OCR Economics AS-level

Microeconomics

Topic 2: How Competitive Markets Work

2.3 Supply and demand and the interaction of markets

Notes

- A **market** is created when buyers and sellers interact. A **sub-market** is part of an overall market, but it has some unique characteristics. In each sub-market, there is a different market structure. For example, from the market of banking, each sub-market could be credit cards, loans, mortgages or savings accounts.

Demand:

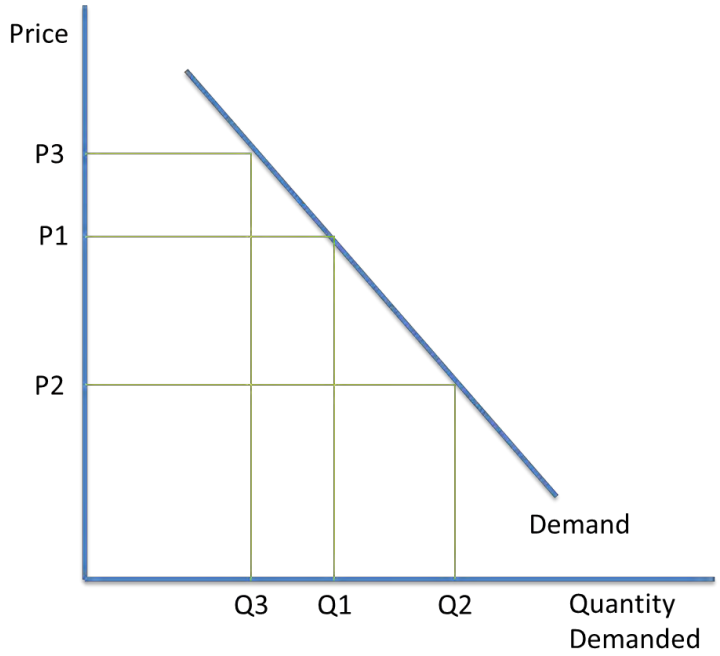
- **Individual demand** is the demand of an individual or firm, measured by the quantity bought at a certain price at one point in time.
- **Market demand** is the sum of all individual demands in a market.

Types of demand:

- **Derived demand:** This is when the demand for one good is linked to the demand for a related good. For example, the demand for bricks is derived from the demand for the building of new houses. The demand for labour is derived from the goods the labour produces. For example, if the demand for cars increases, the demand for the labour to produce those cars will increase.
- **Composite demand:** This is when the good demanded has more than one use. An example could be milk. Assuming there is a fixed supply of milk, an increase in the demand for cheese will mean that more cheese is supplied, and therefore less butter can be supplied.
- **Joint demand:** This is when goods are bought together, such as a camera and a memory card.
- **Competitive demand:** This is the demand for goods which are substitutable, so the sale of the good is in competition with the substitute. For example, a Samsung TV is in competitive demand with a Sony TV.

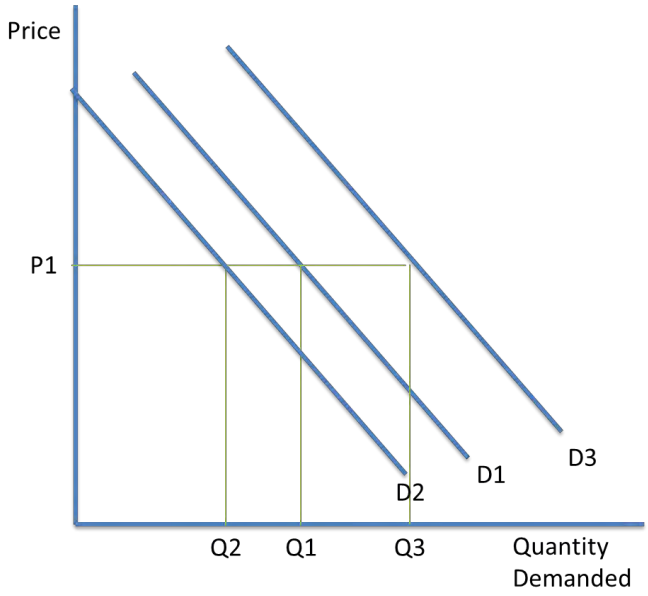
- Demand is the **quantity of a good or service that consumers are able and willing to buy at a given price during a given period of time.**
- Demand varies with price. Generally, the lower the price, the more affordable the good and so consumer demand increases. This can be illustrated with the demand curve.

