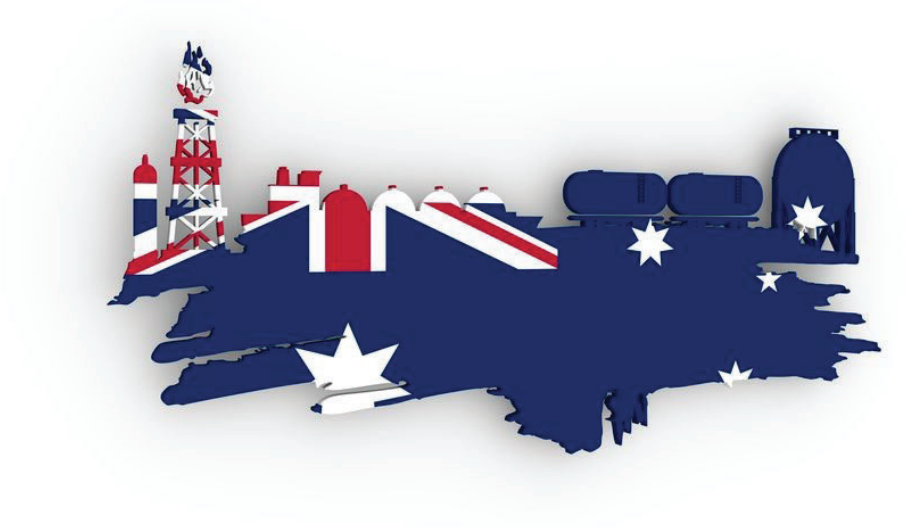
THE CPAP STUDY GUIDE TO VCE ECONOMICS



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
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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.

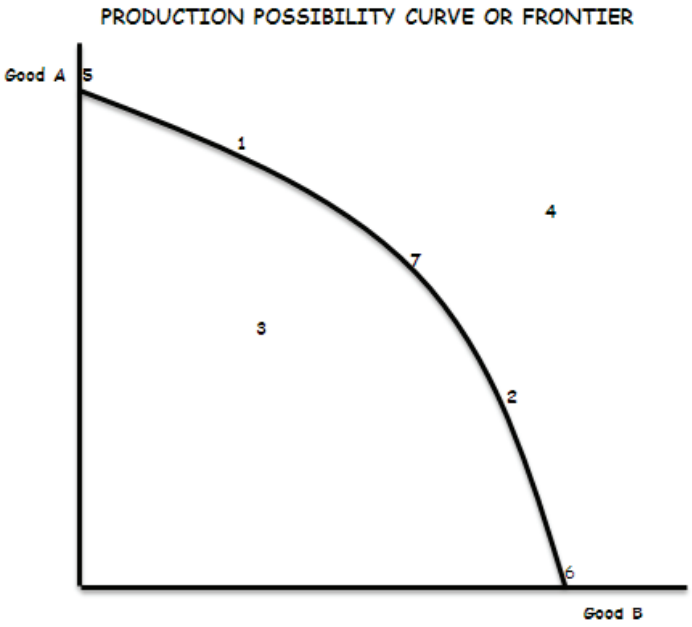
The Production Possibility Curve (PPC)

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 or 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.

A perfectly competitive market, if one existed, would generally ensure that 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: Question 2a of the 2016 exam required students to outline two characteristics of a perfectly competitive market (2 marks). In the event that a similar question surfaces on this year's exam, students need to pay attention to the 'instructional verb' ('task word') used in the question. Many students made the mistake of 'listing' two characteristics rather than 'outlining' two characteristics. The instructional verb 'outline' is a little more demanding than 'List'. The best responses were those that attempted to add some value, such as linking the characteristic to the degree of competitiveness in the market. For example, listing product homogeneity as a characteristic was insufficient. To achieve full marks, students should add something like 'product homogeneity ensures that businesses cannot charge excessive prices [e.g. a price above marginal cost] because consumers would simply purchase from rival firms'.

