Analysis (Sample 1 full marks)

While both responses correctly label the respective diagrams, sample 1 is superior because the student demonstrates how the removal of regular unleaded petrol to "force" consumers towards buying E10/Biofuel (as a result of the regulation and fines for non-compliance) has actually led to a large increase in demand for Premium fuels (Q2-Q1) that costs more money (and for many cars is an unnecessary expense). The shift in demand and the impact/movement of quantity and price (P2-P1) is shown clearly. The student cleverly uses an elastic supply curve (as well as an inelastic demand curve) so that only a small increase in price occurs. In sample 2, the student does a good job of showing the equilibrium wage and quantity (Q1/P1) and also shows the impact of setting a minimum wage above the market clearing level (E1). However, the student confuses the amount of unemployment created by ignoring the expansion in supply of labour that occurs due to

higher wages. In other words, the student incorrectly uses the original equilibrium supply of labour as the reference point (Q1) when Qs-Qd is the actual unemployment created by setting the min wage above equilibrium.

Why the demand curve shifts is explained. The mention of elasticity is not required but does emphasise the quality of the student's understanding

The shortage created is explained and why this sends signals to producers that they can charge a higher price and increase their sales and profits leading to an increase in the allocation of resources to Premium fuels.

Q5c. Explain how the market adjusts following the government intervention. 2 marks

Sample 1

Following the mandated (regulation) requirement for E10 fuel sales and significant fines for non compliance, producers/ suppliers in NSW removed the ability for consumers to buy regular petrol by limiting the availability/ supply of regular fuel. Since fuel is a necessity for many households, it has a low price elasticity of demand, which meant that consumers needed to substitute to an alternative fuel source. Many moved to buying Premium fuel which shifted the demand curve to the right, such that at any given price, the demand for Premium fuel increased, leading to a shortage of Premium fuel at the original price. This sends a signal to producers that they can increase prices and make higher profits, leading to an expansion in supply and more resources being allocated to the supply of Premium fuel in NSW. Supply for fuel is relatively elastic since fuel is easily stored and so only a relatively small price rise is needed to attract the extra resources required to meet the increased demand. As the price rises demand contracts until a new equilibrium is achieved at E2, with a higher price and greater quantity being bought and sold.

Clear reference to the expansion in supply and the contraction in demand to reach a higher equilibrium price where demand and supply have both increased from the original equilibrium is explained

Sample 2

Setting the minimum wage (P2) above the market clearing wage (P1) has led to an expansion in the supply of people willing to work, boosting participation rates. At the same time the higher wage has reduced producers demand for workers leading to a contraction along the demand curve (Qd). This has created unemployed workers (Q1-Qd).

The student has also underestimated the impact on unemployment by only considering the previous demand for labour at E1 and the fall in demand to Qd, which ignores the increased supply of labour attracted to participate by the higher min wage. In addition, while the impact of the minimum wage is linked to unemployment, the student does not link this adjustment to a failure of the market to reach an equilibrium.

The impact of the intervention is linked to a contraction in demand and an expansion in supply

Analysis (Sample 1 full marks)

Sample 1 is superior because it explains why the Premium Fuel market has moved to a new equilibrium following the initial increase in demand. It makes specific mention of the expansion in supply as well as the contraction in demand following the price increase (which was needed to attract the greater supply and remove the shortage). Sample 2 explains the movements along the demand and supply curves but does not explain that these changes prevent equilibrium being achieved, which is the cause of the unemployment. While reference to the price elasticity of demand is not required for full marks, it serves to 'add value' and highlight the ability of the first candidate.

Q6. Explain how a decrease in the price of a good can affect the demand for a complement. 2 marks

Misspelling 'complement' is not a great 'look' but it will not be penalised

Student has not clarified why the 'cheaper' good will increase the demand for the complement. This effectively requires the student to demonstrate an understanding of 'complement'.

Sample 1

A decrease in the price of a good can affect the demand for a compliment as if the good is cheaper, consumers will be more willing to purchase that the compliment in comparison to another that is more expensive, therefore demand for the complement will increase. This will in turn lead to an excess demand at the old price, which forces up the price and leads to more resources being allocated to the production of the complement over time.

The final sentence (while accurate) is irrelevant in the context of the question.

Effectively demonstrating an understanding of 'complement' and wisely including a relevant example

Sample 2

A complement is typically consumed with a product, such as butter being a complement for bread. If there is a decrease in the price of a good (such as bread), it is likely to increase the demand for its complement (such as butter) because bread consumption is likely to rise (due to the law of demand), which necessarily leads to an increase in demand for its complement given that both goods are consumed together.

Accurate identification of what happens to the demand for the complement when the price of a good falls

Accurate identification of what happens to the demand for the complement when the price of a good falls

Analysis (Sample 1 full marks)

Sample 2 is superior because it demonstrates an understanding of the key term in the question (i.e. complement) before clarifying why the nature of the complementarity of the two goods is the key reason behind the increased demand for the complement. While not crucial to achieving full marks, the use of an example (i.e. bread and butter as complements) enhanced the overall quality of the response. In contrast, Sample 1 highlighted the direction of the movement in the demand for the complement but was less convincing in demonstrating an understanding of why the demand for the complement increases. The additional reference to the impact on 'the market' for the complement was unnecessary - while this would not penalise the student directly, it does mean that the student will have less time to complete the remainder of the paper.

