THE CPAP STUDY GUIDE TO VCE ECONOMICS

PART 1 Unit 3

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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, most recently teaching VCE and IB Economics at Geelong Grammar School. Romeo has held positions of responsibility with the Victorian Curriculum and Assessment Authority (VCAA) as an assessor of final examinations and he was Economics editor of the VCTA website (ComNET) between 2001 and 2008. He is also the founder of the website www.economicstutor.com.au, has contributed to various publications, and regularly presents to Economics teachers and students on behalf of the VCTA and CPAP. Romeo is also the co-author of 'Economic Fundamentals in Australia', 'Economics from the ground up' and 'Monumental Humanities 3' He has also developed the popular smartphone App (Economics Tutor) containing 1,000+ multiple choice and short answer questions.

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The Unit 3 Study Design

Australia's economic prosperity

The Australian economy is constantly evolving. The main instrument for allocating resources is the market but the Australian Government also plays a significant role in this regard. In this unit students investigate the role of the market in allocating resources and examine the factors that are likely to affect the price and quantity traded for a range of goods and services. They develop an understanding of the key measures of efficiency and how market systems can 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.

In this unit students develop an understanding of the macroeconomy. They investigate the factors that influence the level of aggregate demand and aggregate supply in the economy and use models and theories to explain how changes in these variables might influence the achievement of the Australian Government's domestic macroeconomic goals and affect living standards.

Australia's economic prosperity depends, in part, on strong economic relationships with its major trading partners. Students investigate the importance of international economic relationships in terms of their influence on Australia's living standards. They analyse how international transactions are recorded, predict how economic events might affect the value of the exchange rate and evaluate the effect of trade liberalisation.

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 answering the key economic questions of what and how much to produce, how to produce and for whom to produce. They consider the effect of decisions made by consumers and businesses on what goods and services are produced, the quantities in which they are produced, to whom they are distributed and the way they are produced. Students investigate some of the key factors that influence the level of demand and supply in the economy and how these might lead to changing prices and the movement of land, labour and capital to those areas of production that generate the most value for society.

Students use models to make predictions and to consider the role of markets in achieving economic efficiency. Using a case study from the past two years they discuss instances where the market fails to allocate resources efficiently and whether government intervention leads to a more efficient allocation of resources in terms of maximising society's wellbeing.

Outcome 1
On completion of this unit the student should be able to explain how markets operate to allocate resources, and discuss the effect of government intervention on market outcomes.

The Key knowledge includes:

1. relative scarcity: needs, wants, resources and opportunity cost
2. the nature of, and conditions for, a perfectly competitive market
3. the law of demand and the demand curve including movements along, and shifts of, the demand curve
4. factors likely to affect demand and the position of the demand curve: changes in disposable income, the prices of substitutes and complements, preferences and tastes, interest rates, changes in population and consumer confidence
5. the law of supply and the supply curve including movements along, and shifts of, the supply curve
6. factors likely to affect supply and the position of the supply curve: changes in the cost of production, technological change, productivity growth and climatic conditions
7. the effects of changes in supply and demand on equilibrium prices and quantity traded
8. the role of relative prices in markets on the allocation of resources and the effect on living standards
9. the meaning and significance of price elasticity of demand and supply
10. factors affecting price elasticity of demand: degree of necessity, availability of substitutes, proportion of income and time
11. factors affecting price elasticity of supply: spare capacity, production period and durability of goods
12. the meaning and significance of economic efficiency: allocative efficiency, productive efficiency, dynamic efficiency and inter-temporal efficiency
13. the effect of competitive markets on the efficiency of resource allocation
14. reasons for market failure: public goods, externalities, asymmetric information and common access resources
15. the role and effect of indirect taxation, subsidies, government regulations and government advertising as forms of government intervention in the market to address market failure
16. one contemporary example of government intervention in markets that unintentionally leads to a decrease in the efficiency of resource allocation.

Area of Study 2
Domestic macroeconomic goals

In this area of study students investigate the Australian Government's domestic macroeconomic goals of low inflation, strong and sustainable economic growth and full employment and why these goals are pursued. They consider the role of key economic agents using a simple circular flow model of the macroeconomy. Students examine how each of the goals is measured and the potential consequences associated with the non-achievement of each goal. They identify and analyse contemporary aggregate demand and aggregate supply factors that may influence the achievement of domestic macroeconomic goals in the past two years, and consider how achievement of the goals may affect material and non-material living standards.

Outcome 2
On completion of this unit the student should be able to analyse key contemporary factors that may have influenced the Australian Government's domestic macroeconomic goals over the past two years and discuss how achievement of these goals may affect living standards.

The Key knowledge includes:

The nature and purpose of economic activity

1. the difference between material and non-material living standards
2. factors that may influence living standards including access to goods and services, environmental quality, physical and mental health, life expectancy, crime rates and literacy rates
3. the circular flow model of income including the role of households, businesses, government, financial institutions and the external sector in an open contemporary macroeconomy
4. the nature and causes of the business cycle
5. the meaning and importance of aggregate demand and the factors that may influence the level of aggregate demand in the economy: changes in the general level of prices, disposable income, interest rates, consumer confidence, business confidence, the exchange rate and rates of economic growth overseas
6. the aggregate demand curve
7. the meaning and importance of aggregate supply and the factors that may influence the level of aggregate supply in the economy: changes in the general level of prices, quantity and quality of the factors of production, cost of production, technological change, productivity growth, exchange rates and climatic conditions
8. the aggregate supply curve
9. the effects of changes in aggregate demand and aggregate supply on the level of economic growth, employment and price levels.

The Australian Government's domestic macroeconomic goals

1. the meaning of the goal of low inflation (price stability)
2. measurement of the inflation rate using the Consumer Price Index (CPI) including the difference between the headline and underlying (core) rate of inflation
3. causes of inflation including demand and cost inflation
4. consequences of a high inflation rate: erosion of purchasing power, redistributive effects, resource misallocation, savings and investment and international competitiveness
5. the meaning of the goal of strong and sustainable economic growth
6. measurement of the rate of economic growth using real Gross Domestic Product (GDP)
7. the reasons for pursuing strong and sustainable economic growth including lowering of the unemployment rate, growth in real income and increased ability of government to provide essential services
8. the meaning of the goal of full employment and classifications within the labour force: employed, unemployed, hidden unemployment, disguised or under-employed
9. measurement of the labour force including the participation rate, the unemployment rate and the labour force underutilisation rate
10. types and causes of unemployment: cyclical, structural, frictional, seasonal and hard-core unemployment
11. the consequences of unemployment including loss of GDP, loss of tax revenue, reductions in living standards and greater income inequality
12. aggregate demand and aggregate supply factors that have influenced inflation, economic growth, the unemployment rate and living standards in the past two years.

Area of Study 3

Australia and the world economy

Australia is an open economy. There has been a gradual reduction in trade barriers with trade making an increasingly greater contribution to Australia's living standards. Students examine the reasons why countries engage in international transactions such as the exchange of goods and services and the movement of savings and investment capital, and evaluate how these transactions might affect living standards. They investigate how international transactions are recorded and the relationships between different sections of the balance of payments. Students apply their knowledge of demand and supply models to explain movements in the exchange rate, and discuss the effects of changing currency values on the achievement of the Australian Government's domestic macroeconomic goals.

Outcome 3

On completion of this unit the student should be able to explain the factors that may influence Australia's international transactions and evaluate how international transactions and trade liberalisation may influence the current account balance, the Australian Government's domestic macroeconomic goals and living standards in Australia.

The Key knowledge includes:

- the relationship between trade and living standards including lower prices for consumers, greater choice for consumers, the ability of businesses to achieve economies of scale and access to more resources for business and government
- the balance of payments and its components
- causes of Australia's current account deficit including cyclical and structural factors
- the relationship between the current account and the capital and financial account
- the composition and cause of net foreign debt and net foreign equities
- the terms of trade: meaning and measurement and the factors that may influence the terms of trade
- the effect of movements in the terms of trade on the current account balance, the domestic macroeconomic goals and living standards
- factors affecting the value of the exchange rate including relative interest rates, demand for exports and imports, capital flows, the terms of trade and relative rates of inflation
- the effect of exchange rate movements on the current account balance, the domestic macroeconomic goals and living standards
- factors that may influence Australia's international competitiveness including productivity, production costs, availability of natural resources, exchange rates and relative rates of inflation, and the effect of these factors on domestic macroeconomic goals and living standards
- the effect of trade liberalisation on Australia's international competitiveness, domestic macroeconomic goals and living standards.

Chapter 1 [Unit 3 AOS 1]
An introduction to microeconomics: the market system, resource allocation and government intervention

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.

What is economics?

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]

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. Gina Rinehart, 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: In the 2011 examination, Q4 (a) 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.

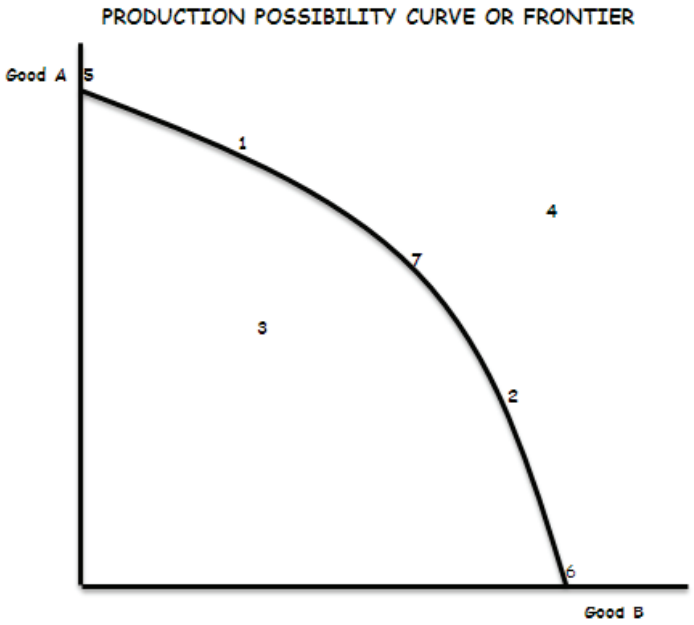
Exam Tip: Do not be confused about the role of money. It is not a resource in itself and you should not argue that money is one of our scarce resources.

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. For example, the Victorian government has substantial (but limited) funds at its disposal to use for society's benefit. If it chooses to spend $4b on constructing a water de-salination, it foregoes or sacrifices the opportunity to use that same $4b for investment in health, education, transport 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.

The Production Possibility Curve (PPC)

This is also referred to as the Production Possibility Frontier (PPF). 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
- inter-temporal 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 PPC 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 'inter-temporal 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'.

The basic economic questions

Given that we have relative scarcity it 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.

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?

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)?

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 market mechanism and "Perfect Markets": An introduction to microeconomics and the role of markets.

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 forms the basis for demand and supply analysis is called "**perfect competition**". There is no market in the world that is '*perfectly competitive*'. Economists devised the concept of a perfectly competitive market as a tool or "model" to enable predictions to be made about how resources are likely to move around in an economy.

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 maximize satisfaction (utility) and sellers seek to maximize profit
- Resources (e.g. labour) are perfectly mobile.

The nature of a perfectly competitive market would be 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, or the lowest possible prices. 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. Businesses will be producing the goods and services that consumers want and at the lowest possible prices. Agricultural markets are likely to be the ones most closely approximating perfectly competitive markets.

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 profits in the current VCE Economics course 2017-2021.

Exam Tip: In both the 2016 and 2020 examinations, students were asked to outline (2016) / explain (2020) the characteristics/conditions of a perfectly competitive market. In the event that a similar question surfaces on the 2021 exam, students need to pay attention to the 'instructional verb' ('task word') used in the question. Many students typically make the mistake of 'listing' or 'identifying' two characteristics/conditions when the task words outline or explain are more demanding than 'List' or 'Identify'. In relation to the 2020 examination, students were also asked to make reference to the 'nature' of a perfectly competitive market. The highest scoring responses will have been those who linked the conditions to a relevant feature of the market. For example, noting that product homogeneity, freedom of entry/exit and an abundance of sellers ensures that no individual business has price making power and that prices are kept at the lowest possible levels.