Movements along the demand curve:



- At price P1, a quantity of Q1 is demanded. At the lower price of P2, a larger quantity of Q2 is demanded. This is an **expansion** of demand. At the higher price of P3, a lower quantity of Q3 is demanded. This is a **contraction** of demand. Only changes in price will cause these movements along the demand curve.

Shifting the demand curve:



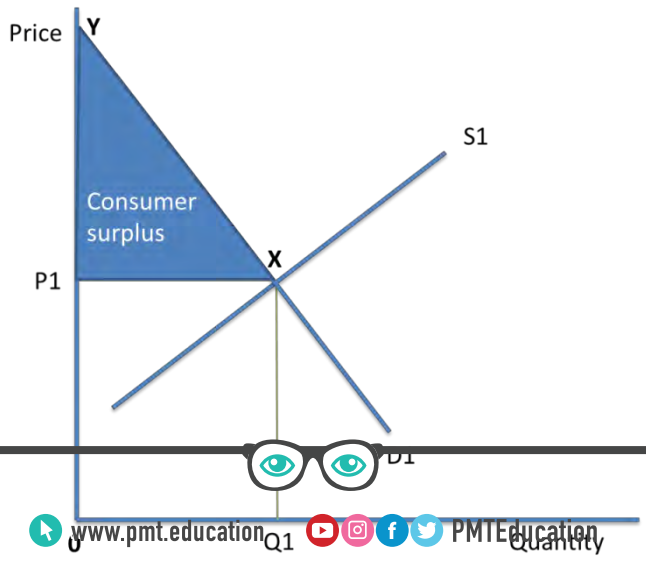
- Price changes do not shift the demand curve. A shift from D1 to D2 is an inward shift in demand, so a lower quantity of goods is demanded at the market price of P1. A

shift from D1 to D3 is an outward shift in demand. More goods are demanded at the market price of P1.

- The factors that shift the demand curve can be remembered using the mnemonic PIRATES:
  - **P- Population.** The larger the population, the higher the demand. Changing the structure of the population also affects demand, such as the distribution of different age groups.
  - **I- Income.** If consumers have more disposable income, they are able to afford more goods, so demand increases.
  - **R- Related goods.** Related goods are **substitutes** or **complements**. A substitute can replace another good, such as two different brands of TV. If the price of the substitute falls, the quantity demanded of the original good will fall because consumers will switch to the cheaper option. A complement goes with another good, such as strawberries and cream. If the price of strawberries increases, the demand for cream will fall because fewer people will be buying strawberries, and hence fewer people will be buying cream.
  - **A- Advertising.** This will increase consumer loyalty to the good and increase demand.
  - **T- Tastes and fashions.** The demand curve will also shift if consumer tastes change. For example, the demand for physical books might fall, if consumers start preferring to read e-books.
  - **E- Expectations.** This is of future price changes. If speculators expect the price of shares in a company to increase in the future, demand is likely to increase in the present.
  - **S- Seasons.** Demand changes according to the season. For example, in the summer, the demand for ice cream and sun lotions increases.