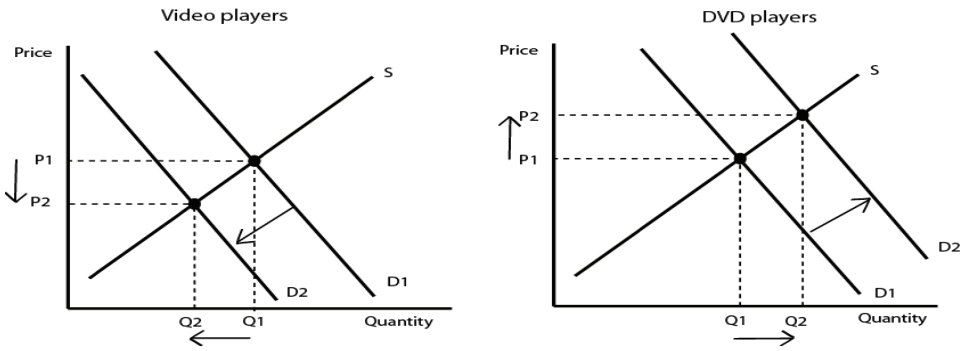
Exam Tip: The key skills listed in the new Study Design requires students to be able to 'evaluate the role of the market in allocating resources', and 'explain the effect of government intervention in markets'. In addition, the key knowledge points indicate the need for students to demonstrate an understanding 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 more recently, blue-ray replacing DVDs). In the market, we would have observed the following:

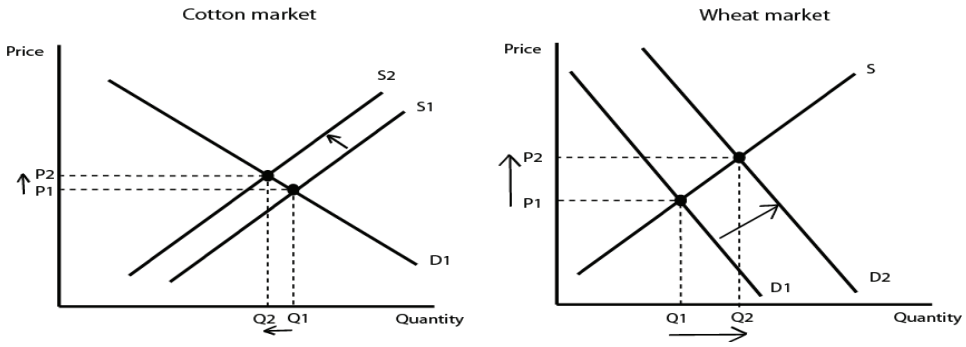


The changing conditions in this market (the invention and demand for DVD players) caused a change in the relative prices of goods and services. The price of video players will fall relative to the price of DVD players because fewer

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. Given the recent 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.

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: In the 2010 exam, the question most poorly handled (Q2a and b) required students to explain one factor that might cause a change in relative prices and then how this change in relative prices would result in a reallocation of resources. With the first part, it is important for students to select a factor that will cause a change in the demand or supply for a product (e.g. floods in Australia – see below) and then highlight how this changes relative prices (the price of one good relative to another). Too many students simply referred to changes in prices without referring to relative prices. The second part then requires student to explain how the change in relative prices results in resources moving from one activity to another, with the potential of greater profit for resource owners being the driving force.

Exam Tip: In the 2011 and 2013 examinations, students were once again asked to demonstrate an understanding of the price mechanism's role in allocating resources. It would be helpful for students to refer to the role of relative prices, but more importantly, they need to describe how changes in prices ultimately cause resources to move from one area to another. The use of an example would greatly assist in this regard, such as the example above in relation to the price of labour.

Exam Tip: In the 2014 exam, students were asked to explain how a change in relative prices might result in a reallocation of resources. A useful starting point would be to correctly define relative prices. Students should then build on this with an example (even referring to Good A and Good B as substitutes) to illustrate how the change in one price relative to another will ultimately reallocate resources.

