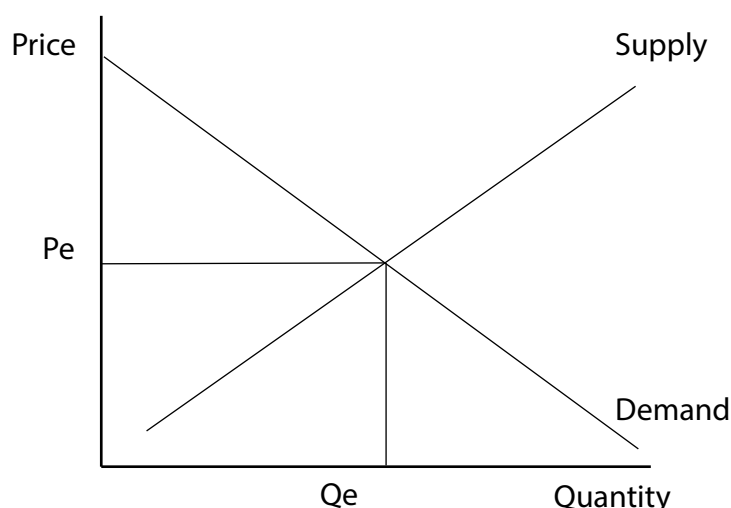
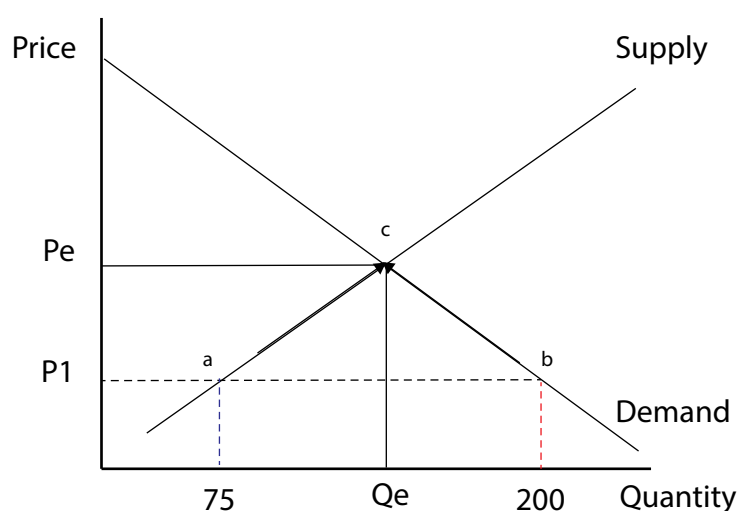


Equilibrium

Equilibrium in economics means a situation with no tendency to change. From what we know already, this will occur at the price and output at which supply equals demand – this will mean that there is no upward or downward pressure on price. In the diagram below this occurs at P_e , Q_e :



Suppose that for some reason price was below equilibrium (perhaps demand had recently surged, or supply had fallen sharply due to a natural disaster). In the diagram below, price would be at P_1 :

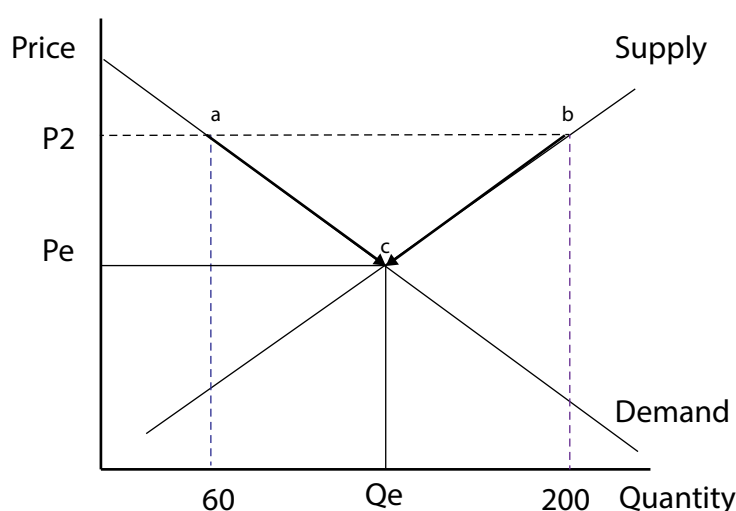


If price was only P_1 , this would mean that demand would be 200 units per week, but producers would only be willing to sell 75 (because the marginal cost of each unit after the 75th is more than P_1 , so they would make a loss on every unit that they sold). Therefore there is **excess demand** of 'ab' or 125 units per week.