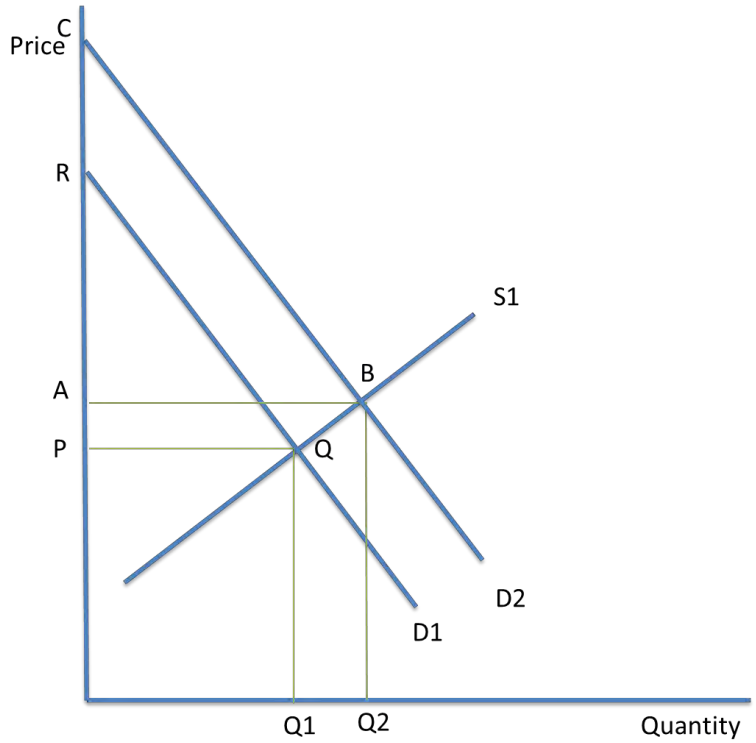
Consumer Surplus

- This is the difference between the price the consumer is willing and able to pay and the price they actually pay. This is based on what the consumer perceives their **private benefit** will be from consuming the good.



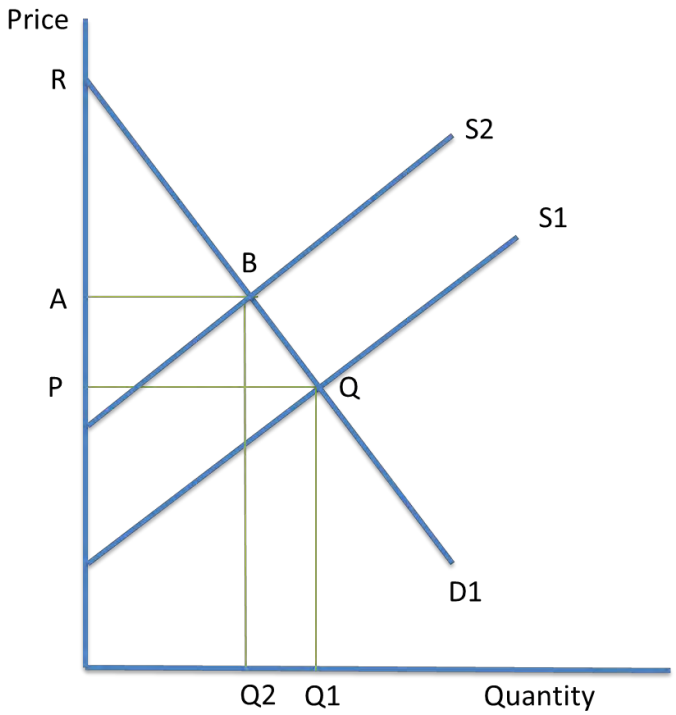
- Consumers pay price P1 and demand a quantity of Q1. This is shown by area P10Q1X.The total benefit to the consumer is area 0Q1XY, but because they pay price P10Q1X, the net gain to the consumer P1XY, the shaded triangle. This is consumer surplus.
- It is always the area above market price and below the demand curve.
- Due to the law of diminishing marginal utility, consumer surplus generally declines with extra units consumed. This is because the extra unit generates less utility than the one already consumed. Therefore, consumers are willing to pay less for extra units.
- Inelastic demand curves give a larger consumer surplus. This is because consumers are willing to pay a much higher price to consume the good.

Increasing consumer surplus:



- An increase in demand from D1 to D2 increases consumer surplus from PQR to ABC.

Decreasing consumer surplus:



Supply has shifted to the left, which could be due to higher costs of production. This causes market price to increase, and consumer surplus decreases from PQR to ABR.