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.*

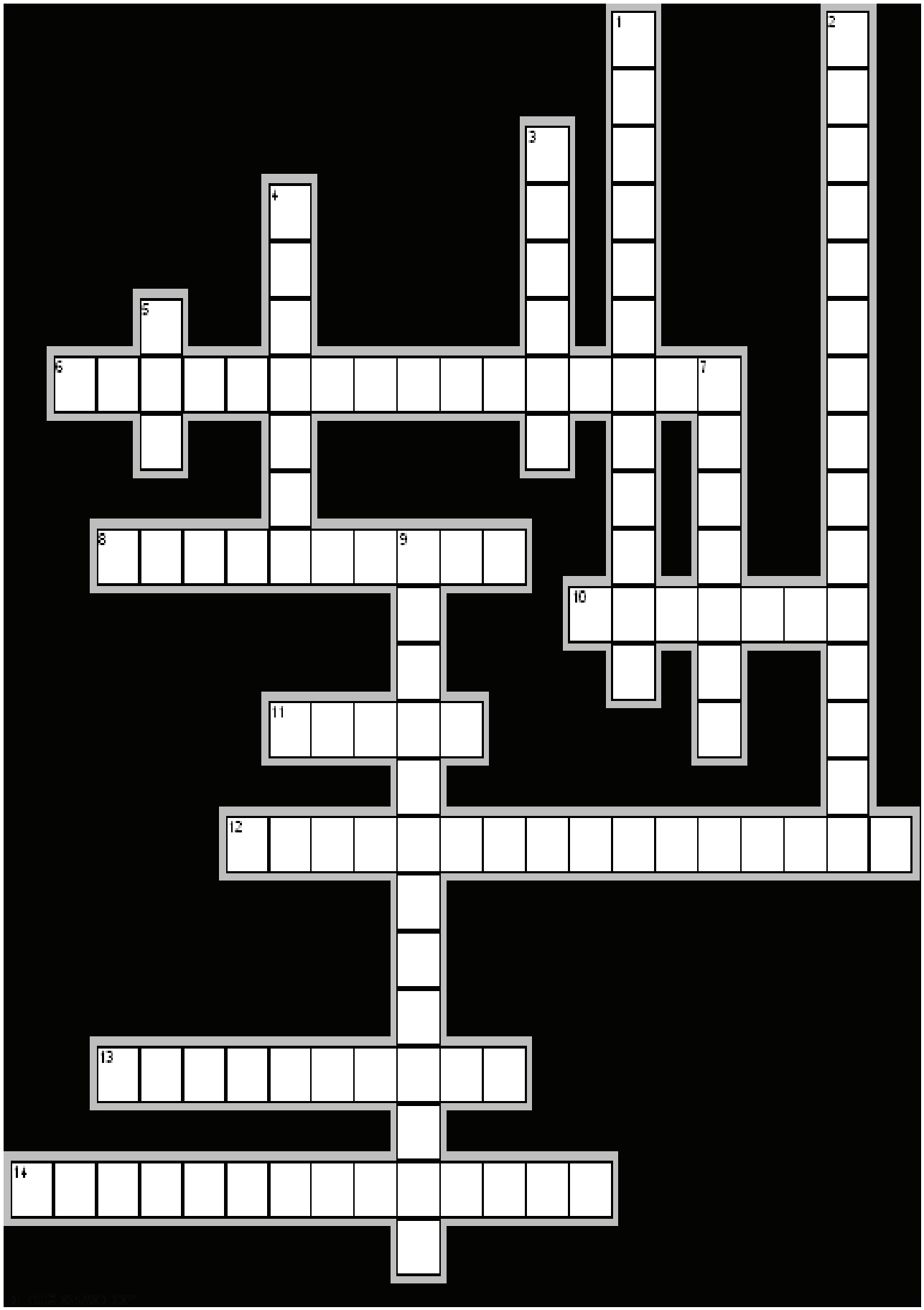
Quick revision crossword No 1: Introduction to economics

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?

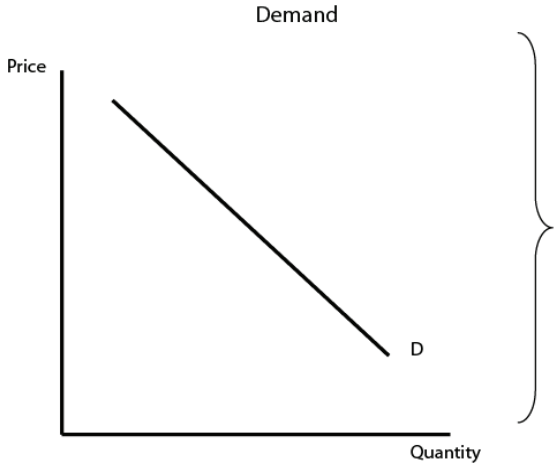
Demand is the willingness of consumer(s) to purchase a good or service for a price. That is the demand curve shows the quantity consumers are willing to buy at each specific price. The quantity demanded will typically vary for different price levels, with an inverse relationship between the price of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



While the relationship between price and the quantity demanded is drawn as a straight line, it typically takes on a curved shape for reasons you don't need to be aware of for this course. Hence, it is commonly referred to as a Demand curve even when it is presented as a straight line.