Student should have attempted to demonstrate an understanding of market failure and efficiency of resource allocation

This question does not require a detailed explanation of elasticity

Q7. Using an example, explain how government intervention in markets to address market failure can unintentionally decrease the efficiency of resource allocation. 6 marks

Sample 1

Governments typically intervene in markets to correct for market failure. An example of intervention is the use of excise taxes to reduce the demand and hence quantity of resources allocated towards tobacco based products and services. Since 2013 the Federal Government has been imposing an additional 12.5% excise tax increase on tobacco each year until 2020. Because smoking is addictive the demand for cigarettes is price inelastic meaning that demand falls by a smaller percentage than the price rises so that producers who collect the excise tax typically pass most of this cost on to consumers. However, these high prices have led to a rise in criminal activity because some consumers are substituting towards illegal tobacco which has reduced the effectiveness of higher prices to limit the demand for tobacco and hence how resources are allocated.

No specific type of efficiency has been mentioned, the response is general in nature rather than referring specifically to how a measure of efficiency has been negatively impacted: allocative/ technical/ dynamic/ intertemporal.

Student explains the meaning of market failure and an efficient allocation of resources, referring specifically to allocative efficiency as their measure of efficiency.

Sample 2

Market failure occurs when markets are not allocating resources in an efficient way that will maximise living standards. Unregulated markets are typically driven by what consumers wish to buy. However, consumers do not always buy what is in their best interests which leads to resources being allocated in a way that does not maximise the well being of society overall (allocative efficiency is not achieved so market failure occurs).

As a result governments intervene in markets to correct for this market failure but this intervention can lead to a less than optimal allocation of resources. For instance, tobacco and smoking creates negative externalities (costs imposed on third parties not paid for by the "consumer") such as passive smoking and higher health costs. To correct this externality (market failure) the government has been raising the excise tax on tobacco by 12.5% per year. This has seen the price of cigarettes in Australia increase significantly more than the prices paid in some countries (less than $2 a packet in some Asian countries). These price differences create large profits for criminal groups to exploit and cause many consumers to substitute to illegal tobacco products, leading to significant amounts of excise tax being avoided due to black market sales and an increase in the costs of policing illegal activities.

When an economy is directing more resources at criminal activities it is very unlikely to be achieving the allocation of resources that best satisfies society's needs and wants. The lost tax revenue cannot be used to improve services and infrastructure, further reducing the capacity to allocate resources in way that best maximises living standards. Additional resources are also being allocated towards policing the increased criminal activity reducing the ability to prevent other more serious crime such as hard drugs and gang activities. More resources are also being directed at criminal activity, also reducing how effectively we are using resources. As a result, it can be argued that the high excise taxes being imposed to reduce tobacco consumption and improve resource allocation, are not being done in a way that minimises the opportunity costs of the interventions and creates unintended consequences that impact negatively upon allocative efficiently.

Student provides a detailed explanation of how the government is intervening via excise taxes and its impact on price and how these high prices have led to a rise in criminal activity, fall in government revenue and rise in policing costs

Student has linked the negative consequences of intervention such as lost tax revenue and criminal activity to why a less efficient allocation of resources has occurred, demonstrating that intervention can have unintended consequences

Analysis (sample 2 full marks)

This question is all about how government intervention to correct for market failure can bring unintended consequences and impact negatively upon efficiency in the allocation of resources. Sample 1 does not define/demonstrate an understanding of either market failure or how to measure an "efficient allocation of resources". Sample 1 also spends too much time explaining elasticity and the impact of higher prices on demand for cigarettes, when this time should have been spent on how the higher prices changed relative prices and caused a substitution into other products which ultimately had a negative effect on efficiency. While sample 1 did link high prices to an increase in illegal activity and a smaller fall in consumption, it needed to spend more time 'unpacking' this link, and in particular, how it negatively impacted on a specific type of economic efficiency. It is reasonably clear that the student in sample 1 understands how government intervention can bring unintended consequences, but they have not addressed the specifics of this question enough for full marks. In contrast, sample 2 demonstrates an understanding of market failure and efficiency in the allocation of resources. It then provides an explanation of the policy actions and specific examples of the unintended consequences, such as lower tax revenue and higher policing costs, which are specifically linked to why these reduce the ability to achieve an allocation of resources that best satisfies society's needs (allocative efficiency). The detailed explanation of why governments intervene in markets is not required but does add value to the quality of the response is typical of the sort of responses provided by the best students.

Q8. Referring to the chart, describe the trend in the growth of housing prices since 2017. 2 marks

This is incorrect because the graph refers to growth in house prices. House prices did not fall in 2017, they continued to rise but at a slower rate.

Irrelevant because 2016 is beyond the time frame required for discussion

Irrelevant because the question does not require a discussion of causes or effects

Sample 1

Australia's house prices have fallen since 2017, from approximately 10% in 2017 to approximately -7% in 2019. This followed a period where prices rose from approximately 4% in 2016 to 10% in 2017. The rise in prices during that period occurred because of the strong demand for houses relative to the supply and caused what became known as the housing affordability crisis, with young Australians locked out of the market. Thankfully, prices started to fall in 2017 as more housing construction occurred and demand fell as consumers became fearful about possible government policies that had the potential to reduce prices.