Frustrated consumers will start to push up the prices. As they do so, two things happen. Firstly, some producers will expand production – with a higher price. They now have an incentive to supply more, and also the higher price will enable them to cover their higher costs of production. Supply will now increase, extending from 'a' towards 'c' on the diagram. At the same time, some consumers will no longer wish to buy the product as prices rise – their marginal utility will not be

high enough for it to be worthwhile. Hence demand will fall, contracting along the demand curve from 'b' towards 'c'. Prices will continue to rise as long as there is excess demand. At 'c', supply now equals demand, so there will be no further upward pressure on price – 'c' is the equilibrium point.

Suppose, alternatively, that price was above equilibrium for some reason. In the diagram below this would be P_2 . Imagine this was the market for houses. At the high price of P_2 , lots of people want to sell their houses for a profit (200 per month), but few people will buy (only 60 per month). There is **excess supply** of 'ab' or 140 houses per month. As a result, the price of houses will begin to fall – the small number of buyers have lots of desperate sellers to buy from. As prices fall two things happen. Firstly, some new consumers enter the market – as prices are lower, they are now prepared to buy. This is shown by the movement along the demand curve from 'a' towards 'c'. At the same time, some sellers will decide that the price is no longer high enough, and will remove their properties from the market. This means that supply is falling due to the lower prices, shown by a contraction in supply from 'b' towards 'c'. Eventually price will fall far enough so that the excess supply is eliminated – at P_e supply now equals demand so there will be no reason for prices to fall.



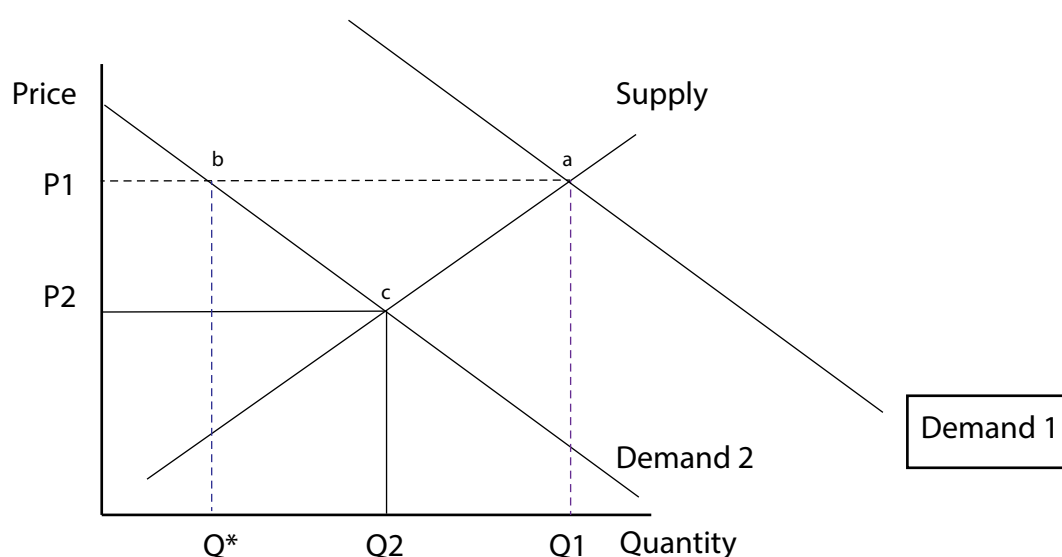
Therefore, the equilibrium price occurs at the price and output where supply and demand are equal.

Shifts in equilibrium

If a market is in equilibrium with supply equal to demand, then in a free market there are only four possible reasons for that equilibrium price and output to change. These are:

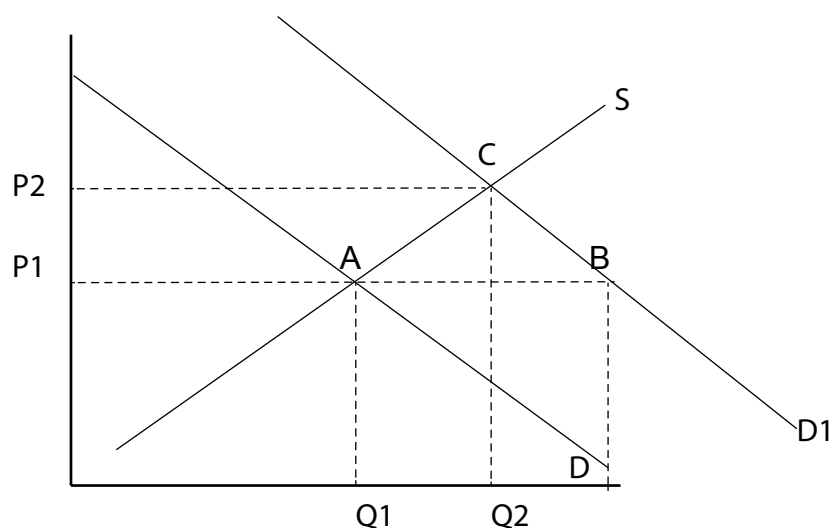
- A rise in demand
- A fall in demand
- A rise in supply
- A fall in supply