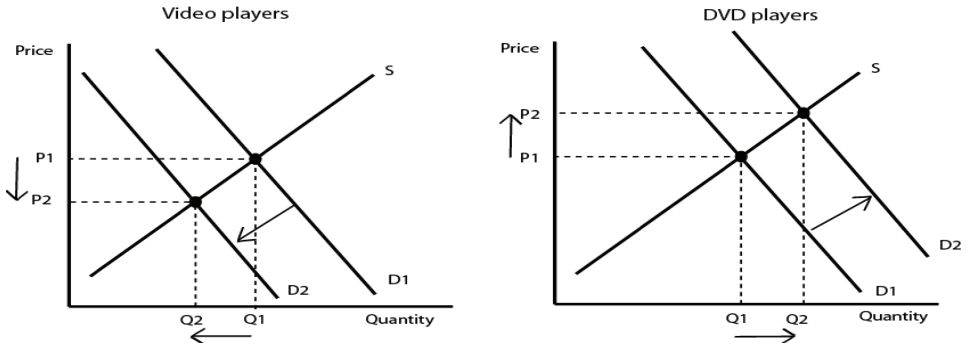
Exam Tip: The key skills listed in the Study Design requires students to be able to 'evaluate the role of the market in allocating resources', and 'explain the effect of government intervention in markets'. In addition, the key knowledge points indicate the need for students to demonstrate an understanding of 'one contemporary example of government intervention in markets that unintentionally leads to a decrease in the efficiency of resource allocation'. 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. We will consider these issues after first examining how markets allocate resources via the price mechanism.

Exam Tip: 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.

The market or price mechanism and relative prices

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 (consumer sovereignty) 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 DVDs replacing videos (or, blue-ray replacing DVDs). In the market, we would have observed the following:

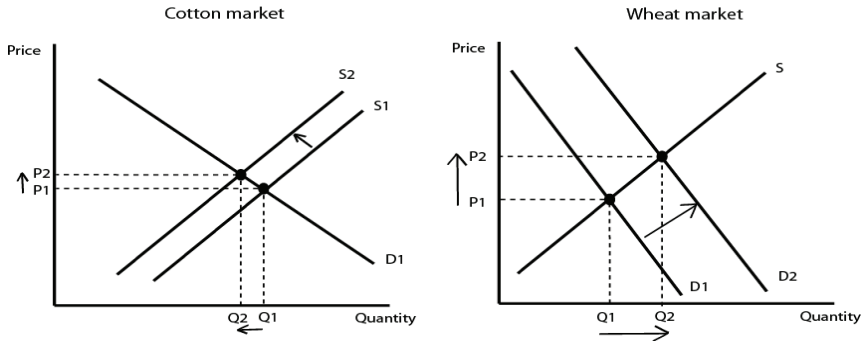


The changing conditions in this market (the invention and demand for DVD players) caused a change in the relative prices of goods and services. The price of video players will fall relative to the price of DVD players because fewer consumers are demanding video players and instead demanding DVD players. This is reflected in the demand curve for video players shifting from D1 to D2 and the demand for DVD players shifting from D1 to D2. Suppliers will then devote fewer resources (e.g. labour and capital) to the production of the video 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 DVD players as the demand and price has increased. This is reflected in an expansion along the supply curve for DVD players 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!!

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 videos and DVDs. 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.

More recent examples relate to the change in relative prices over 2020 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 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 new 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.

REVIEW/APPLICATION QUESTIONS 1 - Introduction

1. ***Outline two different ways of explaining the problem of relative scarcity.***
2. ***Distinguish capital resources from labour resources and provide three examples of each.***
3. ***Draw a rough 'production possibility curve' for 'Defence goods' and 'Environmental goods' and answer the following:***
   - ***describe how movements along the PPF can highlight the concept of opportunity cost.***
   - ***show points of technical/ productive efficiency on the PPF.***
   - ***use the PPC to distinguish allocative efficiency from technical efficiency.***
   - ***highlight how two points on the PPF can represent dynamic efficiency.***
   - ***use the PPC to distinguish allocative efficiency from dynamic efficiency.***
   - ***show a point where unemployment exists on your diagram.***
4. ***Outline the basic questions that every economy confronts.***
5. ***What is the main instrument used for answering these basic questions?***
6. ***Discuss four key characteristics of perfectly competitive markets.***
7. ***Explain why in a perfectly competitive market producers are only able to make "normal profits". Define the price or market mechanism.***
8. ***Describe how resources are likely to be reallocated following the negative publicity received by 'solariums' due to their links to skin cancer. In your answer, refer to the role of relative prices.***
9. ***Explain how the price mechanism can solve a shortage of mining workers during a mining boom.***
10. ***Explain how the use of crops in fuel production (e.g. ethanol) has contributed to higher global food prices.***
11. ***Explain how the government can use the price mechanism to achieve allocative or inter-temporal efficiency.***

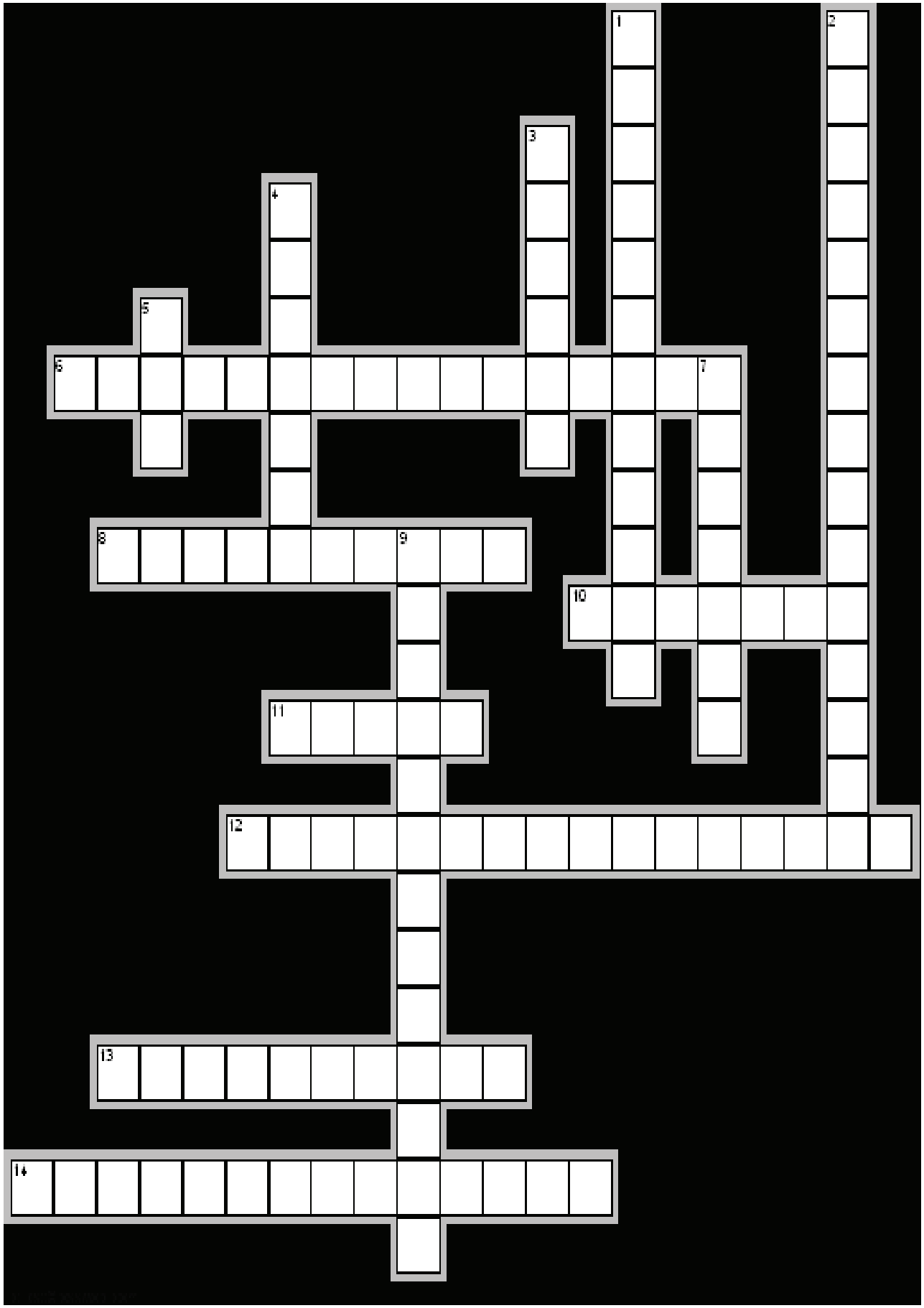
Quick revision crossword No 1: Introduction to economics

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 inter-temporal 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.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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).

What is Demand?

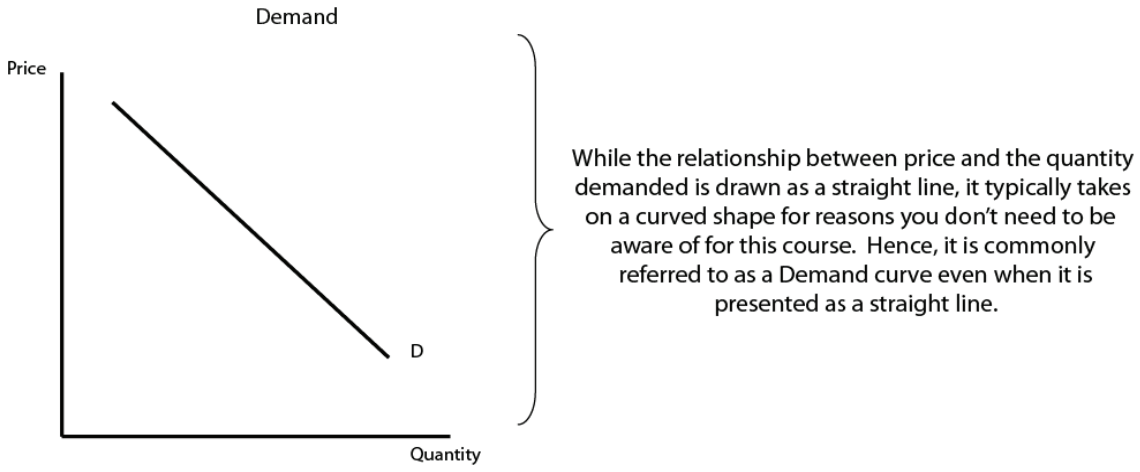
Demand is the willingness of consumer(s) to purchase a good or service for a price. That is the demand curve shows the quantity consumers are willing to buy at each specific price. The quantity demanded will typically vary for different price levels, with an inverse relationship between the price of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

The law of demand provides that:

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

This relationship gives us the Demand curve below, where a fall in price causes demand for the product to increase for two main reasons:

- First, existing consumers of the product are likely to buy more of the product (this won't always apply, but will in many instances), which is commonly referred to as the **income effect;** and
- New consumers are now encouraged to buy the product at the lower price, which is commonly referred to as the **substitution effect**.



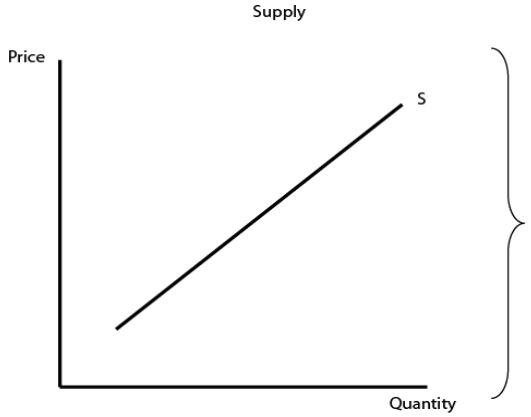
What is Supply?

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. 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 provides that:

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

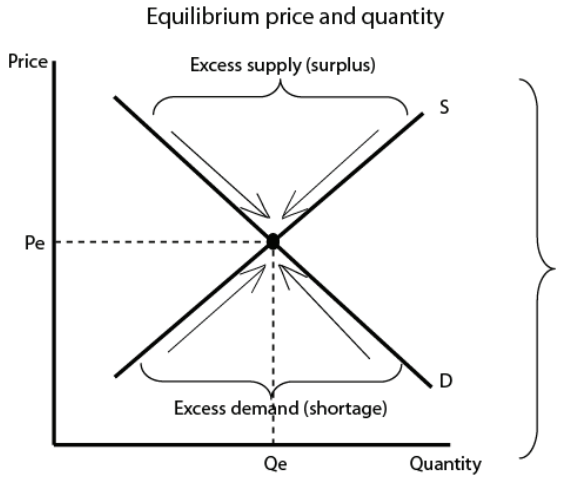
This relationship gives us the supply curve below.