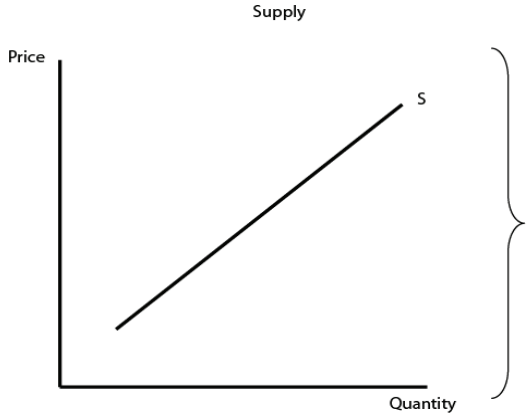
What is Supply?

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

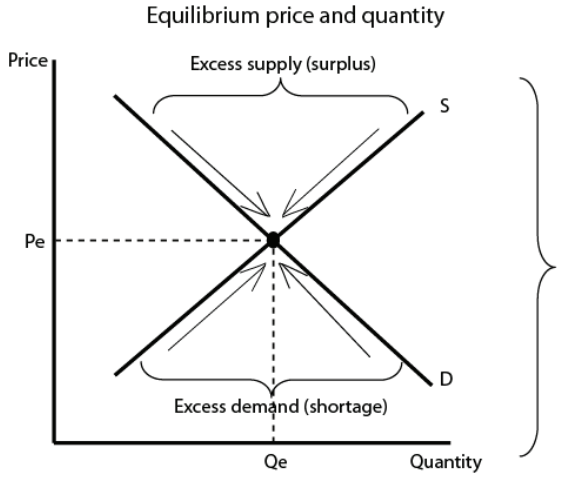
This relationship gives us the supply curve below.



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

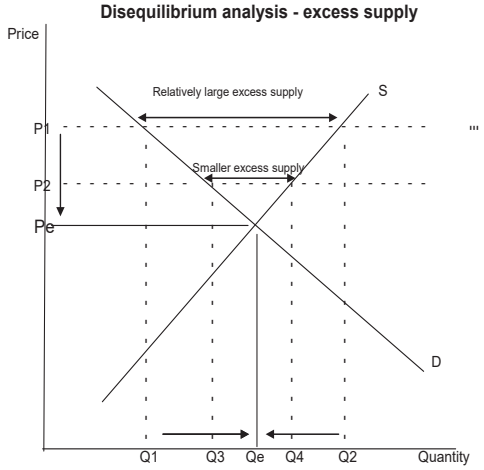
In every market, the forces of demand and supply will determine both prices of the product and the quantity that is likely to be supplied for a given time period. Price and quantity will tend to move towards their 'equilibrium levels'.



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.

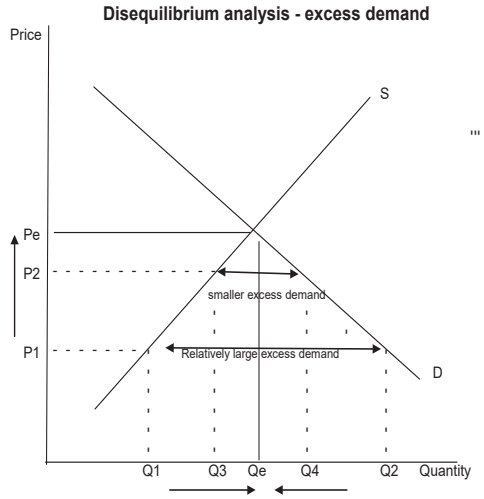
If the price in a market is not at its equilibrium level, then it is not in a state of rest and the price will converge towards its **Pe** level. The amount of time this takes will depend on a number of factors, in particular the market in question. For example, the price of grapes at the Queen Victoria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

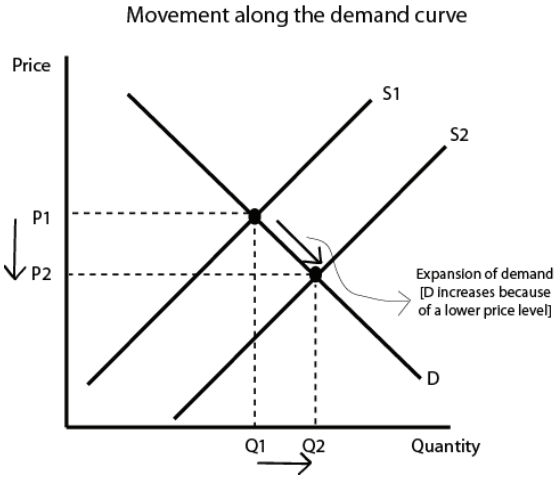


With price set at P1, the supplier is producing Q1 whilst consumers are demanding Q2. It becomes apparent to the supplier that this price is too low because supplies are depleted relatively quickly and production is not keeping up with demand for the product. Excess demand (or shortage) is represented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