Sample 2

The growth in Australia's house prices have trended down from a growth rate of approximately 10% in 2017 to a growth rate of approximately -7% in 2019.

Analysis (sample 2 full marks)

Sample 2 receives full marks. It is succinct and to the point, describing the downward trend in the 'growth' of house prices as well as making good use of the statistics contained in the chart. In contrast, sample 1 highlights that the student has not accurately interpreted the chart and confused 'growth in price' with 'price'. In addition, the student referred to periods before 2017 (not relevant) and included further information that, while accurate and logical (e.g. the causes and effects of the change in house prices) was NOT relevant in the context of the question.

YOU BE THE ASSESSOR: CORRECTIONS AND ANALYSIS (U3 AOS 2)

1. Explain how relatively low wage growth can influence the achievement of full employment. 4 marks

While it is true that low wages growth 'can' reduce the effective costs of production and inflation, much more is required from the student on how this occurs. Instead, the student launches into a demand side explanation without consideration of the 'supply side' impact.

Sample 1

Sample answer: Relatively low growth in wages will reduce the costs of production and the rate of inflation, which in turn increases Australia's international competitiveness and lifts aggregate demand (AD). This will result in the AD shifting to the right, leading to an increase in real GDP and economic growth. With greater levels of national output, businesses will require more labour which adds to employment and reduces the rate of unemployment. This means that the government is more likely to be successful in achieving its full employment goal.

Student has not demonstrated an understanding of the FE goal, which is a key part of the question

Student effectively 'signposts' their response (let's the assessor know how where the response is heading

Student demonstrates an understanding of the FE goal. Reference to NAIRU not required but adds value to the quality of the response

Sample 2

Sample answer: Relatively low growth in wages helps to stimulate economic growth and contributes to the achievement of full employment, which occurs when the economy experiences the lowest unemployment rate possible before inflationary pressures become unmanageable (or the NAIRU rate of approximately 5% unemployment). This is because low growth in wages helps to contain labour costs and decreases pressure on the costs of production. Businesses will then be more willing to increase investment and expand capacity, which helps to boost production levels. This should lead to an increase in the demand for labour, raise employment levels and decrease the rate of unemployment towards the full employment level. In addition, the lower price of labour provides an incentive for businesses to demand more labour relative to capital (an expansion along the demand curve in labour markets) which has an additional favourable impact on both jobs growth and the rate of unemployment.

Final sentence adds value and leaves the assessor in no doubt that the student understands how low wages growth helps to create more jobs

An effective supply side explanation is required for how lower wages growth (as a supply factor) can reduce the UE rate.

Analysis (Sample 2 full marks)

Overall, Sample 1 lacks sufficient depth. While it highlights that the student understands the direction of the relationship, it leaves the assessor in some doubt as to the student's knowledge of the key links. It also makes the common mistake of not addressing a key part of the question, which is to move beyond an explanation of the impact on unemployment (or the unemployment rate) and to consider the implications for the achievement of the government's goal. Demonstrating an understanding of the goal, when it is referenced in the question, is important. Sample 2 is superior because it addresses all parts of the question and clearly demonstrates an understanding of the necessary links. Note that this student should still receive full marks even without reference to lower inflation and improved international competitiveness, which will occur (ceteris paribus) when the costs of production fall and the AS curve shifts to the right. Reference to inflation and international competitiveness provide an alternative avenue of answering the question successfully (providing the necessary supply side links are established).

2. Outline why long-term unemployment increased in Australia up to 2021. 2 marks

Clear identification of one cause of LT UE

Accurate outline of how the factor impacts on the demand for labour and LT UE

Sample 1

This has occurred because of technological change in the economy which has altered the structure of Australian industries and increased reliance on capital relative to labour. This has resulted in higher levels of structural unemployment, with many of those structurally unemployed remaining so for more than one year.

Demonstrates understanding of LT UE as distinct from UE more generally

Poor choice of factor as it relates more to cyclical UE

No attempt to link to LT UE

Sample 2

A decrease in consumer confidence over recent years has had a negative effect on Australia's unemployment rate. As consumer confidence falls, the demand for goods and services in Australia decreases, meaning that firms become less willing and able to supply, shifting the nation's aggregate supply curve to the left. This results in higher costs of production and prices, which causes producers to decrease their demand for labour and increasing the rate of long term unemployment.

Deficient explanation for how lower CC affects UE . The student should instead choose the AD route rather than the AS route

Despite mentioning LT UE, there is no outline for why this increases as distinct from UE more generally

Analysis (Sample 1 full marks)

Despite being the briefer response, Sample 1 is superior because it focuses on a key cause of higher long term unemployment (technological change/structural unemployment) and demonstrates a clear understanding of what is meant by long term unemployment (i.e. being unemployed for more than one year). Sample 2 focuses on a factor causing a rise in unemployment more generally and the student makes no attempt to link the factor to long term unemployment. In addition, the student incorrectly focuses on a supply side explanation for how a fall in consumer sentiment will impact on the rate of unemployment.