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.

Equilibrium price and quantity

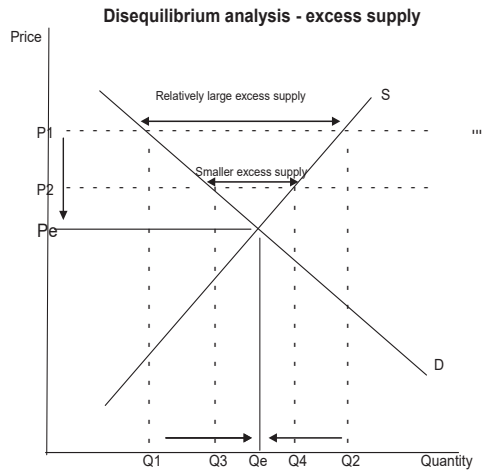
In every market, the forces of demand and supply will determine both prices of the product and the quantity that is likely to be supplied for a given time period. Price and quantity will tend to move towards their 'equilibrium levels'.



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.

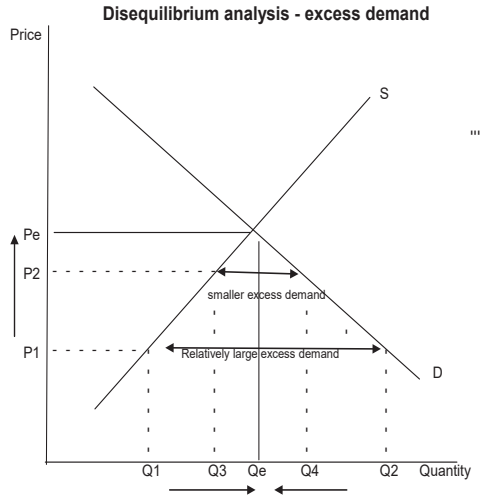
If the price in a market is not at its equilibrium level, then it is not in a state of rest and the price will converge towards its **Pe** level. The amount of time this takes will depend on a number of factors, in particular the market in question. For example, the price of grapes at the Queen Victoria 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'.



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.

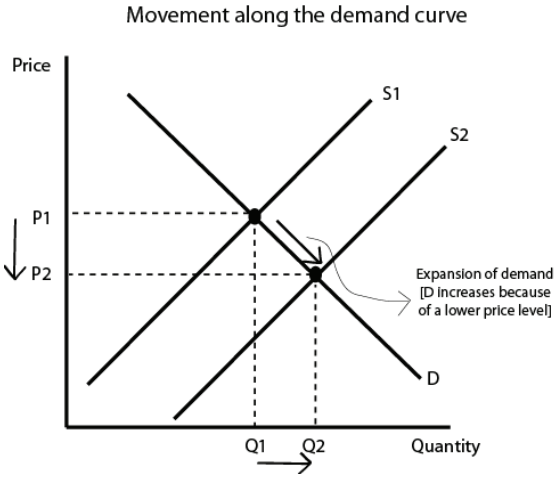


With price set at P1, the supplier is producing Q1 whilst consumers are demanding Q2. It becomes apparent to the supplier that this price is too low because supplies are depleted relatively quickly and production is not keeping up with demand for the product. Excess demand (or shortage) is represented 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 follows:



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).

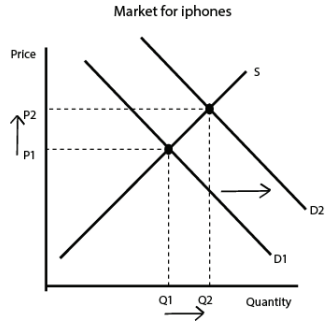
In this case, there has been an increase in demand along the demand curve (sometimes referred to as an expansion of demand). Clearly, price is not the only factor that will influence the demand for a product. Demand can increase or decrease for reasons that are unrelated to the price of the product. 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'.

- *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.

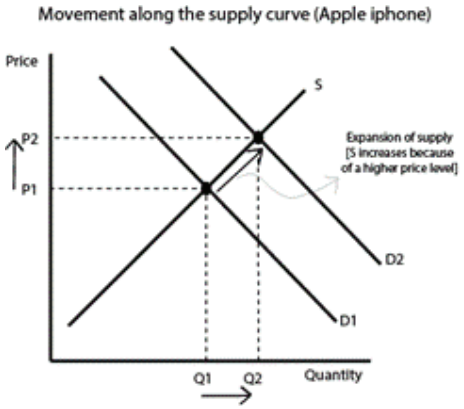
The shift to the right of the demand curve for Apple iphones has now resulted in a movement (expansion) along the supply curve. Hence, both demand and supply have increased from Q1 to Q2.

Exam Tip: 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)! Many students made this mistake in the 2013 examination (Q3), undermining the quality of their responses by adding that 'the higher demand (for coffee) caused the price to rise, which is consistent with the law of demand'.

Exam Tip: In the 2013 examination (Q3), students also struggled 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 D 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).

Shifts of the supply curve and movements along 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 Ipods.



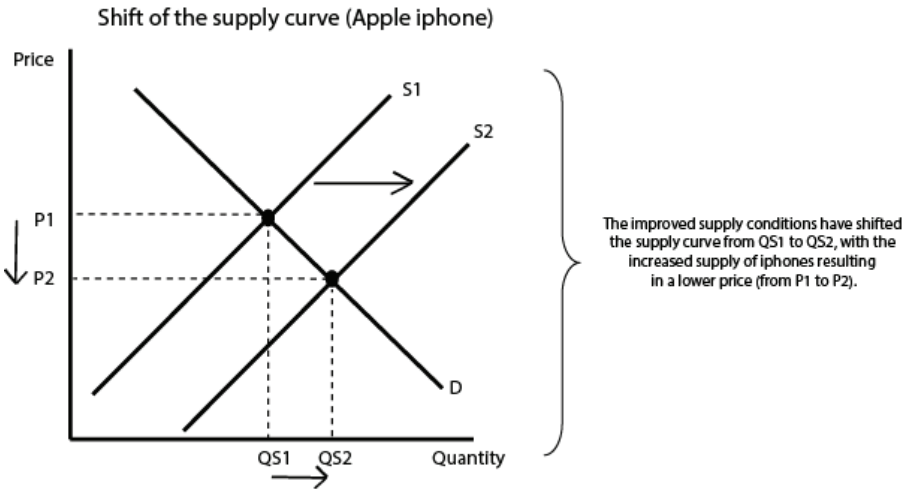
In the D/S diagram to the right, supply has definitely increased from QS1 to QS2. However, THERE HAS NOT BEEN A SHIFT OF THE SUPPLY CURVE – there has been a movement along the curve (an expansion) that is driven by the higher price.

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.

For example, in the market for mobile phones, 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 price of factors of production, such as lower **labour costs** or a reduction in costs of **capital equipment**;*
- *Lower **costs of raw materials** (e.g. due to greater availability);*
- *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*
- 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. Note that the first three dot points above are lumped together in the Study Design and referred to collectively as 'prices of the factors of production.'



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 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: *price*, *demand* and *supply* would have been costly.

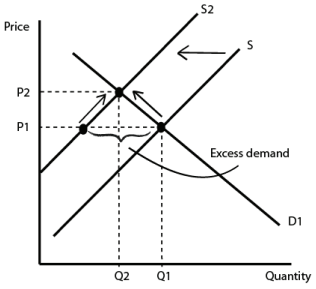
Exam Tip: Like before, don't get confused about the relationship between price and quantity supplied. A price decrease will be associated with higher supply levels if the increase in supply is what came first (i.e. a shift to the right of the supply curve). However, a price increase will be associated 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. 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

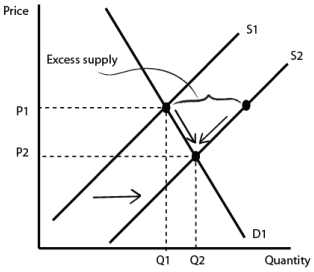
So far, we have examined shifts of both the demand and supply curves (which represent changes in demand and supply conditions in markets) and how these changes influence the prices of various goods and services. When these changes occur, a market moves from a position of equilibrium to disequilibrium, 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]



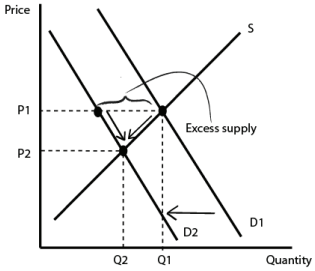
Market in equilibrium at P1, Q1
Disequilibrium caused by a decrease in supply (S1 to S2)
Excess demand is created at existing price of P1
Price is forced up to P2
Equilibrium restored at a higher P2 and lower Q2

Higher supply
[supply shifts to the right]



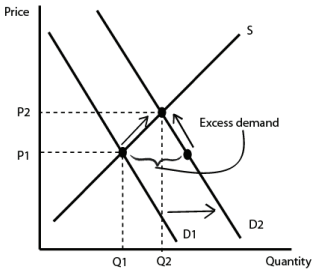
Market in equilibrium at P1, Q1
Disequilibrium caused by an increase in supply (S1 to S2)
Excess supply is created at existing price of P1
Price is forced down to P2
Equilibrium restored at a lower P2 and higher Q2

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.

The role of relative prices in achieving an efficient allocation of resources that maximizes 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 individual's access to goods and services (either bought or provided by governments or other providers). GDP per capita (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 will be their material living standard.

Our living standards however are influenced by more than just how much we are able to "consume" and increasingly economists are aware of the influence that "**non-material**" factors can have on our quality of life. For instance the amount of crime and social unrest can influence our quality of life. The amount of pollution in terms of air quality, water quality and noise can significantly impact on your living standards. 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.

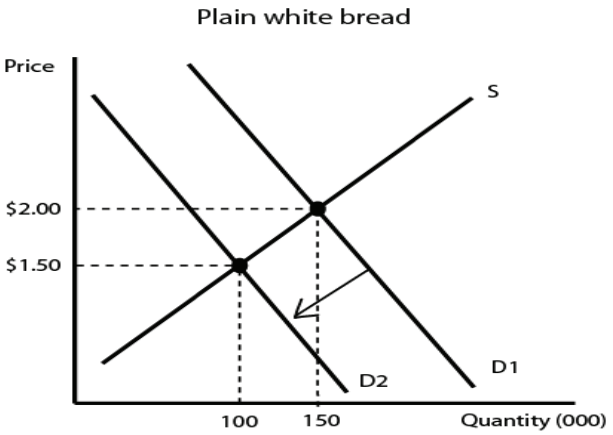
Increasingly mental health is becoming recognized as an issue impacting our living standards and it is commonly believed that worthwhile employment provides a sense of purpose and value that tends to increase individuals wellbeing. To some extent, a trade-off does exist between "work and play", and ideally,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

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/used to maximise producer 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 they will make less profit and quickly (particularly in a perfectly competitive market, with perfect information and mobility of resources) reallocate resources to areas of greater demand and hence greater profit.

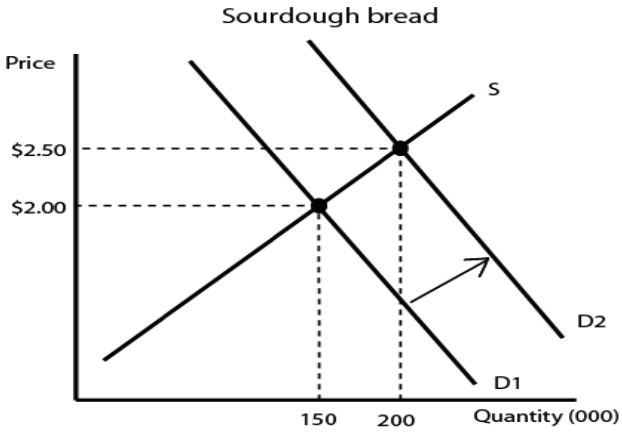
Price changes then act to clear markets and ensure that as our desires and preferences change (consumer sovereignty), producers are incentivized to alter their own behavior. If markets are not producing what consumers wish to buy, then resources are not being used in a way that maximises living standards. [However, as will be discussed later, consumers do not always desire what is in the "interests of society", which at times requires government intervention. Common examples include smoking, illicit drugs and carbon dioxide emissions.]