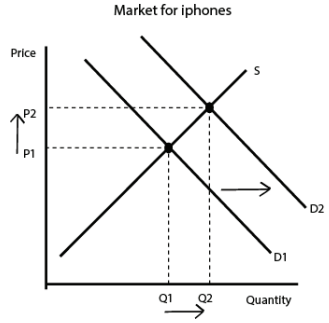
In this case, there has been an increase in demand along the demand curve (sometimes referred to as an expansion of demand). Clearly, price is not the only factor that will influence the demand for a product. Demand can increase or decrease for reasons that are unrelated to the price of the product. 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. In the current example, it would be incorrect to say that an increase in the price of an Ipod substitute will result in greater Ipod demand because there are other factors that may simultaneously cause the demand for Ipods 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 Ipod demand 'should increase' or 'is likely to increase' when there is an increase in the price of other MP3 players. 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 2017 - 2021 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.



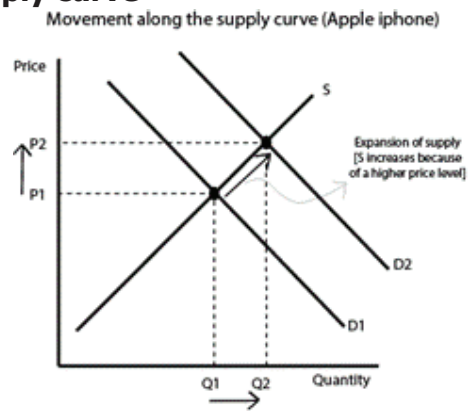
Each of the above hypothetical events will result in the demand curve shifting to the right and this will place upward pressure on price.

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.

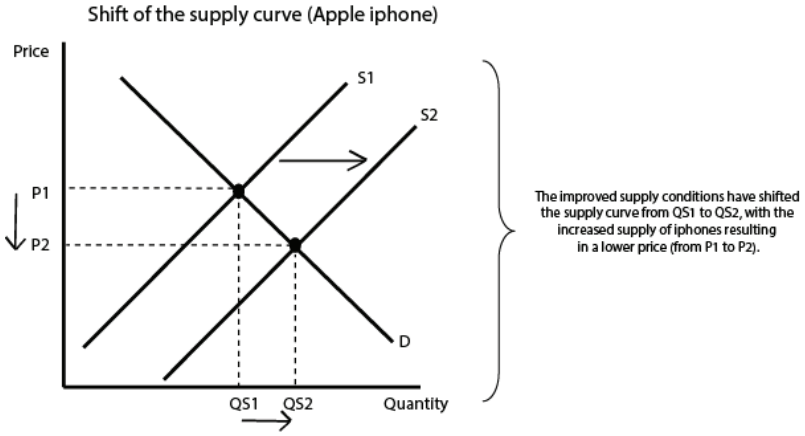
Apart from the price of the product, there are several other factors that will change the willingness of suppliers to supply to the market. These factors will result in a shift of the position of the supply curve, which will then influence price and quantity demanded in that market. Ultimately, all of 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 2017 - 2021 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.

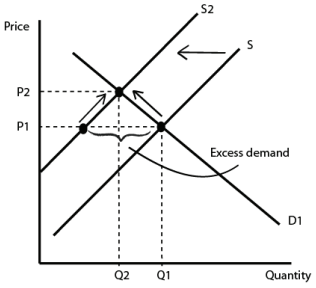
Exam Tip: Like before, don't get confused about the relationship between price and quantity supplied. A price decrease will be associated with higher supply levels if the increase in supply is what came first (i.e. a shift to the right of the supply curve). However, a price increase will be associated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

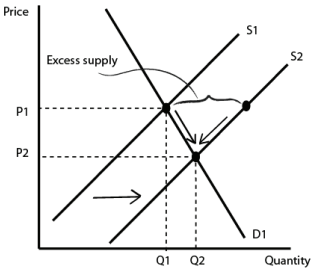
So far, we have examined shifts of both the demand and supply curves (which represent changes in demand and supply conditions in markets) and how these changes influence the prices of various goods and services. When these changes occur, a market moves from a position of equilibrium to disequilibrium,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