3. Describe one cause and one effect of a low rate of inflation up to the start of 2022. 4 marks

Clear identification of one cause of low inflation

Explanation is deficient. Link between lower OS growth and domestic inflation requires more depth. In addition, low rates of inflation is not the same as deflation

Sample 1

A low rate of inflation was caused by the slower rates of economic growth experienced by the USA, Europe and China. This led to slower growth in export demand and deflation in Australia. These lower prices meant that the purchasing power of consumers or households improved, such that material living standards of Australian households will increase.

Too brief. Why and how? What are material living standards?

Clear identification of one cause of low inflation

Explanations for how slower growth OS reduces inflationary pressure

Sample 2

The relatively low rate of inflation was caused by a number of factors, including the slower rates of economic growth experienced by Australia's trading partners. Slower growth in the USA, Europe and China has reduced export demand and demand inflationary pressures in Australia. Slower growth in export demand means that Australian exporting businesses experienced a reduction in sales, which led to excess capacity which, in itself, eased pressure on prices. In addition, slower growth in export volumes or production meant that exporters experienced a fall in incomes and profits, which resulted in lower returns to its factors of production, such as lower dividends for shareholders and lower wages for workers. This further reduced demand inflationary pressures in the economy and contributed to the very low rates of inflation experienced in Australia. This brings many benefits for the Australian economy, not least of which is the beneficial effect on international competitiveness and the longer run benefits this brings for Australia's balance of payments, economic growth and living standards. Lower prices means that net exports and AD more generally should eventually rebound, resulting in a lower CAD as well as a higher level of AD and real GDP. Stronger growth in real GDP should therefore help to create employment and incomes, and ultimately boost material living standards over time as Australian households will have the ability to purchase more goods and services.

Clear identification of one effect of low inflation

Explanations for how lower inflation can provide benefits

Analysis (Sample 2 full marks)

Overall, Sample 1 lacks sufficient depth. With respect to the cause of low inflation, the student's response requires more information and it confuses lower inflation (disinflation) with deflation. [While Australia did indeed experience a quarter of deflation (i.e. lower prices for a quarter), it did not experience 'deflation' over the past two years.] With respect to the effect of low inflation, its link to improved material living standards is too shallow and the student does not attempt to demonstrate an understanding of material living standards. Sample 2 provides two reasons to explain how slower overseas growth can contribute to a lower rate of inflation in Australia. [However, only one is required and the second simply adds value.] It also provides depth in describing how lower inflation (as distinct from deflation) can contribute to an improvement in material living standards over time.

4. Explain how an increase in aggregate supply might contribute to an increase in the rate of economic growth. 2 marks

Demonstrates an understanding of what is meant by an increase in AS

Demonstrates an understanding of how an increase AS can occur and links to productive capacity. This is not necessary for full marks, but serves to add value to the quality of the response

Sample 1

An increase in aggregate supply (AS) means that producers are more willing and able to produce goods and services. It usually occurs as a result of improved supply conditions and effectively leads to an increase in productive capacity. The increase in AS exerts downward pressure on prices (or inflation), as businesses experience excess supply and discount prices to clear surplus stock. This in turn stimulates AD and leads to an increase in real GDP (economic growth).

Demonstrates an understanding of how the increase AS ultimately leads to an increase in real GDP

Sample 2

If there is an increase in aggregate supply (AS) it means that more goods and services will be produced per unit of output (greater productivity) which means that producers will be more willing to raise output (i.e. an increased willingness to supply). This will result in higher output levels across the economy. Given that output equates to real GDP, growth in output by producers means that real GDP increases, which means that economic growth has increased.

This is an incorrect statement for it implies that AS can only increase as a result of higher productivity.

Deficient explanation for why an increase in AS contributes to an increase in economic growth.

Analysis (Sample 1 full marks)

Sample 1 is the superior response because it succinctly demonstrates an understanding of AS and provides a logical and plausible explanation of how an increase in AS leads to an increase in real GDP. Note that the student appropriately refers to the role of prices (i.e. downward pressure on inflation) and AD when explaining how an increase in AS leads to an increase in economic growth. Sample 2 makes the mistake of assuming that AS only increases in response to higher productivity. [The student should have used productivity growth as an example of a factor that leads to an increase in AS]. In addition, the student does not adequately explain how an increase in AS contributes to an increase in economic growth. It is insufficient to assert that an increase in AS results in higher output without an explanation for how or why this occurs.

5. Explain how growth in both productivity and the participation rate can lead to an increase real GDP. 4 marks

An inaccurate definition of productivity (too narrow as it specifically refers to labour productivity.

The link between productivity and real GDP too shallow. Note also that the student should refer to real GDP (include 'economic growth' in brackets).

Sample 1

Growth in productivity effectively means that the nation is producing more goods and services per labour hour employed and highlights that efficiency has increased. This contributes to disinflation in the economy, which in turn stimulates AD and economic growth. The **participation rate (PR)** refers to the degree to which people are participating in the labour force and, when it increases, it means that businesses will have access to more labour, enabling more output to be produced. This increases the rate of growth in production as measured by real GDP.

An inaccurate definition of participation rate

The link between PR and real GDP is too shallow.