Supply:

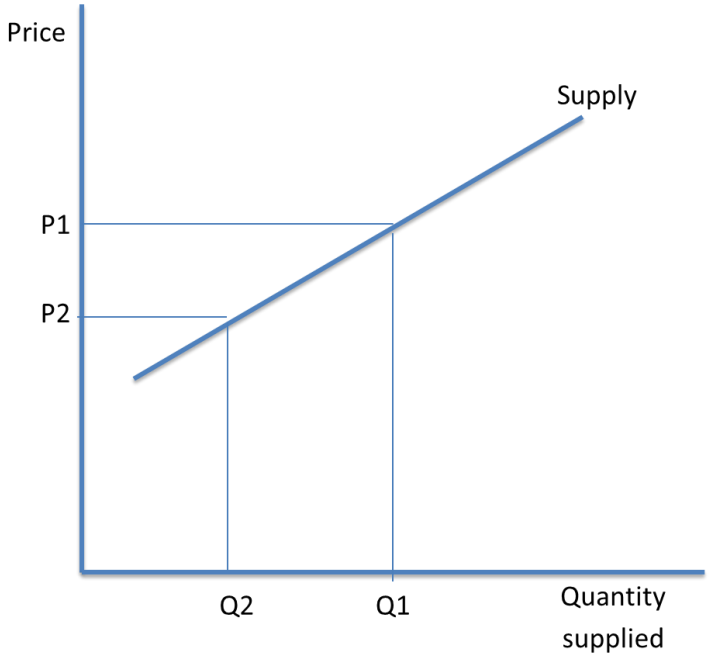
- **Individual supply** is the supply that a producer is willing and able to sell at a given price in a given period of time.
- **Market supply** is the sum of all individual supplies in a market.

Types of supply:

- **Joint supply:** This is when increasing the supply of one good causes an increase or decrease in the supply of another good. For example, producing more lamb will increase the supply of wool.
- **Composite supply:** This occurs when a good or service can be obtained from different sources. For example, light can be produced from candles, electricity and gas.
- **Competitive supply:** If the raw materials producing the good in composite supply are perfect substitutes of each other, the sources of supply are in competition to satisfy a particular need or want. For example, if electricity and candles were substitutes and cost the same to produce, they would compete to produce the good, light.

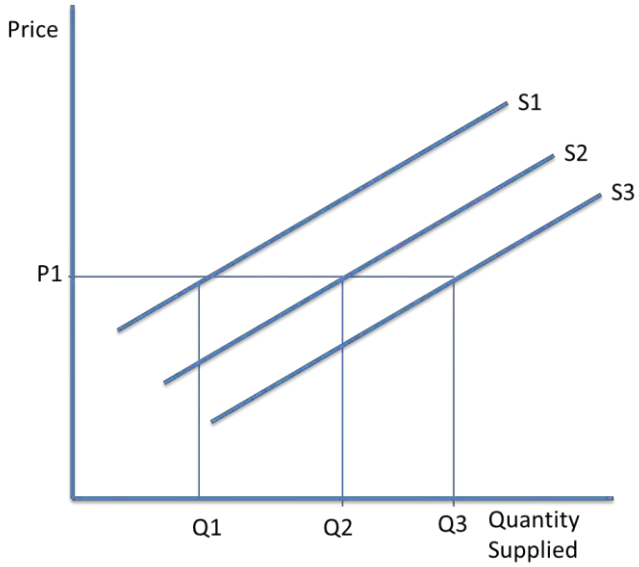
- Supply curves are upward sloping because:
  - If price increases, it is more profitable for firms to supply the good, so supply increases.
  - High prices encourage new firms to enter the market, because it seems profitable, so supply increases.
  - With larger outputs, firm's costs increase, so they need to charge a higher price to cover the costs.

Movements along the supply curve:



- At price P1, a quantity of Q1 is supplied. At the lower price of P2, Q2 is supplied. This is a **contraction** of supply. If price increases from P2 to P1, QS increases from Q2 to Q1. This is an **expansion** of supply. Only changes in price will cause these movements along the supply curve. This is based on the theory of the **profit motive.** Firms are driven by the desire to make large profits.