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. In buying a bike the opportunity cost is four skateboards and in buying a skateboard the opportunity cost is one quarter of a bike (or 25% of the cost of a bike). An increase in demand for a good or service will, via the price mechanism, lead to a higher price for that good or service. In order to produce more of the item in demand producers will need to allocate/dedicate more resources to its production. Given that resources are "scarce," in order to make it worthwhile for producers to change how they use resources, producers need to be incentivized via higher profits. As the price of a product rises due to higher demand, the relative price of that product compared to alternatives rises (and the relative price of alternative products falls). This increases the relative profit that can be made and hence resources flow into the production of the good or service more in demand.

For example, 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 during 2020. The ability of markets to quickly re-allocate resources to the production of much needed products (dynamic efficiency) such as hand sanitisers, face masks and personal protective equipment helped to achieve allocative efficiency. The increased production (and consumption) of these products enhanced living standards above that which would have otherwise occurred during the Covid -19 pandemic.

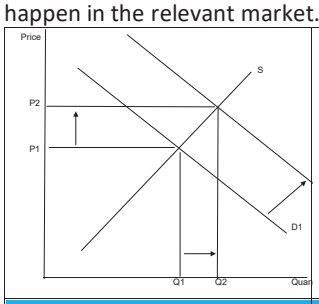
Exam Tip: In the 2020 examination, students were required to 'explain how an increase in demand for a product might result in a change in relative prices, and explain how this would influence resource allocation and living standards', the reference to living standards in the final part of the question 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.

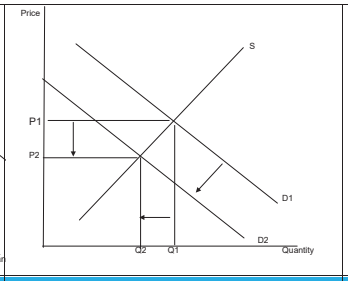
Markets are dynamic, with demand and supply factors changing frequently. A change in the cost of production will alter the profit being made by producers and hence the relative profit (the profit of one output compared to an alternative output) and the quantity producers wish to make. This in turn will lead to more resources being allocated towards the more profitable output and away from the relatively lower priced/ less profitable output. Hence the price mechanism will answer the question of "**what to produce**" and also ensure that it is produced in the least cost method (**how to produce**) so that profits can be maximized.

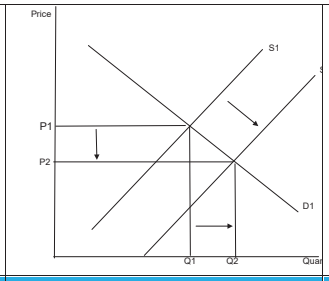
The "**for whom to produce**" will be decided by consumers' willingness to pay which in turn influences where resources will be allocated. As such the price mechanism will adjust to changes in demand and supply, to alter the relative price and relative profit so that resources do flow towards the production 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.

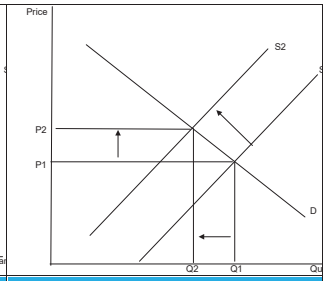
DEMAND AND SUPPLY QUICK QUIZ

For each of the following situations (1- 40), choose one of the responses (A - D) that ***most*** accurately reflects what is likely to happen in the relevant market.









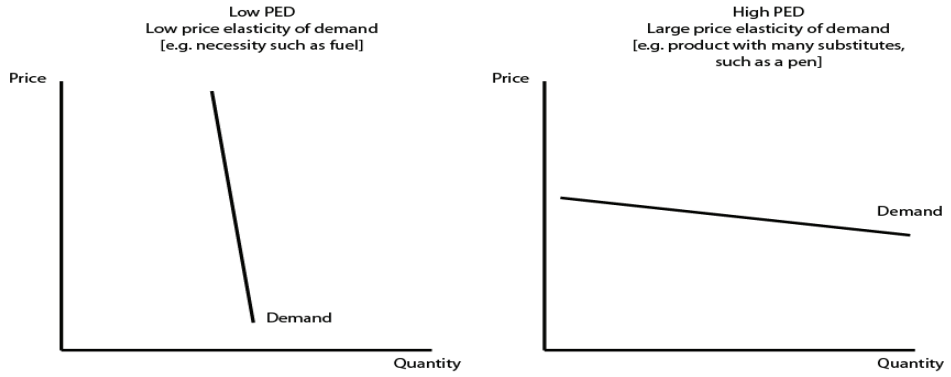
A	B	C	D
1	2	3	4
Water tanks: the government removes a $500 rebate to those who purchase and install water tanks	**Volkswagen cars:** VW are caught manipulating emissions data from some of their vehicles to boost "green" credentials.	**Cigarettes:** the government increases excise tax on tobacco by an additional 12.5% in 2018	**Butter:** the price of margarine falls
5	6	7	8
Tourism: Attacks on Indians in Melbourne is headline news around the globe	**Taxis:** there is a shortage of traditional taxi drivers following the legalisation of Uber Taxi's in Victoria	**Electricians in eastern Australia:** the reconstruction following the early 2020 bushfires	**Luxury cars:** the government increases the luxury car tax
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 in late 2015
13	14	15	16
Solar rebate: the Victorian state govt introduces a $2,250 rebate/subsidy for homes utilising solar	**I-tunes music:** More and more consumers are using Spotify and Pandora	**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	**Air fares:** a new airline operates on Australian routes (e.g. Scoot airways)	**Bananas:** A cyclone wipes out banana plantations in eastern Australia	**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	**Gold:** Several companies set up operations to find gold following the growth in gold prices
25	26	27	28
Milk: Coles and Woolworths engage in heated price war	**Digital televisions:** the government cuts off the analogue signal	**Free range eggs:** Consumers discover 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:** temples 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**
Crude oil: a rise in USA oil exploration and discoveries over 2014-15 via a relatively new technology known as 'fracking'	**I-tunes 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 rebate on solar panels.	**Toyota motor cars:** Toyota recalls several motor vehicles due to faulty accelerators and Toyota publically 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

Answers on page 139

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.



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;

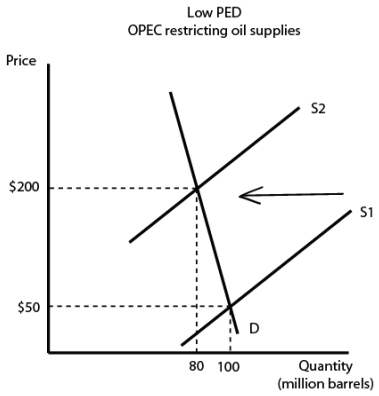
Exam Tip: The 2017 Study Design only requires a knowledge of the underlined factors above. However, a knowledge of additional factors might prove to be useful in the examination.'

Exam Tip: Remember that these factors can be responsible for causing both a shift of the demand curve as well as a change in the PED

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.

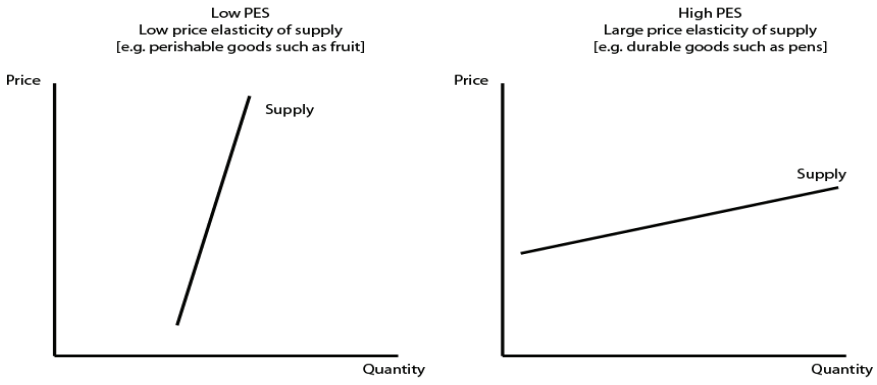
A product is said to have a high price elasticity of demand if the % change in price causes a larger % change in quantity demanded (for example a 10% increase in price that leads to a 30% fall in demand). A product is said to have a low price elasticity if the % change in price causes a smaller % change 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 2dii of the 2015 exam required students to outline the 'significance of the PED for petrol upon household budgets' following the fall in petrol prices over 2015. While it was easy for students to demonstrate an understanding of PED, it was much more challenging to make the necessary link to household budgets. Importantly, students needed to outline that a low PED for petrol means that households will be better off in financial terms because their relatively fixed demand for petrol (due to it being a necessity for many households) will now cost less money and represent a smaller proportion of their household budget.

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.



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 1(d) of the 2014 exam asked students to 'outline one factor that influences the PES for a product'. If a similar question surfaces in the current examination, students should remember that it is not enough to outline 'the factor' without demonstrating knowledge of how this factor influences the PES. [This would also apply to a question relating to how a factor that influences the PED.] For example, a student is unlikely to receive full marks with a response such as: 'the time it takes to produce a product (i.e. the production period) is a factor influencing the PES'. The student should expand by saying that '….a longer production period will mean that it takes longer for the producer to respond to price signals and the PES will be lower'.

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. ***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.***
11. ***Distinguish material living standards from non-material living standards.***
12. ***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***
13. ***Define the terms price elasticity of demand (PED) and price elasticity of supply (PES).***
14. ***Describe one factor that could reduce the PED for solar panel .***
15. ***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.***
16. ***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.***
17. ***Discuss how the PES for algae based fuels is likely to change if production time accelerates and the synthetic petrol can be easily stored.***
18. ***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.***
19. ***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.***

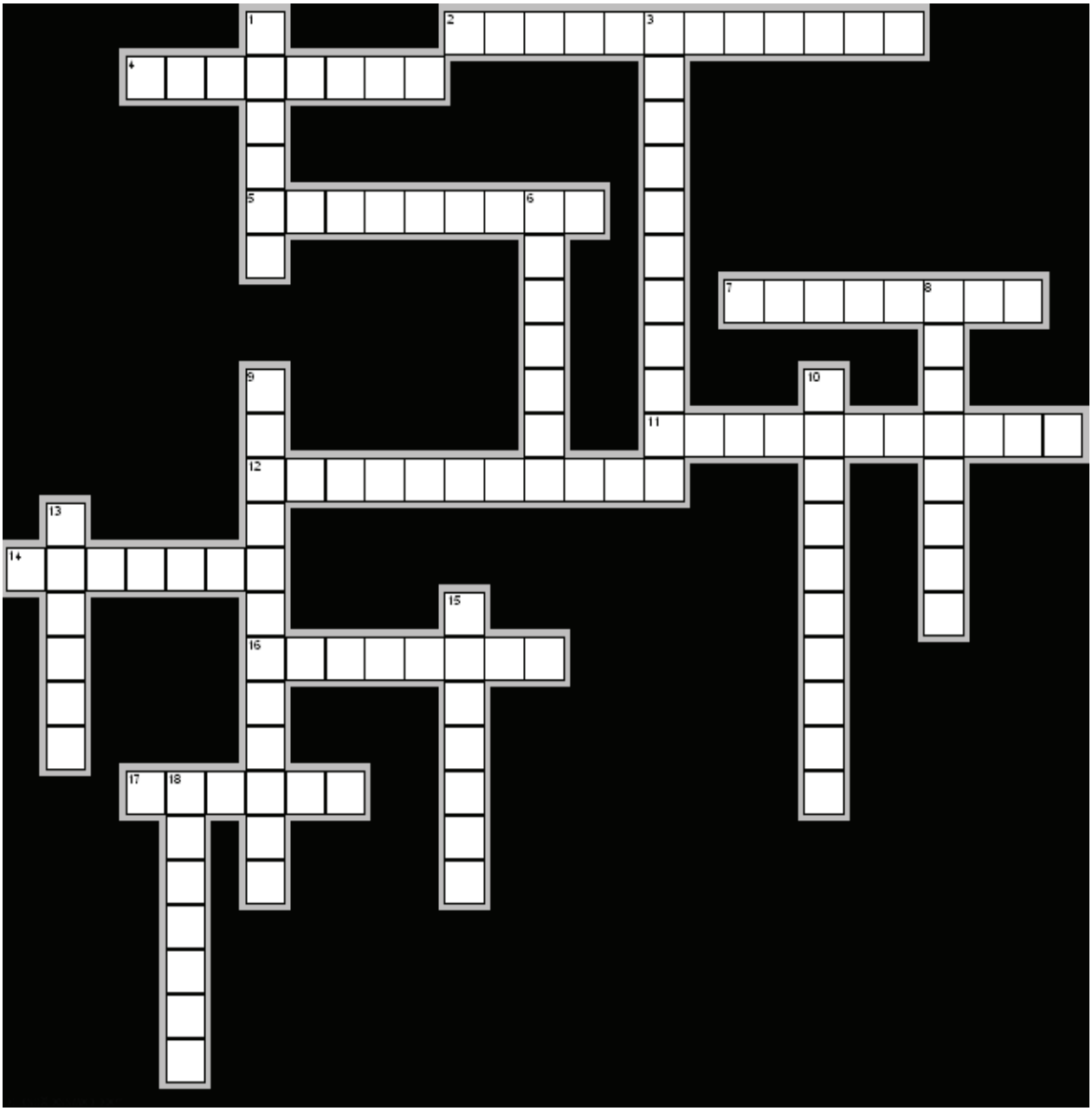
Quick revision crossword No 2
The market or price mechanism

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



Competitive markets, government intervention and economic efficiency

The next topic will hinge around the following key skills:

- Evaluate the role of the market in allocating resources
- Explain the effect of government intervention in markets and
- Compare alternative economic viewpoints to form conclusions.