An accurate definition of productivity.

The link between productivity and real GDP is detailed

An additional sentence of 'value add' makes it clear that the student understands the key links

Sample 2

Growth in productivity effectively means that the nation is producing more goods and services from any given volume of inputs, such as labour and capital, and indicates that Australia is more (technically) efficient in the way it produces goods and services. This helps to contain costs of production and allows businesses to reduce prices without impacting on profit margins. These lower prices encourage growth in AD (e.g. growth in Consumption and net exports) which stimulates the rate of growth in production (i.e real GDP). To the extent that lower production costs result in higher profit margins, this facilitates an increase in Investment demand, further boosting AD and real GDP over time. The **participation rate (PR)** refers to the size of the labour force as a percentage of the working age population. A higher participation rate (e.g. via government efforts to entice more mothers back into the workforce) will effectively increase the supply of labour and exert downward pressure on wages (or labour costs). This helps to contain (or reduce) costs of production and inflation, which stimulates growth in AD and lifts the rate of growth in production (i.e. real GDP). In addition, the higher PR helps to protect tax revenue and further encourages growth in Investment and AD].

An accurate definition of participation rate, with an example of a cause to add value (not necessary for full marks)

The link between the PR and real GDP is detailed and accurate. The final sentence of the response is not necessary for full marks, but once again adds value

Analysis (Sample 2 full marks)

Sample 2 is the superior response because it demonstrates an understanding of the key terms (productivity and participation rate), while Sample 2 has made errors that make it difficult for assessors to award full marks even though definitions of these terms is not specifically required in the question. In addition, Sample 2 elaborates on each of the key links that help to explain why higher productivity and PRs are likely to simulate real GDP. Sample 1 makes basic errors or omissions when attempting to elaborate on the links that prevent the student from achieving full marks.

YOU BE THE ASSESSOR: CORRECTIONS AND ANALYSIS (U3 AOS 3)

1. Outline what is meant by an exchange rate depreciation and explain how a fall in Australia's terms of trade is likely to affect Australia's exchange rate. 4 marks

An accurate outline/definition is provided

An example provided to leave the assessor in no doubt that the student understands what is meant by a depreciating exchange rate

Sample 1

An exchange rate depreciation occurs when the value of a country's currency (e.g. the value of the AUD) falls relative to the purchasing power it has over another country's currency. For example, if the value of the AUD falls from USD1.00 to USD0.75 it means that the AUD exchange rate depreciates and one hundred Australian dollars will only be able to purchase seventy five US dollars. A fall in Australia's terms of trade (average prices received for exports relative to the average prices paid for imports) is likely to contribute to an exchange rate depreciation given that many Australian exporters (e.g. iron ore and coal mining companies) are likely to be receiving lower (global) prices for their exported output. This ultimately causes mining companies to receive less foreign currency for any given volume of exports, which negatively affects the total value of export receipts (price X quantity) and leads to a fall in the demand for AUD on foreign exchange markets and a lower AUD exchange rate.

Student demonstrates an understanding of the terms of trade

Student clarifies the exchange rate impact of a falling TOT

Student explains how exporters receive lower prices with a focus on mining companies

Student connects lower prices to lower values received and then accurately connects this to a lower demand for and value of the AUD

Sample 2

Exchange rate depreciation means that the value of the dollar has fallen. It will tend to fall when our international competitiveness falls as a result of declining rates of productivity growth or rising rates of inflation which decreases our international competitiveness. A fall in Australia's terms of trade should lead to a decrease in the exchange rate because the value of exports will decline. This reduction in the exchange rate will then help to increase competitiveness and AD as well as promote economic growth and reduce the current account deficit.

Correct outline but too brief

Providing (accurate) reasons for the depreciation is IRRELEVANT

Correct but too brief

Providing (accurate) effects of the depreciation is IRRELEVANT

Analysis (Sample 1 full marks)

Sample 1 accurately outlines what is meant by an exchange rate depreciation without the inclusion of irrelevant information and then provides a thorough explanation for how a lower TOT leads to a depreciation of the exchange rate. Sample 2 provides an accurate but shallow/brief outline that requires the student to add a little more depth to achieve the full marks for this part of the question. An example (like Sample 1) would add significant value to the quality of the response. Sample 2 also includes irrelevant information (e.g. referring to the possible causes of a depreciation) that does not enhance the quality of the response.

In relation to the impact of a fall in the TOT, Sample 2 provides the correct direction (i.e. a lower TOT causes a depreciation), it does not adequately explain the reason. While it is true that a fall in the TOT typically causes the value of exports to fall, there is no attempt to explain why this occurs, nor why it leads to a lower exchange rate. Instead, it launches into an unnecessary discussion of the effects of a depreciating exchange rate.

2. Explain how a depreciation of the exchange rate is likely to impact on the current account deficit (CAD) and price stability. 5 marks

Brief/limited explanation of the impact on the CAD. The focus is too narrow, ignoring the impact on import competing producers within Australia

More could be done within the BOP (e.g. reference to BOGS/debits/credits)

Unnecessary reference to the NFD

Sample 1

A depreciating exchange rate will increase the demand for Australian exports because foreigners will need to use less of their own currencies to purchase Australian exports. This will contribute to an increase in the BOMT and reduce the size of both the CAD as well as the size of NFD, given that fewer funds (e.g. debt and equity) will need to be sourced from overseas in order to finance the CAD. The lower exchange rate will also help to increase AD and economic growth, which makes it more likely that the government will achieve its goals for strong and sustainable rates of economic growth and full employment (i.e. the NAIRU – non-accelerating inflation rate of unemployment).