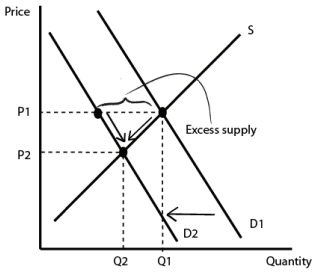
Market in equilibrium at P1, Q1
Disequilibrium caused by a decrease in supply (S1 to S2)
Excess demand is created at existing price of P1
Price is forced up to P2
Equilibrium restored at a higher P2 and lower Q2

Higher supply
[supply shifts to the right]



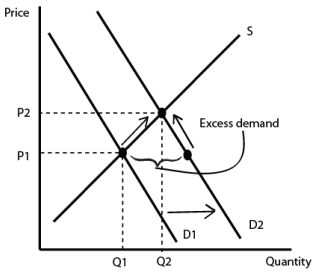
Market in equilibrium at P1, Q1
Disequilibrium caused by an increase in supply (S1 to S2)
Excess supply is created at existing price of P1
Price is forced down to P2
Equilibrium restored at a lower P2 and higher Q2

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.

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.

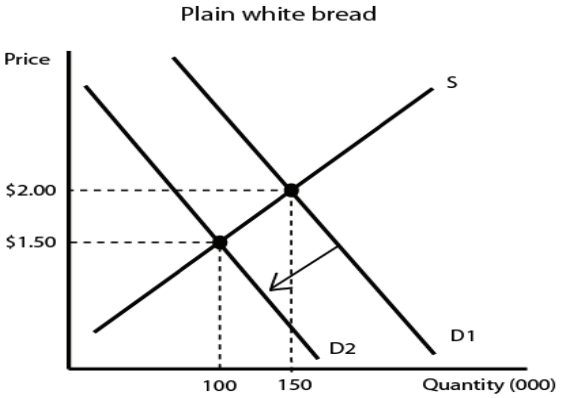
The three key economic questions of what, how and for whom to produce are typically answered via the price mechanism. Price is used to ration "scarce" goods and services such that resources will be allocated/used to maximise producer profits. However, in a competitive market this must involve producing 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.]

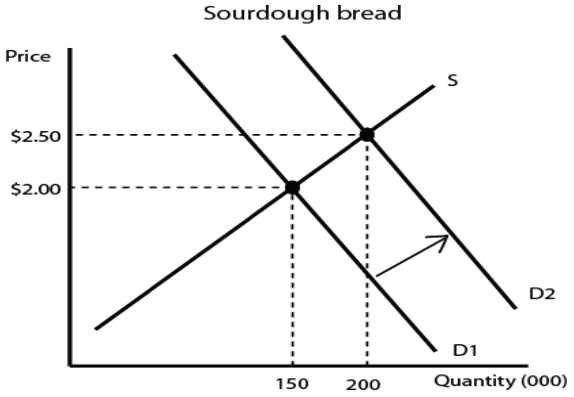
Throughout the economy, prices will be set for all goods and services. This means that any two goods or services can be compared or related to each other in terms of price. For instance, if a skateboard costs $50 and a bike costs $200, then the relative price of bikes to skateboards is 200/50 or 4:1. 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 and 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. 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



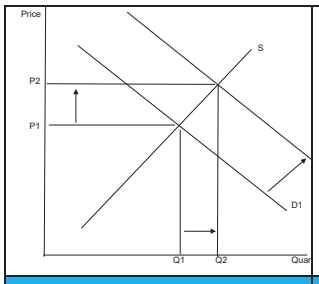
The higher demand for sourdough bread causes the (relative) price of sourdough bread to rise which encourages bakers to produce an additional 50,000 loaves of sourdough. ***More*** resources (e.g. labour and machinery) are used in the production of sourdough bread. Note that the relative price of sourdough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

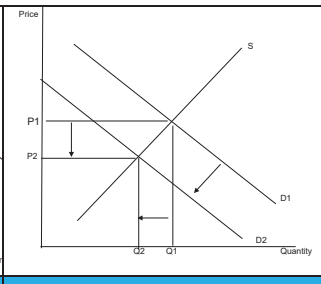
Markets are dynamic, with demand and supply factors changing frequently. A change in the cost of production will alter the profit being made by producers and hence the relative profit (the profit of one output compared to an alternative output) and the quantity producers wish to make. This in turn will 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.