And will require an understanding of:

- The meaning and significance of economic efficiency
- The effect of competitive markets on the efficiency of resource allocation.
- Market failure and government intervention to prevent this failure and
- A recent example of government intervention unintentionally decreasing the efficiency of resource allocation.

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 and consumer sovereignty 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 (guns, illicit drugs, tobacco, excessive alcohol consumption, "dirty" production methods) and governments will frequently intervene in markets to prevent an inefficient allocation of resources, typically referred to as "**market failure**".

Features of a competitive market

Earlier, we discussed the characteristics of perfectly competitive markets and listed the following conditions or assumptions for perfect competition to exist:

- 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 maximize satisfaction (utility) and sellers seek to maximize profit
- Resources (e.g. labour) are perfectly mobile.

As the number of suppliers/producers falls a market will become more "concentrated" and the reduced competition will potentially enable producers to manipulate the price or quantity of their output to 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 output to reduce the price elasticity of demand for their product (i.e. steepen the demand curve) via methods such as advertising, promotions, product positioning, location, etc. This helps to maintain higher price levels and maximise profits.

An **Oligopoly** occurs when a small number of firms dominate the market and have the power to manipulate price via their control of supply. The more **market power** a business has, the more control over quantity and price they will have. Firms will try to differentiate their products via advertising and marketing as well as strategies such as multi-branding and collusion with current rivals, in order to reduce the price elasticity of demand.

A **Monopoly** involves one participant controlling the market and while it can at times be the most effective way to allocate resources. For example, in the case of 'natural monopolies', where economies of scale benefits are so great that unit costs are minimised by having one producer rather that two or more producers that create inefficient duplication of functions and higher costs. Generally, however, the existence of monopolies (or a high degree of market "concentration") means that a lack of competition can reduce the need to be efficient in how resources are being used as firms become **price makers**. As such, the lack of competition within a market will impair living standards and economic efficiency as resources are used up more quickly (impeding the achievement of intertemporal efficiency), costs and prices will tend to be higher (impeding the achievement of both technical and allocative efficiency), and producers will tend to be less responsive to consumer demands (impeding the achievement of both dynamic and allocative efficiency). The different types of efficiency and the links to competitive markets are explored below.

Exam Tip: The current Economics Study Design (2017-21) no longer makes specific reference to market structures apart from perfect competition. Students should therefore not be expected to demonstrate an understanding of monopolistic competition, oligopoly or monopoly. Instead, students are required to demonstrate an understanding of 'the effect of competitive markets on the efficiency of resource allocation'. 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.

An efficient allocation of resources

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.

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.] 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.

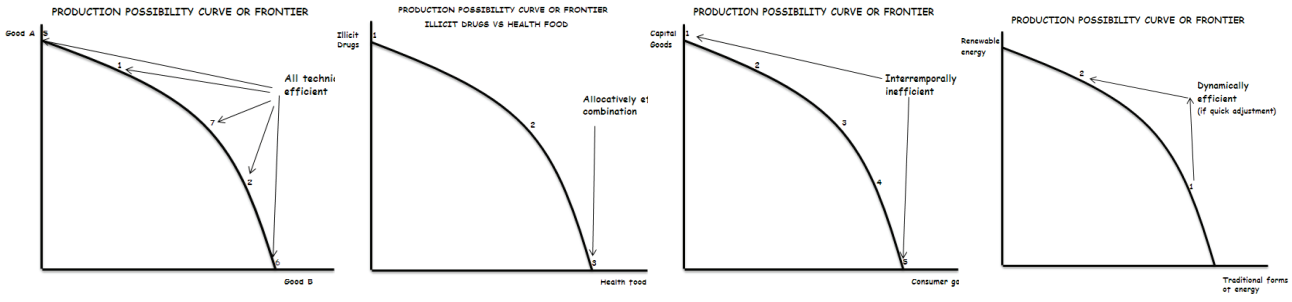
If our resources are re-allocated such that production in the economy expands, does this mean that there will be an increase in allocative efficiency?

> 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 fallen in the economy even though production has increased. This is why it is important to examine the effect on national living standards or welfare (or value to society) when seeking to determine whether an economy has achieved the most efficient use of its resources.

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 necessarily implies the maximum levels or amounts for all types of efficiency measures in an economy, including **technical (productive) efficiency**, **inter-temporal 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.

The PPC can be used to illustrate the major differences between each type of efficiency measure.



Technical or productive efficiency involves firms producing at the lowest possible long run (average) costs and will mean output from the available resources has been maximized. It is represented by the economy producing at any point along the PPC. All points along the PPC are technically efficient, regardless of what combination of goods and services are produced.

Allocative efficiency represents the best combination of goods and services produced such that living standards are maximised. If the nation's resources are allocated in the best possible way (i.e. living standards are at the highest possible level), then a change in the allocation of resources from that point would result in a deterioration of average living standards. For example, using the PPC, an economy 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.

Inter-temporal 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 inter-temporal efficiency. It can be represented by the economy not producing at either extreme on the PPC, 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 inter-temporally inefficient. The unsustainable use of a nation's resources (e.g. depleting fishing stocks) is a common example of how inter-temporal efficiency is not achieved.

Dynamic efficiency refers to how firms or industries are able to respond to changing market conditions or changes in technology. 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: When asked in a test or examination 'what is meant by an efficient allocation of resources', you should be focusing on the way the nation's resources are allocated in terms of their impact on welfare and living standards (allocative efficiency). Try to avoid a narrow focus on technical or dynamic efficiency, even though improvements in these (ceteris paribus) will improve allocative efficiency.

Exam Tip: In the 2018 examination, the first question of the paper required students to distinguish between allocative efficiency and dynamic efficiency. Students should remember that the instructional verb 'distinguish' requires them to do more than simply define the terms in isolation. For example, the better responses included those who stated that allocative efficiency relates to the types or combination of goods and services produced (e.g. a specific point on the PPC). In contrast, dynamic efficiency relates not to the types (or combination) of goods of goods and services produced, but to the speed which an economy can reallocate resources from one combination of goods and services to another (e.g. moving from one point on the PPC to another).

Competitive markets and their impact on efficiency.

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 the change in relative price and profit between alternative uses for the resources will lead to a reallocation of resources towards the more desired output (relative price will rise, increasing relative profit). Recall that **allocative efficiency** refers to producing goods and services that best satisfy the needs and wants of society as a whole. In a 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 all firms 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.

In turn since firms compete on price, due to a lack of product differentiation (homogenous products), consumers will buy from the cheapest supplier (consumers also have perfect knowledge) and firms are **price takers (**cannot set prices**)**. This means firms will need to produce using the lowest production costs. If a competitor finds a way to lower prices by reducing input costs or boosting

productivity (output from a given input) then they can increase their market share by lowering their prices and increase their total profit (quantity sold multiplied by price – cost of production). It will be in the interests of all firms therefore to produce at the lowest cost price, hence boosting **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 more 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 inter-temporal 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" (man-made resources required to produce goods and services such as machinery) which boosts or maintains our productive capacity (how much we can produce). A lack of capital investment will mean that more can 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**, that is 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, for example, 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. [See market failures and negative externalities.]

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 students are not required to demonstrate an understanding of normal/abnormal profits in the current VCE Economics course.

The relevance of market structures

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.

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' but is no longer an example of market failure in the new study

design although it will be worthwhile to discuss in the context of explaining and 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 damaging **inter-temporal efficiency.**

Accordingly, a highly concentrated market structure will tend to result in a misallocation of resources and a deterioration of average living standards of Australians as they 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).

REVIEW/APPLICATION QUESTIONS 3 – Competitive markets and efficiency

1. ***Identify three key assumptions for a perfectly competitive market to exist.***
2. ***Distinguish a price taker from a price maker.***
3. ***Define four different types of efficiency.***
4. ***Explain how competitive markets are likely to impact on allocative and dynamic efficiency.***
5. ***Explain why competitive markets are likely to be more dynamically efficient when compared to alternative market structures such as an oligopoly.***
6. ***Draw a PPC with Capital goods on the y-axis and Consumer goods on the x-axis. Describe any points on the PPC that are least likely to be inter-temporally 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.
7. ***Explain why there is a trade-off between consumption (consumer goods) and capital investment (capital goods) in machinery, factories and infrastructure.***
8. ***Discuss how competitive markets are likely to force firms to be price takers not price makers.***
9. ***Explain why competitive markets are likely to lead to higher living standards for society as a whole.***
10. ***Explain why a lack of competition is likely to lead to a misallocation of resources and lower material and non-material living standards.***

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

Across

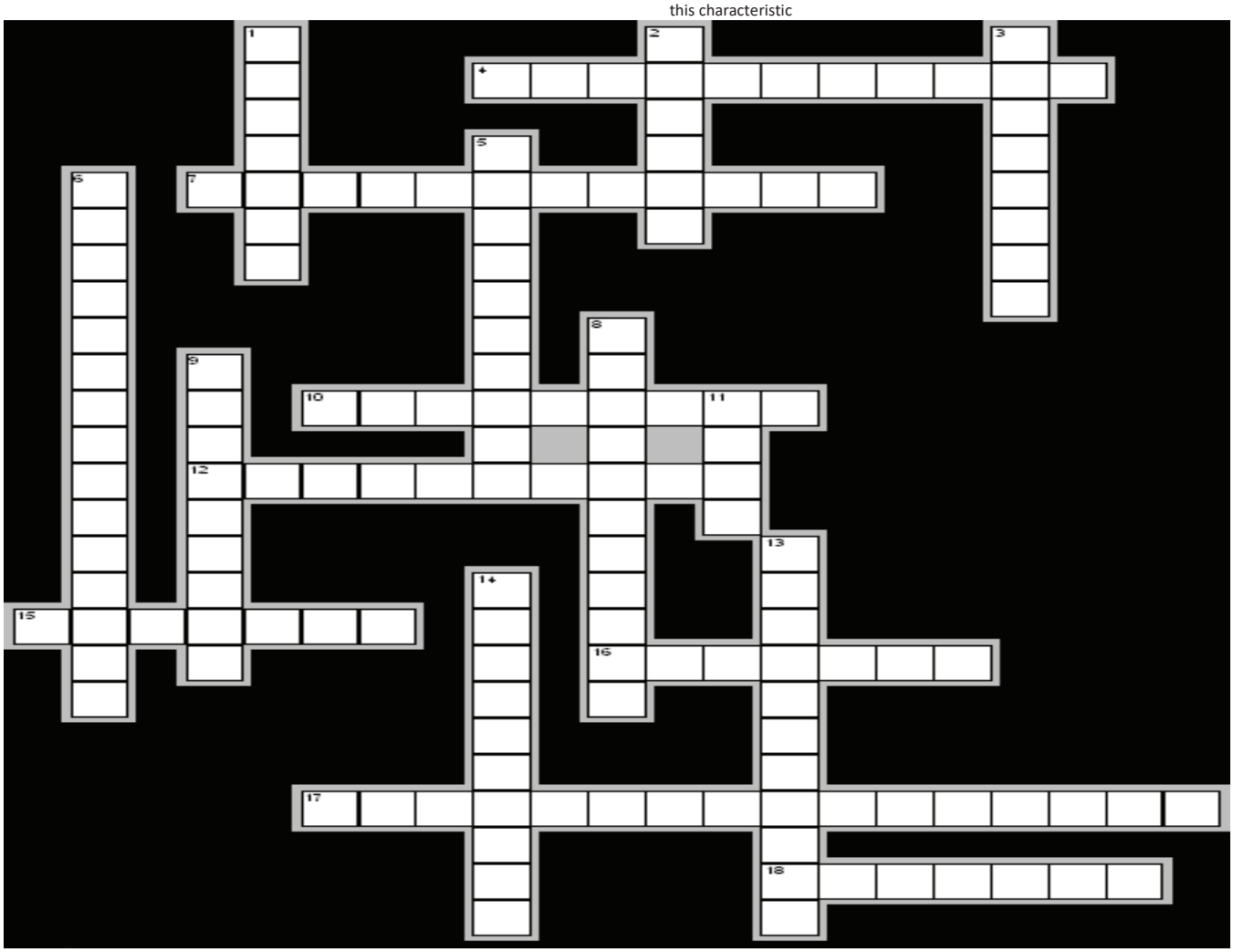
4. This is assumed to be perfect in perfectly competitive markets
7. As we move from perfect competition to monopoly, the market structure becomes more?
10. Governments in any country will primarily be influenced by these factors
12. The actions of this body include efforts to discourage the consumption 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

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 rebate for this product in 2009-10 was a good example of poor economic policy influencing business and consumer behaviour
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

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

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



Government intervention in the market – market failures

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 where the living standards or welfare of Australians is maximised.