However, the lower exchange rate will eventually cause inflation to rise over time because it causes the price of imports to rise, many of which are included in the consumer price index. This means that prices will not be stable and price stability will not be achieved.

Unnecessary reference to the goals of SSEG and FE

Accurate, but limited, explanation of the impact on inflation. Student should have at least elaborated on the supply side impact

Student does not demonstrate an adequate understanding of the PS goal

Demonstrating an understanding of a 'lower exchange rate'

A good outline of the general direction of the response

A sound explanation of impact on CAD

Sample 2

A depreciating exchange rate (i.e. a fall in the value of the AUD on foreign currency markets) is likely to reduce the size of the CAD but make it more difficult to achieve price stability. This is because a lower AUD increases the international competitiveness of Australia's tradables sector because the price of Australian exports effectively falls for foreigners and the price of imports rises for domestic consumers. This boosts the demand for Australian exports, as well raise the demand for goods and/or services produced by Australian import-competing producers. This will increase Net Exports, boosting export credits relative to import debits in the Balance on Merchandise Trade (and Balance on Goods and Services) within the current account of Australia's balance of payments. Other things being equal, this reduces the overall size of debits relative to credits in the current account, which necessarily leads to a lower CAD. The lower exchange rate will, however, add to inflationary pressures and make it more difficult to achieve the RBA's goal of 2-3% growth in the CPI per annum over time. This is because a lower AUD will increase the price of numerous capital and intermediate imports, which adds to the costs of production for many Australian businesses. As a supply factor, this adds to the prices (as businesses seek to protect profit margins) and contributes to growth in inflation. In addition, the lower AUD also adds to demand inflationary pressures given that it stimulates AD via the boost to Net Export demand.

Accurate reference to and definition of goal of PS

Accurate explanation of supply side impact on inflation

Accurate reference to demand side impact on inflation

Analysis (Sample 2 full marks)

At first glance, Sample 1 appears too brief for a 5 mark question. Upon reading the response it becomes clear that the student understood the basic requirements of the question but failed to adequately address all of its key components: demonstrating an understanding of a depreciating exchange rate, its impact on the CAD and inflation, as well as knowledge of the government's price stability goal. However, the relationship between a depreciating exchange rate and the CAD lacks sufficient depth and includes irrelevant information (e.g. reference to the NFD) that adds little value to the response (value 'could have' been added by referring to the lower servicing costs in the future which would reduce the deficit in the net primary income section of the CA). With reference to the impact on price stability, Sample 1 makes the common mistake of failing to demonstrate an (adequate) understanding of the government goal and instead focusing (solely) on the inflationary impact. The explanation of the inflation impact is also very limited, with the student unable to unpack the full supply side and/or demand side impact on inflation. For a bigger question such as this one, students should be prepared to make reference to both the demand and supply side inflationary impacts stemming from a lower AUD. Sample 2 achieves full marks because it addresses all components of the question and provides adequate explanations.

3. Describe the trend in the terms of trade since 2020 and explain a factor which could account for its movement over this time. 4 marks

Misreading of the question is evident as the student is only required to describe trend since 2020, not the whole period

An inaccurate definition of the TOT. No reference to prices.

Sample 1

The terms of trade (exports over imports) has trended up from an index just below 90, and then down to 80, before trending back up to 110, then down to 70 before increasing once again towards the new terms of trade boom Mark 3, where the index was close to 120. This has resulted in a an increase in AD and economic growth given that exporters will be receiving more income from export sales, which eventually flows through to an increase in Investment in the economy. The government will also be receiving more tax revenue which boosts the ability of the government to support economic activity through tax cuts or spending initiatives..

Student is incorrectly explaining an 'effect' of the change in the TOT when the question requires students to focus on a possible cause of the higher TOT since 2020

While these points are valid in relation to the effects of a higher TOT, the misreading of the question prevents the awarding of any marks

A more accurate definition of the TOT

Accurate reading of the question and therefore a sound description of the trend is provided. Note that the correct start point and end point is used

Sample 2

The terms of trade (export prices over import prices) has trended up since 2020 from an index of approximately 90 in early 2020 to an index of approximately 110 by September 2022. A factor that may account for the higher TOT is the stronger global demand for commodities such as natural gas and iron ore over this time. This raised the average prices received for Australian exports over this period given that iron ore and natural gas are major commodity exports for Australia, which in turn increased export prices relative to import prices, causing an increase in the TOT..