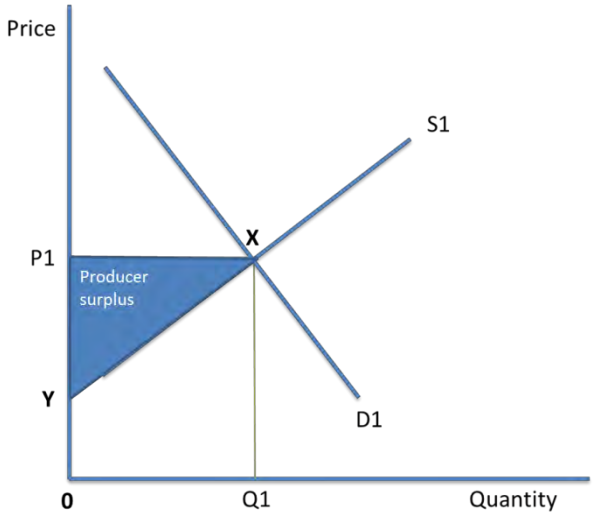
Shifting the supply curve:



- Price changes do not shift the supply curve. A shift from S1 to S2 is an outward shift in supply, so a larger quantity of goods is supplied at the market price of P1. A shift from S3 to S1 is an inward shift in supply. More goods are supplied at the market price of P1.
- The factors that shift the supply curve can be remembered using the mnemonic PINTSWC:
    - **P- Productivity.** Higher productivity causes an outward shift in supply, because average costs for the firm fall.
    - **I- Indirect taxes.** Inward shift in supply.
    - **N- Number of firms.** The more firms there are, the larger the supply.
    - **T- Technology.** More advanced the technology causes an outward shift in supply.
    - **S- Subsidies.** Subsidies cause an outward shift in supply.
    - **W- Weather.** This is particularly for agricultural produce. Favourable conditions will increase supply.
    - **C- Costs of production.** If costs of production fall, the firm can afford to supply more. If costs rise, such as with higher wages, there will be an inward shift in supply.
    - Also, depreciation in the exchange rate will increase the cost of imports, which will cause an inward shift in supply.

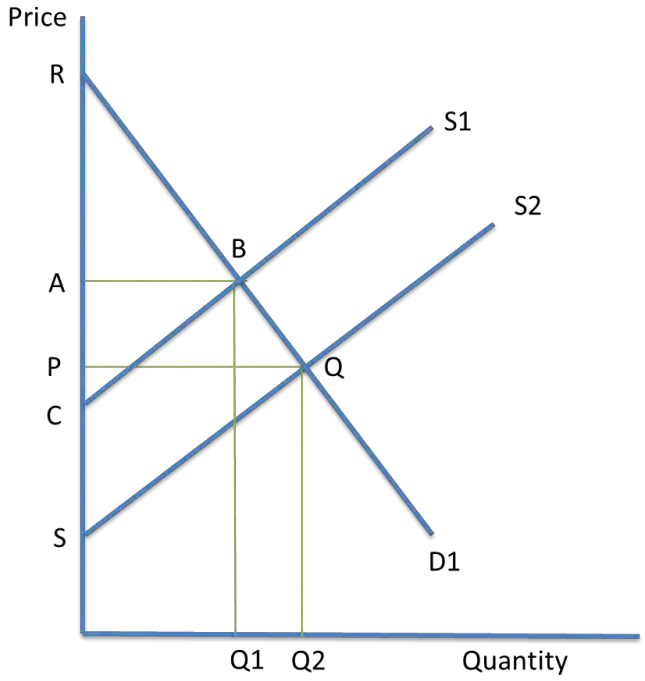
Producer Surplus

This is the difference between the price the producer is willing to charge and the price they actually charge. In other words, it is the private benefit gained by the producer that covers their costs, and is measured by profit.



This is always the area below the market price and above the supply curve.

Increasing producer surplus:



- This is caused by a shift in the supply curve from S1 to S2, which could be due to lower average production costs, for example. Therefore market price decreases and producer surplus increases.

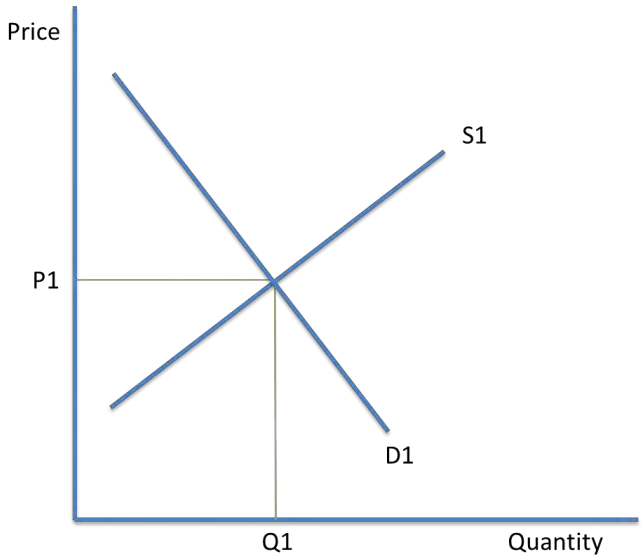
- Producer surplus increases from ABC to PQS.