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. Whilst 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). Secondly, it is common for students to refer to government intervention to prevent an 'over (or under) allocation of resources' without adding 'to the production of certain goods and services.' This can serve to undermine the quality of student responses.

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*.

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.

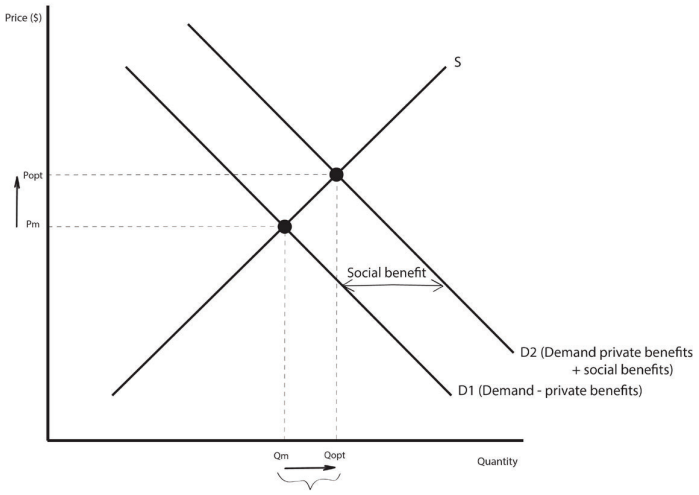
Products with positive externalities in consumption and merit goods

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.

Private and social benefits
Merit goods and goods with positive externalities in consumption

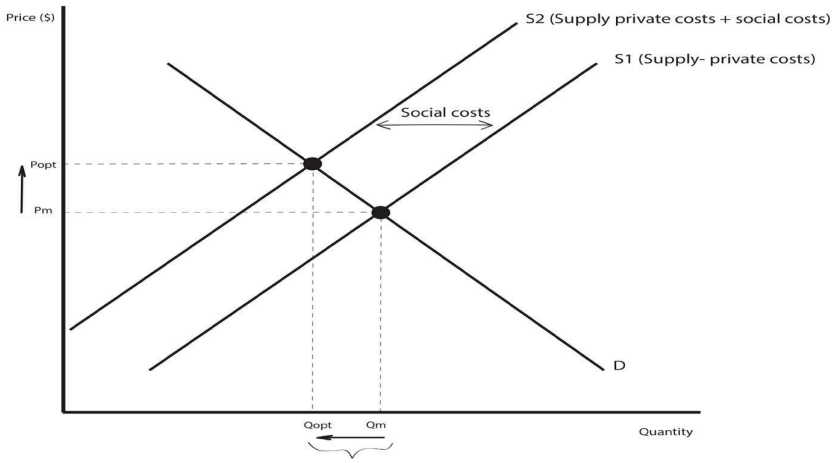


Under-production
A more socially optimal level of production occurs if production and consumption occurs at Qopt rather than Qm

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, such as 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.

Negative externalities in production



Over-production
A more socially optimal level of production occurs if production and consumption occurs at Qopt rather than Qm

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.

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 reducing our current living standards.

Exam Tip: A previous exam included a three part question, worth 6 marks, where students were students 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 clearly 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 and 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!

Externalities in consumption: these are externalities that flow purely from the consumption of a good or service. Whilst some externalities in consumption can be positive (such as education and gardening), most are negative. 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 (also 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 may prevent others from using/enjoying them (CAR are **rivalrous/depletable**).

Common access resources are prone to market failure because it is difficult to exclude people from using them because there is no price associated with use and one person's use often does prevent/exclude others from using it or reduces others capacity 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) reducing 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: Common access resources represent a great example of market failure caused by a lack of intertemporal efficiency due to the non-excludable and rivalrous nature of these resources. It means that people today benefit from relatively cheap and plentiful resources (e.g. fish) at the expense of future generations.

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 merit goods that exhibit 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 used cars (running and maintaining) and too many to new cars, wasting finite resources, causing environmental damage in their production and potentially damaging inter-temporal efficiency. This means the market fails to deliver outcomes that are in the best interests of society.

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, leading to a less efficient allocation of resources.

Recent examples of asymmetric information in action include the following:

- 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 late 2020, the Federal Court ordered **Kogan** to pay a penalty of $350,000 for making false or misleading representations about a tax time sales promotion, in breach of Australian Consumer Law. In most cases, the prices of the relevant products were increased by at least 10 per cent, before Kogan then reduced those prices soon after the promotion ended. In many cases, consumers who used the promotional code to purchase the products paid the same as, or more than, they would have paid before or after the promotion.
- 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 July 2020, the Court found that Kogan had misled consumers by advertising over a period of four days that they could use the code 'TAXTIME' to reduce prices by 10 per cent at checkout, when Kogan had increased the prices of 621 products immediately before the promotion.
- In 2019, **Coles supermarket** conceded that it misled consumers (and suppliers) by advertising that 10 cents per litre of milk purchased would be returned to dairy farmers. Following an ACCC investigation, it was discovered that some of Coles' dairy farmer suppliers did not receive the full 10 cents per litre and Coles eventually agreed to pay the relevant farmers in excess of $5m as compensation. The deception had the effect of encouraging consumers to purchase milk from Coles (believing that part of the purchase price was going to a good social cause).
- The Federal Court has ordered penalties of $900,000 against **Amaysim Energy** Pty Ltd (trading as Click Energy) for making false or misleading marketing claims about potential discounts and savings available to Victorian and Queensland consumers, in breach of the Australian Consumer Law. "Click Energy's conduct misled consumers into thinking they were getting a significant discount, when in reality these discounts were often much smaller than advertised," ACCC Commissioner Sarah Court said.

- In December 2018: 'The Federal Court ordered former **Murray Goulburn** Co-operative Managing Director Gary Helou to pay $200,000……Mr Helou admitted he was involved in the misleading representations made by Murray Goulburn. This included not informing farmers of risks known to Murray Goulburn and making unfounded assumptions that Murray Goulburn could achieve its milk powder sachet sales targets. "Murray Goulburn's misrepresentations meant farmers were not informed of the likelihood the final milk price would fall below the opening price. This was important information for farmers as it would have influenced the business decisions each farmer made," Mr Keogh said.'
- **Royal Commission into banking industry** in 2018 revealing the misconduct and blatant ripping off of consumers such as AMP charging fees for advice that was NOT delivered and the CBA charging dead people for non-existent advice.
- Rorting of the vocational education system by educational providers. The Federal Court found that training college Cornerstone Investments Aust Pty Ltd, trading as **Empower Institute (Empower),** engaged in unconscionable and misleading or deceptive conduct, and made false or misleading representations when enrolling consumers into diploma courses. Between March 2014 and October 2015, Empower enrolled more than 6,000 new students in its courses. Many of these students were vulnerable consumers and were signed up using incentives such as free laptops and cash, unaware they were incurring a significant debt. This is also an example of government failure given that the providers were motivated by subsidies offered by the government.
- In July 2017 the ACCC "instituted proceedings against **Ford Motor Company of Australia** alleging that it engaged in unconscionable and misleading or deceptive representations in its response to customers. The ACCC alleges that Ford misrepresented to customers who made complaints, that the issues with their vehicles were caused by the way the driver handled the vehicle, even though Ford was aware of systemic issues with the vehicles from at least 2013 (26 July 2017)". In April 2018 Ford Australia were fined $10m for unconscionable conduct. Would you buy a car that was potentially faulty?
- The Federal Court has ordered **Snowdale Holdings Pty Ltd** to pay penalties totalling $750,000 for making false or misleading representations that its eggs were 'free range', in proceedings brought by the Australian Competition and Consumer Commission (25 July 2017).

- Legal action against H.J. Heinz Company Australia Ltd (**Heinz**) commenced on Monday 24 July 2017, with the Australian Competition and Consumer Commission (**ACCC**) alleging the "Little Kids Shredz" range misleads the public about the nutritional content of the product (25 July 2017).

- In late 2016, the manufacturer of Nurofen pain relief tablets (Reckitt Benckiser) received the highest penalty ever recorded for misleading and deceptive conduct ($6m). The company claimed that its range of 'specific pain relief tablets' (e.g. tablets that could target 'migraine pain' or 'back pain') which were priced at a premium, contained the same ingredients as its stock standard Nurofen pain relief tablets. **The company was therefore able to mislead and deceive consumers into believing that the purchase of the higher priced product was better able to target specific pain when this was not the case.**

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 underallocation 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 so many Ford motor cars had they been aware of the problems, but rather other vehicles with fewer mechanical issues and greater reliability. 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 (would you want to buy/ own/ live in an apartment block that has used faulty fire-retardant cladding!?). 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).

Government intervention in markets to prevent market failure

Given that markets if left to operate "freely" (that is without any intervention) have a tendency to fail, governments frequently intervene to alter how resources are allocated with the intention of improving allocative efficiency within the economy. In this section we will look at specific ways that governments can intervene using indirect taxation, subsidies, government regulation and advertising to address market failure. We will also look at a contemporary example of intervention that has the unintended consequence of actually reducing efficiency of resource allocation.

Exam Tip: In the 2020 examination Students were required to use a D/S diagram to illustrate how government intervention could rectify a market failure. This was a difficult question for many students, with the choice of market failure limiting their ability to effectively use a D/S diangram. In the event that a similar question appeared on this year's exam, it is best to focus on positive and/or negative externalities as the market failure, and subsidies/indirect taxes or govt advertising as the government initiative to correct the market failure. This is because a D/S diagram can easily be used to illustrate how the initiative helps to reallocate resources. Importantly, students should avoid reference to public goods as the use of a D/S diagram is inappropriate in light of public goods having no market price. Students that chose asymmetric information and/or common access resources will have found it more difficult to achieve full marks

Indirect taxation

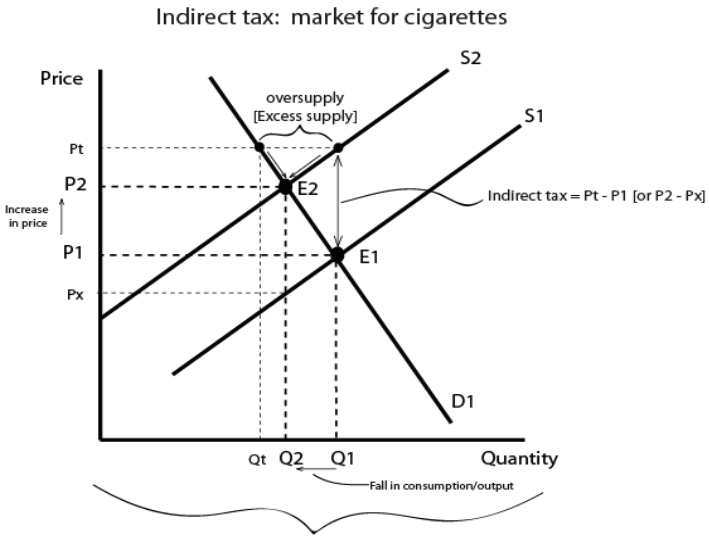
An indirect tax is a tax that is usually levied (charged) to producers/suppliers but the consumer ultimately pays the tax (indirectly) because suppliers typically pass on the added cost in the form of higher prices. The government can and does impose indirect taxes (often called excise taxes) as a means of rectifying market failure such as negative externalities associated with smoking, 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 has been raised by 12.5% this year and for the last 3 years. 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 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 "oversupply" of cigarettes (Q1-Qt). Producers will then lower their prices (resulting in less profit) and hence supply will contract along the new supply curve S2 as the price falls. Consumers will expand their demand from Qt as the price falls 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. Because 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 (see next Exam Tip).