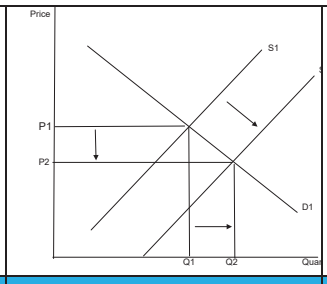
The "**for whom to produce**" will be decided by consumers' willingness to pay which in turn influences where resources will be allocated. As such the price mechanism will adjust to changes in demand and supply, to alter the relative price and relative profit so that resources do flow towards the production of goods and services that are in demand and hence satisfy society's needs and wants. As mentioned however markets do not always allocate resources in a way that maximises living standards by best satisfying 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.

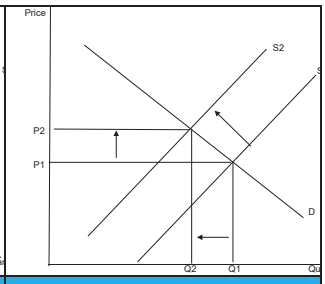
DEMAND AND SUPPLY QUICK QUIZ

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.







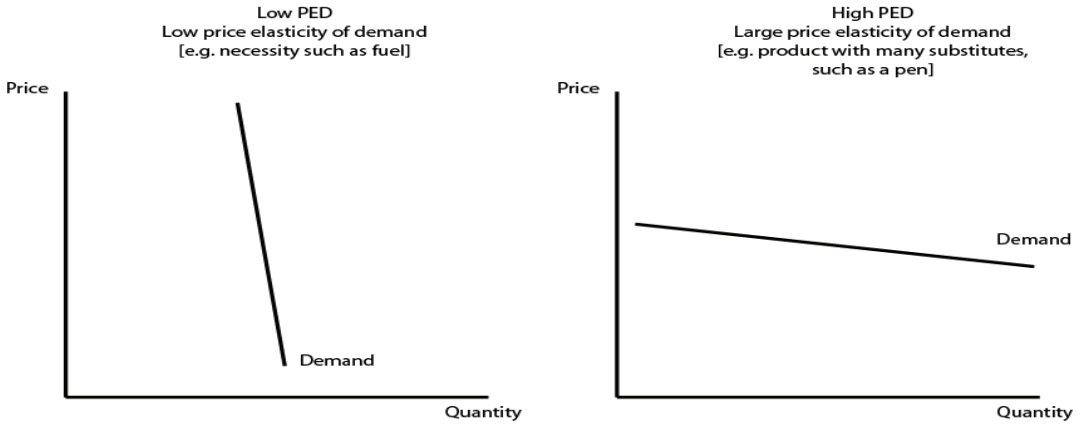


A	B	C	D
1	**2**	**3**	**4**
Water tanks: the government removes a $500 rebate to those who purchase and install water tanks	**Volkswagen cars:** VW are caught manipulating emissions data from some of their vehicles to boost "green" credentials.	**Cigarettes:** the government increases excise tax on tobacco 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 Sth Australia:** the reconstruction following the early 2015 bushfires	**Luxury cars:** the government increases the luxury car tax
9	**10**	**11**	**12**
Stationery supplies: the school year ends	**Buildings:** government regulations require scaffolding around all building sites above a certain height	**Motor vehicles:** the cost of petrol falls following the 2014-15 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	**Insulation bats:** the government provides a subsidy to consumers who insulate their homes	**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 reduce the incidence of file sharing and 'illegal' downloading of music	**Corn:** More and more corn is used as a bio-fuel for motor vehicles	**Houses:** the government decides to substantially reduce immigration numbers
37	**38**	**39**	**40**
Carbon: The government re-introduces a carbon tax.	**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	**Test cricket:** 20/20 cricket captures the interest and imagination of consumers

Answers on page 134

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.



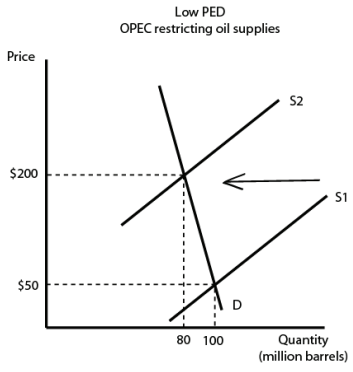
There are many factors that determine the PED for particular products. For example, each of the following 'hypothetical' factors is likely to increase the PED (i.e. flatten the demand curve) for 'Samsung' mobile phones:

- *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

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.