- This could also be due to an increase in demand which causes price to increase.

- Producer surplus increases from area PQD to ABD.

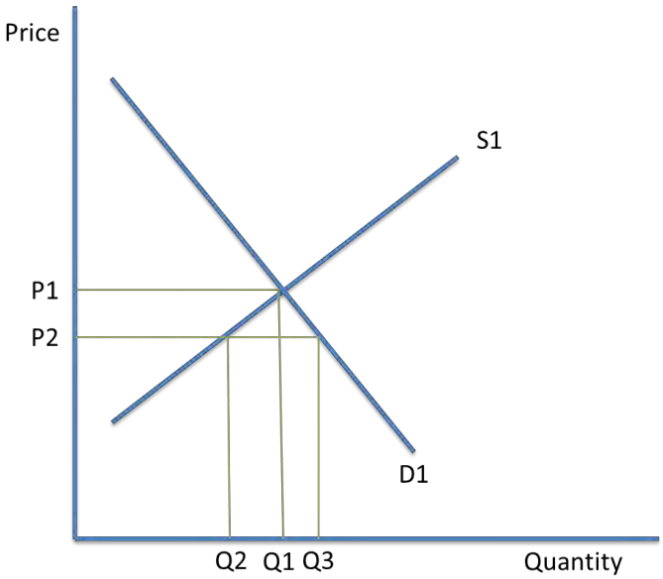
Equilibrium price and quantity

- This is when supply meets demand. On the diagram, this is shown by P1 and Q1.
- At market equilibrium, price has no tendency to change, and it is known as the **market clearing price.**



Disequilibrium

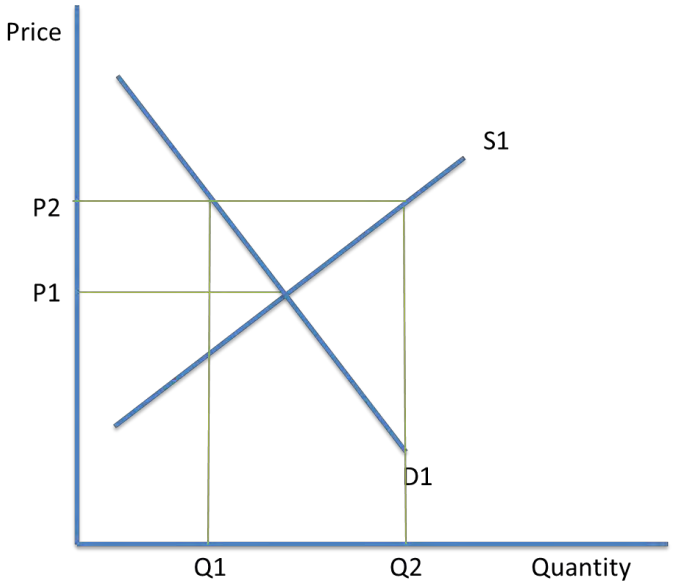
Excess demand



- At Q2, price is at P2 which is below market equilibrium. Demand is now greater than supply, which can be calculated by Q3-Q2.
- This is a **shortage** in the market. This pushes prices up and causes firms to supply more. Since prices increase, demand will contract.
- Once supply meets demand again, price will reach the market clearing price, P1.