To analyse these we always assume that the market starts in equilibrium. Suppose that originally the market for sushi was in equilibrium at P_1 , Q_1 (point 'a'), but that the recession meant that fewer people were going out for meals. This would mean that at any price, the demand for sushi would be lower than it was previously. The demand curve would shift to the left:



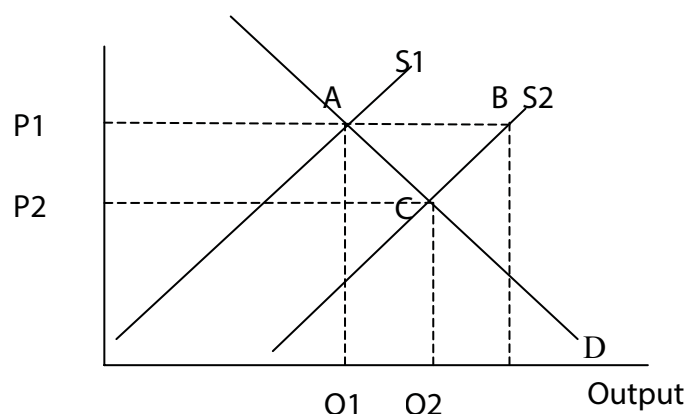
Therefore at the original price of P_1 , there is now excess supply – supply is initially still at 'a' or Q_1 , but demand has fallen to 'b' or Q^* – hence excess supply of 'ab'. Because of the excess supply, price will start to fall, leading to some consumers re-entering the market ('b' moving towards 'c') and some producers leaving the market ('a' moving towards 'c'). Therefore, from an initial equilibrium of 'a' the market adjusts to the fall in demand, finding a new equilibrium at 'c'.

The same will be true for each of the other shifts. The key to successful analysis is always to start with an equilibrium and end with a new equilibrium, explaining how shifts in the curves cause excess supply or demand at the original price, and that this is the reason for the change in price.



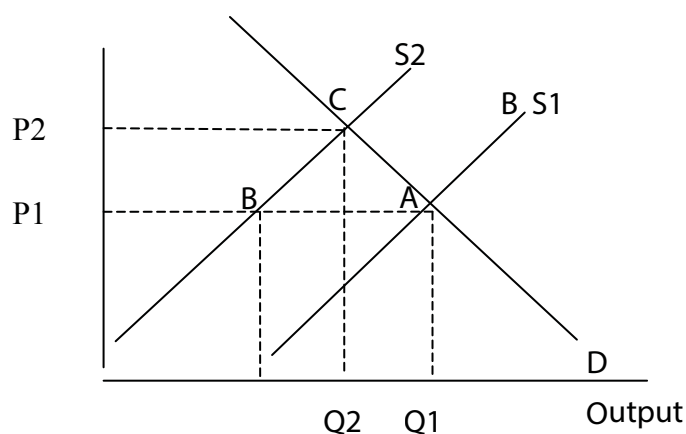
Rightward shift in demand

Initially the market is in equilibrium at 'a'. Suddenly demand shifts to the right (e.g. the product comes into fashion). At the original price, there is now excess demand of AB because demand has fallen, but initially supply stays the same. This excess demand results in an increase in price, causing demand to contract and supply to extend until there is no more excess demand – a new equilibrium of P_2 Q_2 . The shift in demand results in both higher price and higher output as the increase in demand drives up price, allowing firms to expand.



Rightward shift in supply

Initially the market is in equilibrium at 'A'. Supply then shifts to the right (perhaps due to new technology reducing production costs). At the original price, there is now excess supply of AB because supply has increased but demand has stayed the same. This excess supply results in a decrease in price, causing demand to extend (AC) and supply to contract (BC) until there is no more excess supply – a new equilibrium of P2 Q2. The shift in supply results in lower price and higher output as the decrease in costs forces down price and increases demand.



Leftward shift in supply

Initially the market is in equilibrium at 'A'. Supply then shifts to the left (perhaps due to an increase in indirect taxes by the government, increasing firms' costs). At the original price, there is now excess demand of AB – supply has fallen, but demand initially stays the same. This excess demand results in an increase in price, causing demand to contract (AC) and supply to extend (BC) until there is no more excess demand – a new equilibrium of P2 Q2. The shift in supply results in higher price and lower output as the increase in costs forces up prices and therefore reduces demand.