Identification of a relevant factor

A solid explanation of how the factor caused the TOT to increase since 2020

Analysis (Sample 2 full marks)

While both sample answers use the statistics from the chart when describing the trend, Sample 2 is the only response that can achieve full marks for this part of the question because the student has accurately read the question and described the upward movement in the TOT since 2020. A key skill in U3 AOS 3 of the Study Design is the requirement for students to 'explain and interpret trends and patterns in economic data and other information' and this type of error is common in examinations. With respect to the second part of the question, Sample 1 has once again made the mistake of misreading the question, with the student referring to the 'effects' of a declining TOT, when a 'cause' was required. Despite valid economic arguments in Sample 1, it cannot achieve marks because it does not address the requirements of the question. Again, this is another example of a common error made by students – explaining 'effects' when 'causes' are required and vice versa. Sample 2 correctly identifies a factor (stronger global growth for commodities) and adequately explains why this caused the TOT to increase over the relevant time period.

4. Outline how an increase in international competitiveness can reduce the current account deficit and improve living standards. 5 marks

An accurate definition of IC

Focuses accurately on the CA impact by referencing the key components of the CA

Sample 1 An increase in international competitiveness means that Australian businesses are better able to compete in global markets as a result of lower prices or higher quality goods and services. This can reduce the CAD because lower priced exports (or better quality exports) will tend to raise the demand for net exports (by increasing exports and reducing imports), which increases the surplus on the Balance on Goods and Services (BOGS). Given that the BOGS is a major sub-account within the current account, a higher surplus in the BOGS will help to decrease the size of the CAD. Given that an increase in competitiveness will have a favourable impact on net exports (X – M), it will boost AD given that net exports is a component of AD. These higher levels of AD will stimulate economic growth and help to increase real GDP (or real income) per capita, which is one measure of material living standards, indicating that Australians, on average, will be able to purchase more goods and services than before.

An accurate explanation of how IC can improve living standards

Demonstrating an understanding of living standards

A less accurate definition of IC (focuses on a cause of an increase in IC)

Incorrect focus on the negative (short run) impact that might stem from raising protection instead of a focus on the benefits of higher IC

Sample 2: International competitiveness can be increased via the removal of forms of protection, such as tariffs and creation of free trade agreements with other countries, such as the CHAFTA signed by Australia and China. It causes the CAD to increase because cheaper imports will be allowed to enter into Australia, which leads to an increase in debits relative to credits in the Balance on Merchandise Trade (BOMT) and the Balance on Goods and Services (BOGS). As the BOMT and BOGS move further away from surplus and more into deficit, this will serve to increase the Current Account Balance. A larger CAD will eventually cause the Trade Weighted Index (TWI) to fall, which in turn will increase Australian living standards because Australian goods and services will become more competitive on international markets. Export demand is likely to rise as foreigners will find it is cheaper to purchase Australian goods and services and import demand is likely to fall as Australian consumers will substitute out of imports and into the relatively cheaper Australian import competing goods and services. This will cause an increase in (X-M), raising AD and real GDP, which should eventually cause material living standards to increases as measured by real GDP per person.

The response veers off course by focusing on the beneficial impact of a falling exchange rate

Accurate account of the beneficial impact of a falling exchange rate but student needed to move beyond the short run and either convince the assessors that a lower TWI would persist in the face of TL and then examine the impact on living standards in this context OR explain why the freer movement of goods and services around the globe can enhance Australian living standards in some other way

Analysis (Sample 1 full marks)

Sample 1 is likely to achieve full marks because it addresses the requirements of the question. First, it accurately demonstrates an understanding of international competitiveness , unlike Sample 2, which focuses on an example of how international competitiveness could improve (i.e. reducing protection and entering into FTAs). Crucially, however, Sample 1 focuses on how international competitiveness can 'reduce' the CAD and provides a sound explanation for how this occurs. In contrast, Sample 2 makes no attempt to highlight how international competitiveness could reduce the CAD. Instead, it only focuses on the possible short run impact stemming from a reduction in protection (e.g. reducing tariffs). Finally, Sample 1 accurately links international competitiveness to better living standards while Sample 2 makes the mistake of linking a lower exchange rate (or lower TWI) to higher living standards. Despite the analysis within this part of Sample 2's response being sound, it cannot achieve full marks because it is linking the wrong factor (exchange rate) to living standards.

5. Explain the relationship between the current account deficit (CAD) and net foreign debt (NFD) 5 marks

Demonstrating an understanding of the CAD but no attempt to do the same for NFD

Explaining how a higher CAD impacts on the NFD but no attempt to explain how a change in NFD is likely to impact on the CAD

Sample 1

The current account is made up of the balance on merchandise trade, net services, net primary incomes and net secondary incomes. The BOMT and net services will sometimes be in surplus in Australia, but the overall current account is usually in deficit in Australia due to the large deficit within the net primary income section. An increase in the CAD is likely to cause an increase in NFD because the CAD is effectively caused by a national savings and investment imbalance, which requires foreign savings to finance the shortfall. These foreign savings will usually enter Australia in the form of debt, such as the purchase of Australian company or government bonds by foreigners, which ultimately leads to an increase in NFD.