Excess supply

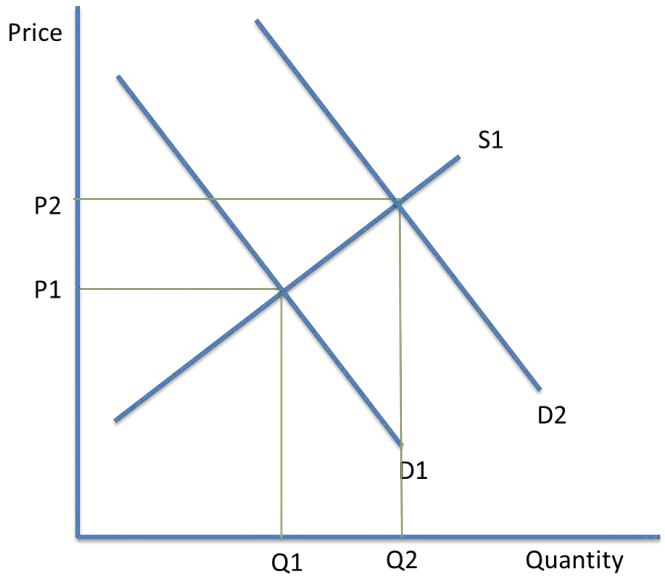
- This is when price is above P1.



- Supply is now at Q2 and demand is at Q1. There is a **surplus** of Q2- Q1. Price will fall back to P1 as firms lower their prices and try to sell their goods. The market will clear and return to equilibrium.

New market equilibriums

- When the demand or supply curves shift due to the PIRATES or PINTSWC reasons, new market equilibriums are established.



- For example, if there was an increase in the size of the population, demand would shift from D1 to D2.
- Price would increase to P2 and suppliers would supply a larger quantity of Q2. A new market equilibrium is established at P2 Q2.

Why the price and output of some goods and services is volatile:

- Commodity prices are usually unstable, especially in the short run. For example, food producers face unstable prices.
- Incomes have fallen because the supply of food has increased. This is due to better technology which has increased the yield of crops, the entrance of new countries into the market and the increased buying power of supermarkets, which means they can choose how much they pay farmers.
- The changes in supply affect the price of commodities. The supply changes due to weather patterns and growing conditions.
- This can be explained using a cobweb diagram:

- In the short run, supply is at Q1. It ends up less than expected at the equilibrium point. This pushes the price up to P1.
- The following year, farmers plan the output to be Q2. But, now prices have fallen to P2.
- This continues until producers are forced to leave the market.
- It is largely caused by information failure. Farmers are not aware how their decisions affect next year's prices.
- An increase in supply can also cause a 'cobweb' to form.

The usefulness of supply and demand in analysing the markets of commodities, housing and transport:

- Demand for agricultural produce tends to be stable in the long run, because the largest markets of the US and Europe tend to have stable populations.
- Since food is a necessity, demand is price inelastic, so it is not very responsive to changes in price.
- Supply tends to be unstable. This is largely due to:
    - poor technology on individual farms
    - the geographical distance between farms which makes it difficult to coordinate them
    - supply side shocks which destroy output, such as droughts
    - the price elastic nature of the supply in the long run, which encourages producers to enter the market when the price is high
    - imperfect information, linked to the cobweb theory

- In the housing market, house prices are important because they make up most of consumer wealth in the UK.
- This means that changes in house prices can significantly affect the rest of the UK.
- This is through the wealth effect and changes in interest rates.
- If house prices increase, due to the **wealth effect**, the ratio of the market value of the house to the mortgage increases, and consumers experience an increase in equity.
- This leads to a rise in consumer spending and a shift to the right of the demand curve.
- In the long run, house prices increase, but in the short run they are volatile.
- This can make using supply and demand diagrams less effective.

- In the transport market, demand varies with times (off peak and peak), and there is often a disequilibrium in the market. Demand exceeds supply during periods of congestion.
- The demand and supply of transport is affected by other markets, too. For example, the price of petrol, the price of train tickets, substitutes and the time of the journey all impact the mode of transport chosen.

The assumptions underlying the model of supply and demand:

- The models of supply and demand can only show certain markets.
- The demand curve assumes that as price goes down, consumers demand more. In reality, this is not the case.
- Similarly, the supply curve assumes as price increase, suppliers produce more.
- It also assumes there is perfect information in the market.

The usefulness and limitations of supply and demand in explaining real world problems:

- There are limitations to the model. In real life, consumers and producers do not have perfect information, and they do not always act rationally, like the model suggests.
- However, the model is useful for competitive markets, where there are many buyers and sellers.