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 (improves the budget outcome) that can be used to potentially fund **advertising** to increase consumer knowledge about the negative externalities associated with smoking such as increased health risks (and potentially pay for their health costs!) which will then shift the demand curve to the left, further reducing demand and output.



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

Exam Tip: Students might recognise that the slope of the demand curve (i.e. price elasticity of demand) ultimately determines who bears the bigger burden of the tax, producers or consumers. As the PED falls (or the demand curve steepens), the greater is the ability of producers to pass the burden onto consumers. At the extreme, a vertical demand curve will mean that the entire tax burden is passed onto consumers. However, knowledge of the respective indirect tax burdens is not required knowledge in the current VCE Study Design. It is provided here to extend inquisitive students and provide a taste of the analysis that might be expected in a first year university course.

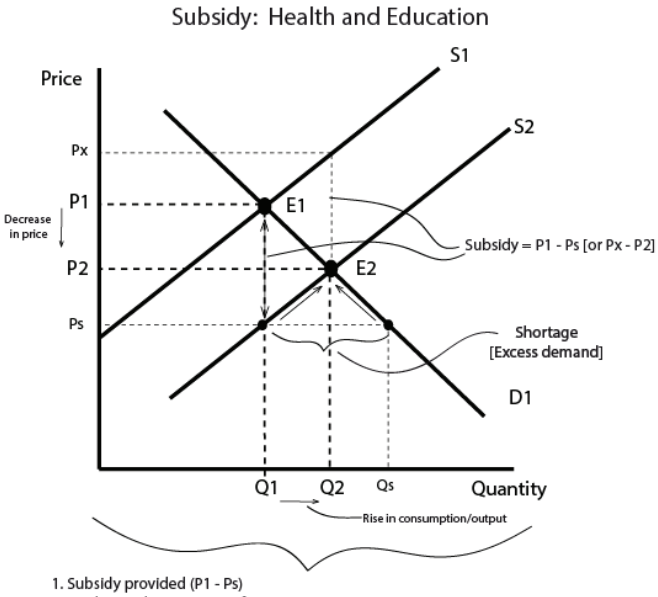
An indirect tax can therefore be used to address negative externalities by raising prices, reducing production and consumption, and diverting resources towards more socially optimal production outcomes. The **fuel excise** currently being paid by consumers and producers was originally designed to raise revenue to fund roads (due to the price inelastic nature of the demand for petrol). However, by increasing the price of fuel, it 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 forces firms and consumers (via higher prices) to ration demand for petrol, 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 consumption of a good or service. A producer subsidy has the effect of an "antitax", 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 requiring more resources to be allocated. In the case of a subsidy to a private school or hospital, the subsidy effectively increases the price 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 (and therefore a higher effective price and profit), producers will lower the price they charge consumers in order to attract more customers (see *unintended consequences* and VET FEE-HELP). As shown in the diagram to the right, this will shift the supply curve right to S2 due to each unit of sales/production receiving 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 tax subsidy will therefore help to internalise the positive externalities associated with the production and consumption of health and education. By decreasing the price of goods and services with positive externalities in production and/or consumption, subsidies can increase the production of these goods/services and therefore help to achieve a more socially optimal allocation of the nation's resources.

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 and hence changing "**tastes and preferences**" because they are more informed decision makers. Recall that a change in tastes and preferences will shift the demand curve, changing the equilibrium price and quantity and hence altering the allocation of resources to its production.

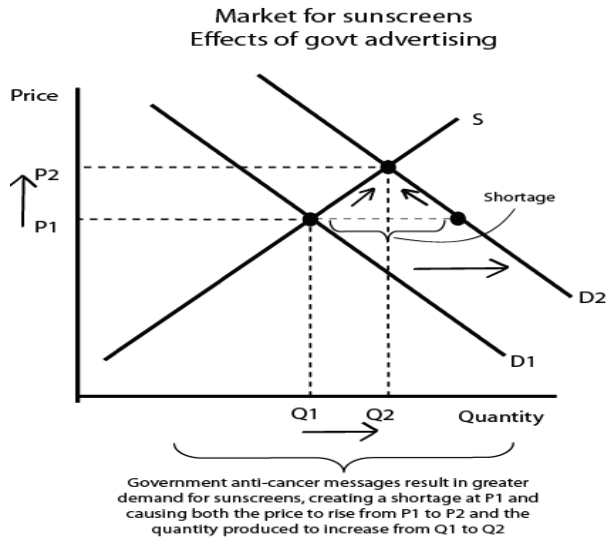
For instance, the government runs advertisements designed to ensure we use sun screen, hats and cover up to prevent skin cancer. This should increase our demand for skin protection, shifting the demand for these items to the right. This will cause an undersupply (i.e. shortage) at the original price and so in order to increase their 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.

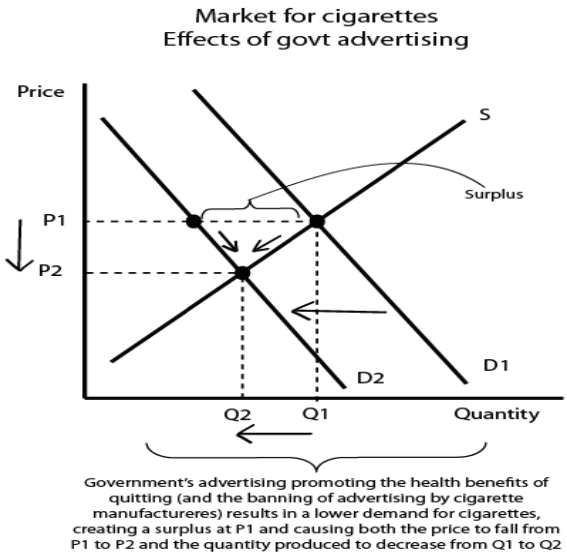
Alternatively, where there are negative externalities in consumption the government seeks to make us more aware of the long term consequences to ourselves and society from over consuming. A common example is smoking. Originally firms were allowed to actively advertise cigarettes to promote demand but as the government and society has become aware of the significant and

potentially fatal consequences of smoking the government has banned tobacco advertising by "regulation" (see next topic) 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 so producers seek to alter how they allocate their resources to increase their profits elsewhere.

The government advertising also seeks to minimize "asymmetric information". For instance it actively promotes more healthy lifestyles by promoting anti-smoking campaigns that inform consumers of the negative externalities associated with smoking and the positive externalities of giving up (healthier, more active, longer life expectancy, increased discretionary income). This has the effect of shifting demand left, once again leading to an oversupply (surplus), so producers lower prices to clear the market (demand will expand but quantity will fall overall). This reduces profits and so firms will alter how they allocate resources, potentially towards e-cigarettes which may be less harmful [note the "may", as the evidence is mixed].

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



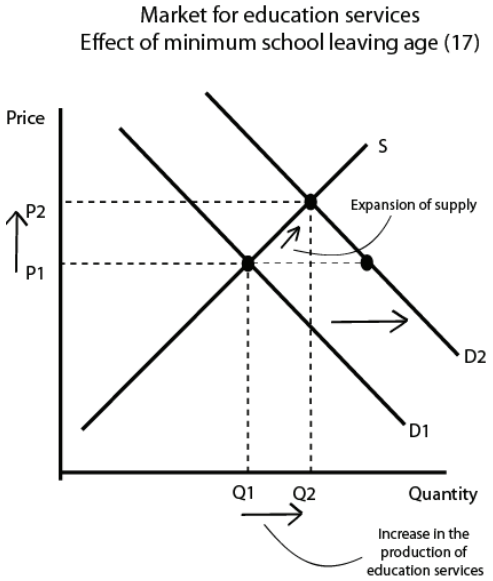


The government can also promote healthier eating and drinking and inform people about the risks of diabetes from too much sugar. These campaigns are designed once again to prevent one-sided information so that consumers (and producers) are more aware of the costs associated with "consumption". Educating the public about the risks associated with the consumption of some goods and services will help to change consumer preferences, reduce consumption and encourage producers to shift resources to the production of goods or services offering better returns. Ultimately, this causes 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 behavior.

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).

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. Over exposure to UV light can cause skin cancers.

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.

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: Q2c of the 2015 exam required students to describe one example of a government action aimed at reducing market failure and improving the efficiency of the allocation of resources. It is important for students to focus less on the 'description of the action' (e.g. the details relating to the Direct Action Plan as a means of combating climate change) and more on 'how the action works to address the market failure and improve the allocation of the resources'. 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.

Unintended consequences of government intervention that decreases the efficiency of resource allocation.

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, on balance, potentially lead to a less efficient allocation of resources that reduces overall living standards.

Governments intervene in many ways, such as indirect taxes (excise tax on fuel, alcohol and tobacco), subsidies (solar panels) and government regulations (E10 fuel/ energy markets via RET/minimum wage/ plain packaging laws) and advertising to educate (e.g. sunscreen and smoking) with the intention of improving how efficiently and effectively resources are used. However, given that there are typically 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.

Contemporary examples of government intervention and unintended consequences:

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 costs 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." (*https://melbourne-cshe.unimelb.edu.au/__data/assets/pdf_file/0006/2845779/Phillip-Toner-finaldocx.pdf)

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.

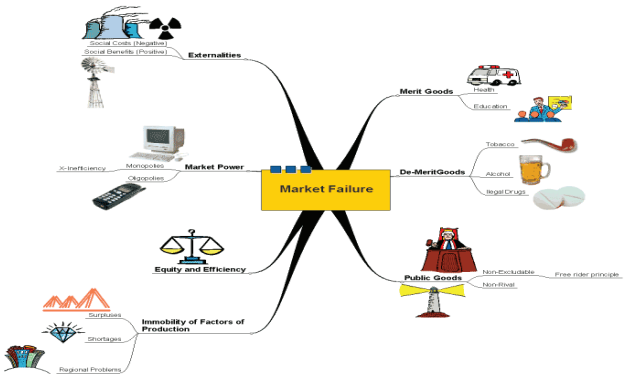
Exam Tip: An example of government intervention in markets that unintentionally leads to a less efficient allocation of resources was a new addition to the current VCE Economics Study Design. Above are a number of examples of 'government failure' that students can use when answering an examination question relating to this key knowledge point. Any examination question will provide students with choice on the example to use.

Exam Tip:.The current study design expects students to be able to explain the effect of government intervention in markets and evaluate the role of markets in allocating resources. These two skills could well be linked together into a longer question worth up to 10 marks (the 2017 exam had two 8 mark questions). For example, a question such as the following could be worth up to 10 marks…"evaluate the role of competitive markets in allocating resources in Australia and explain why governments intervene in markets to improve living standards".

Exam Tip: Question 1c of the 2017 exam required students to identify a recent example of government intervention and to explain how it unintentionally led to a decrease in the efficiency of resource allocation. This required students to identify a specific intervention and then clearly explain the nature of the unintended consequence (in terms of how it reduced the efficiency of resource allocation) by linking it to a specific type of efficiency. It is also important to ensure the intervention referred to is a "contemporary" or "current" example - which is likely to mean over the last few years.