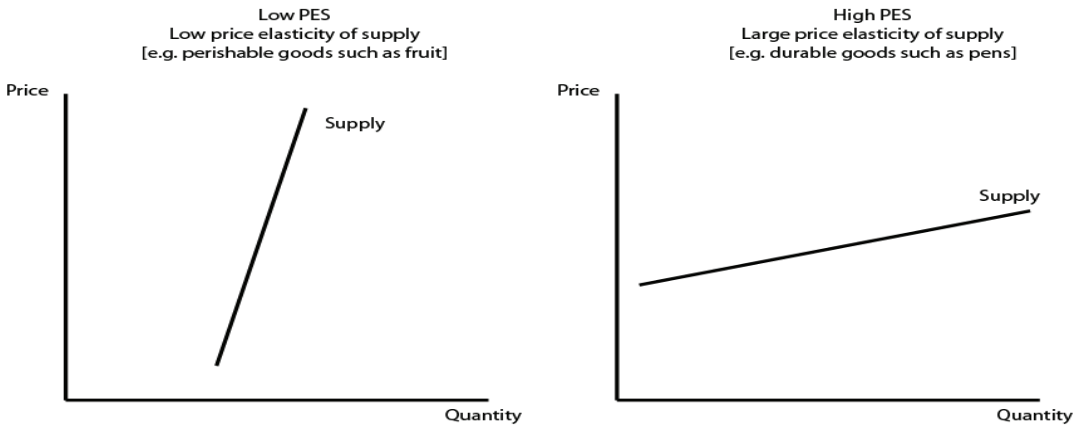
A product is said to have a high price elasticity of demand if the % change in price causes a larger % change in quantity demanded (for example a 10% increase in price that leads to a 30% fall in demand). A product is said to have a low price elasticity if the % change in price causes a smaller % change 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.*
2. *Explain why the supply curve is upward sloping.*
3. *Draw a rough demand and supply diagram for 'water tanks', highlighting the equilibrium point and explaining why this is referred to as 'equilibrium.*
4. *Analyse how the market for water tanks responds when the price is above equilibrium.*
5. *Analyse how the market for water tanks responds when the price is below equilibrium.*
6. *Distinguish a shift of the demand curve from a movement along the demand curve*
7. *Describe two hypothetical factors that might cause the demand curve for water tanks to shift to the right and outline how this is likely to affect the price of water tanks, production of water tanks and the allocation of resources in the economy.*
8. *Distinguish a shift of the supply curve from a movement along the supply curve.*
9. *Describe two hypothetical factors that might cause the supply curve for water tanks to shift to the right and outline how this is likely to affect the price of water tanks, production of water tanks and the allocation of resources in the economy.*
10. *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.*
11. *Explain how the price mechanism works to allocates more resources to the production of solar panels once a carbon tax is introduced.*
12. *Compare material and non-material living standards.*
13. *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*
14. *Define the terms price elasticity of demand (PED) and price elasticity of supply (PES).*
15. *Describe one factor that could reduce the PED for water tanks.*
16. *Analyse how a lower PED for water tanks is likely to affect the price, production volumes and profits when the supply curve shifts to the left.*
17. *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.*
18. *Discuss how the PES for algae based petrol is likely to change if production time accelerates and the synthetic petrol can be easily stored.*
19. *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.*
20. *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 cigarettes, the government increases tax (excise) on tobacco.*
ii. *In the market for wine, there is a heat wave affecting the size of wine grape harvests.*
iii. *In the market for housing, interest rates in the economy increase to relatively high levels.*
iv. *In the pear market, the price of apples (a substitute) decreases significantly following more NZ imports.*
v. *In the market for electricity, the carbon tax raises the costs of production.*
vi. *In the market for iron ore, there is a substantial fall in global steel production.*
vii. *In the market for housing, the government removes the capital gains tax concessions applying to owner occupied dwellings.*
viii. *In the market for education, the government makes it more difficult for international students to gain permanent residency upon the completion of their courses.*
ix. *In the market for cotton, Queensland floods damage more than 50% of cotton crops.*
x. *In the market for interest bearing bonds, several governments in Europe are experiencing sovereign debt difficulties.*
xi. *In the market for shares, the government increases the superannuation guarantee levy to 12%.*
xii. *In the market for truck drivers, the mining boom ends.*
xiii. *In the market for Australian sheep, there is a large fall in the value of the Australian dollar.*
xiv. *In the market for houses, there is a significant decrease in immigration.*
xv. *In the market for crude oil, the USA producers are able to extract significantly more oil from the ground.*
xvi. *In the market for crude oil, there is a slowdown in global economic growth.*

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