Demonstrating a thorough understanding of the CAD and NFD

Effective 'signposting' of the response: letting the assessor know precisely that the relationship will be explored in both directions

Sample 2

The CAD represents the negative (deficit) balance in the current account of Australia's balance of payments, which is made up of four sub-sections: The balance on merchandise trade, net services, net primary incomes and net secondary incomes. All of the transactions that flow through the current account (as either credits/inflows or debits/outflows) will be recorded in one of these four accounts and the combined total represents the balance in the current account over any period, which for Australia is negative (i.e. deficit). NFD represents the stock or value of net debt obligations to foreigners, with the total amount owed to foreigners far outweighing the amount owed by foreigners to Australians. Any increase in the CAD is likely to cause an increase in NFD and any increase in NFD is likely to cause a further increase in the CAD. This occurs because the CAD reflects national spending exceeding national income, which requires foreign financing, either in the form of debt or equity. Accordingly, a higher CAD will usually result in a higher level of NFD. For example, if the CAD is $50B for 2017, it means that $50B must enter the country to effectively finance the CAD, much of which will be in the form of debt, therefore increasing NFD. Once NFD increases, however, its servicing over time (through the payment of interest in the net primary income section of the current account) will further increase the CAD. For example, an increase in NFD of $50B will mean that $5B in net terms will move through as a debit in the NPI section of the CA, which adds to the CAD for that period. Australia's CAD is primarily due to the large stockpile of NFD which creates huge interest payments to foreigners that are recorded as debits in the Net Primary Income section of the current account.

Explaining how a higher CAD impacts on the NFD and use of relevant example

Explaining how a higher NFD impacts on the CAD and use of relevant example

Analysis (Sample 2 full marks)

Sample 2 is the superior response deserving of full marks because it demonstrates a sound understanding of the key variables within the question (CAD and NFD) before explaining the relationship between the CAD and NFD in **BOTH** directions, which is what would be expected for a 5 mark question like this one. Importantly, this ability to adequately explain the relationship in both directions was crucial. While the detail provided in the early part of the question (on the make-up of the current account) was technically not required for full marks, it adds significant value to the quality of the response and helps to convince the assessor that the student has a sound understanding of Australia's balance of payments (or Unit 3 AOS 3 more generally). Similarly, the accurate and relevant use of examples also serves to increase the quality of the response. In contrast, Sample 1 only attempts to explain the relationship in one direction, which typically prevents the student from achieving full marks. [The response provided is a better answer to a question like: 'Explain how a higher CAD might impact on NFD'.] The quality of the explanation within Sample 1 is otherwise sound and sophisticated.

6. Explain how a fall in the terms of trade is likely to affect the goal of strong and sustainable economic growth, and Australia's living standards. 4 marks

Student demonstrates an understanding of the TOT

A lower TOT does not necessarily mean that the demand for X is low (e.g. it may simply occur because of a higher global supply of commodities). A more accurate link to AD is therefore required.

Sample 1

The term of trade is the ratio of average export prices and average import prices. When the TOT falls, it means the demand for our export is low and therefore reducing our AD and real Gross Domestic products (GDP) growth. As our current GDP growth is 1.4%, our goal of strong and sustainable economic growth of 3-3.5% is unlikely to be achieved. The low AD will result in low employment rates and therefore reducing the ability of households to access to goods and services, reducing material living standards.

An attempt is made to demonstrate an understanding of the SSEG goal but there is over-reliance on the rate of growth (3.5%) and little attention to the relevance of the 'strong' and 'sustainable' parts of the goal.

Insufficient depth when linking low AD to living standards

Student demonstrates an understanding of the TOT

Meaningful link between the lower TOT and AD

Excellent link between the lower TOT and material living standards

Sample 2

A lower terms of trade (TOT) implies that the prices received for exports has decreased relative to the prices paid for imports, leading to a reduction in the value of net exports because exporters will be receiving less for any given volume of exports. As net export values decrease, the national income will decrease, reducing dividends and factor incomes paid to households, thus reducing disposable income. As disposable income is lowered, household access to goods and services is reduced, which means that material living standards have worsened. Additionally, a decrease in net exports will reduce AD, disincentivising firms from producing a large output, as opportunities for profit are reduced. Investment and output decreases across the business sector, leading to a lower rate of growth in real GDP and making it more difficult to achieve the desired strong rate of economic growth (of approximately 3%) that is needed to support employment. In addition, the decline in Investment by exporting firms can have a negative impact on the nation's productive capacity (e.g. reduced investment in plant and capacity) and make it more difficult to sustain stronger growth into the future.

Further link to AD as well as real GDP and excellent link to the goal of SSEG

Analysis (Sample 2 full marks)

Sample 2 is the superior response deserving of full marks because it demonstrates a sound understanding of the key variables in the question (TOT, SSEG and LS) and it makes a solid connection between the TOT and SSEG as well as the TOT and LS. While it could have been more efficient by linking the effect on AD (covered in the third line) with real GDP and SSEG before covering the effect on LS, this did not impact negatively on the overall quality of the response. In contrast, it was evident that the student writing Sample 1 was not clear on exactly how a lower TOT leads to lower AD and economic growth (which is quite common as students ignore the effects on 'incomes' received by exporters or the fall in national income which negatively impacts on Investment, Consumption and AD). Further, Sample 1 rushes the link to LS, making no attempt to explore the impact on incomes (e.g. household income).

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206/1 Queens Rd
Melbourne Vic 3001
TEL: (03) 9866 2289
Fax: (03) 9005 2717
Email: cpap@commpap.com
ABN: 19 619 387 012

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