REVIEW/APPLICATION QUESTIONS 4 – market failures and government intervention

The following mind map was downloaded from www.bized.co.uk



1. ***Define what is meant by a market failure.***
2. ***Using the mind map above, distinguish 'merit goods' from 'de-merit goods'***
3. ***List one other 'merit good' apart from health and education and outline why you consider it to be a 'merit good'.***
4. ***List one other 'de-merit good' apart from tobacco, alcohol, and illegal drugs and outline why it is considered to be a 'de-merit good'.***
5. ***With respect to 'public goods', what is meant by 'non-excludable' and non-rivalrous' (non depletable).***
6. ***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.***
7. ***Explain why 'the market' is likely to fail to provide lighthouse services.***
8. ***Explain how the government overcomes the market failure related to public goods.***
9. ***Define the term 'externalities' and distinguish 'positive' from 'negative' externalities. In your answer, refer to 'social' costs and benefits.***
10. ***Explain how the government overcomes the market failure related to the existence of negative externalities in consumption.***
11. ***Explain how the government overcomes the market failure related to the existence of negative externalities in production.***
12. ***Explain how the government overcomes the market failure related to the existence of positive externalities in consumption.***
13. ***Explain how the government overcomes the market failure related to the existence of positive externalities in production.***
14. ***Explain what is meant by 'asymmetric information.'***
15. ***Explain what a common access resource is and why they can lead to market failure.***
16. ***Distinguish between positive and negative externalities of consumption.***
17. ***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.***
18. ***Discuss why the government intervenes in the tobacco market? Ensure that you demonstrate an understanding of market failure and negative externalities.***
19. ***How does the government use indirect taxation on tobacco to improve the allocation of resources in the economy.***
20. ***Using an example of your choice explain why government intervention can lead to unintended consequences that reduce the efficiency of resource allocation.***
21. ***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].***
22. ***Using these diagrams in your explanation discuss how relative prices have changed to alter the allocation of resources.***
23. ***Discuss why deregulation of vocational educational training has created market failure.***

***24. 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.

Quick revision crossword No 4

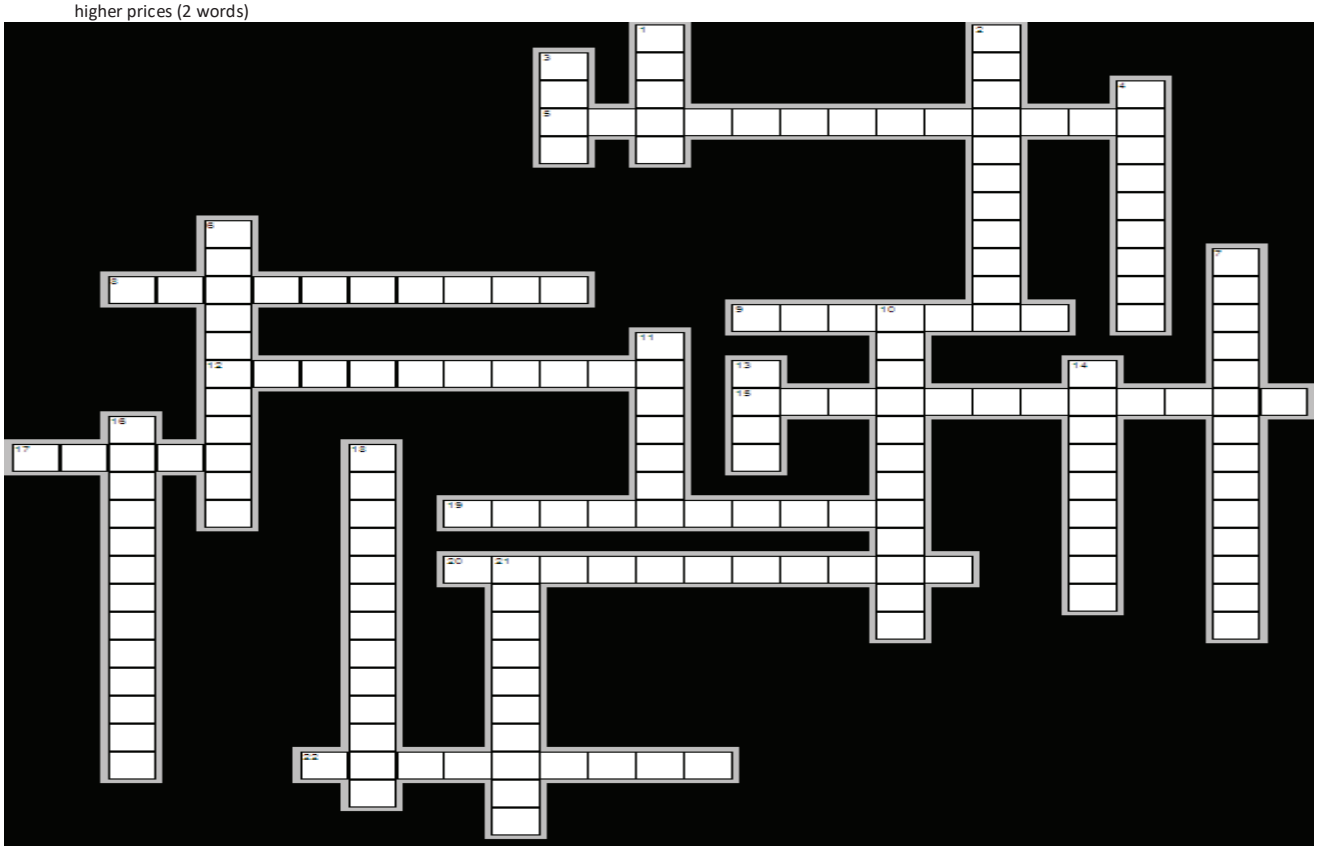
Market Failures

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

4. Luke Walsh, 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

The opportunity cost of Luke 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 in order 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) is paid more than labour resources
(b) involves financial risk taking whereas labour generally does not
(c) is rewarded with money whilst labour is not
(d) (d) is a capital resource whereas labour is a human resource

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

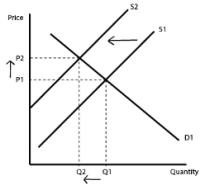
(a) The price will rise when the supply curve shifts to the right
(b) The price will rise when the demand curve shifts to the left
(c) The price will fall when the demand for orange juice increases
(d) The price will rise when the price of mandarins (a substitute) increases

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

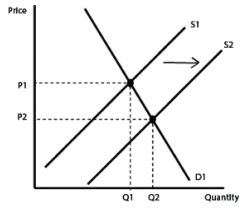
(a) price and quantity supplied are positively related
(b) price and quantity supplied are inversely related
(c) increases in supply curve are caused by a price fall
(d) supply will expand until market equilibrium is reached

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

20. Which of the following is most likely to cause the change in equilibrium as described below?

(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% price reduction 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:

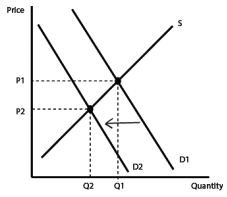
(a) close to zero
(b) greater than negative one
(c) equal to negative one
(d) relatively elastic

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

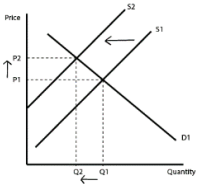
(a) decrease the demand for A
(b) increase the demand for A
(c) increase the supply of B
(d) decrease the supply of A

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

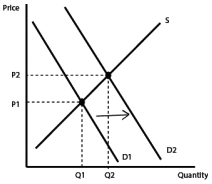
34. Which of the following would be most likely to cause a shift from S_1 to S_2?

(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 from D_1 to D_2?

(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

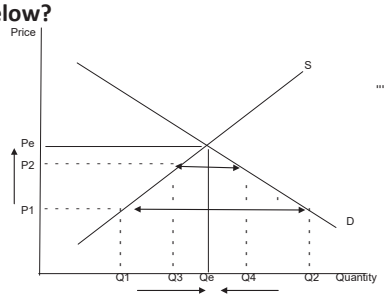
(a) Price elasticity of demand is low and the value of sales will rise
(b) Price elasticity of demand is high and the value of sales will rise
(c) Price elasticity of demand is low and the value of sales will fall
(d) Price elasticity of demand is high and the value of sales will fall

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 market below?

(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 do 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

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 Society's increased awareness of the need for recycling is an example of an economic factor influencing the decision making of

(a) consumers
(b) businesses
(c) governments
(d) all of the above

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 2014 the Federal Court was investigating claims that egg producers were engaging in cartel behavior in effort to manipulate the market price of eggs. 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

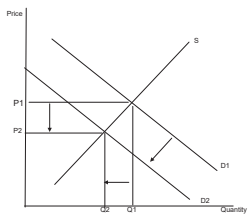
7 A business will have a monopoly in a particular market if:

(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 only one major competitor in the 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. Droughts in parts of Australia over recent years is 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 not an example of government intervention is used 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 for its product and discuss one strategy it may employ to achieve this goal. (4 marks)
(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)

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 recent 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 seek to increase competition in markets. (2 marks)

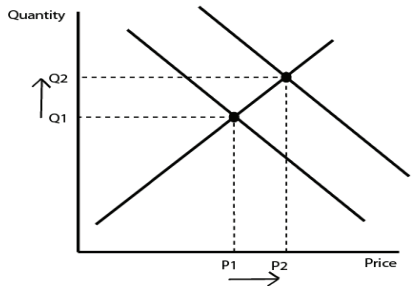
Answers and suggested responses at end of the Study Guide

YOU BE THE ASSESSOR: UNIT 3 AOS 1

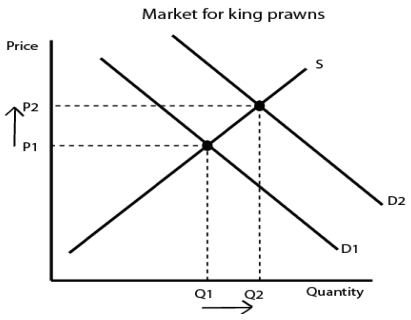
In this section, you are required to assess the responses presented for each of the questions. You should award the responses a score (either full marks or less than full marks) and justify your decision. Once complete, compare your assessment to that of the authors [provided at the rear of the Study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

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.

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 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.

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 an unregulated market in allocating resources. 5 marks

Sample 1

An unregulated 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 unregulated markets will lead to an (allocatively) inefficient allocation of resources. Markets will fail to deliver the best outcomes for society. In other words, unregulated 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 unregulated market is a market 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. Explain using an example from the last two years, 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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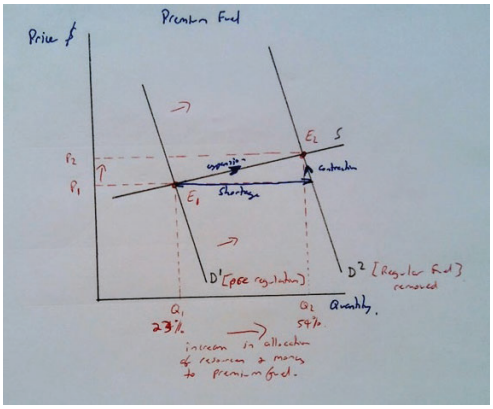
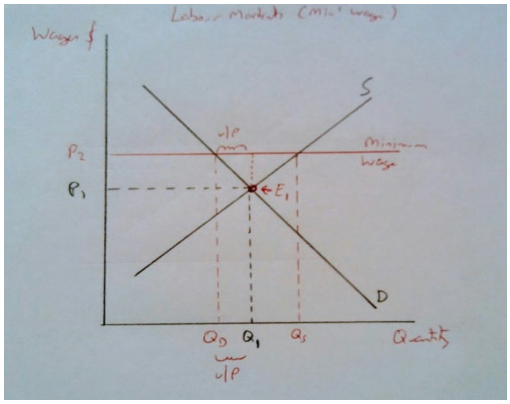
Q5b. Use a fully labelled diagram to show how the market referred to in part (a) will be affected by either the government intervention, or some other factor. **3 marks**

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 a contemporary example (ideally last 2 years) 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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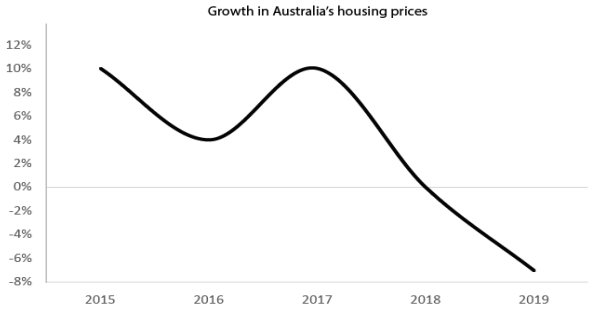
Q8. Referring to the chart, describe the trend in the growth of housing prices over the past two years. 2 marks



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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