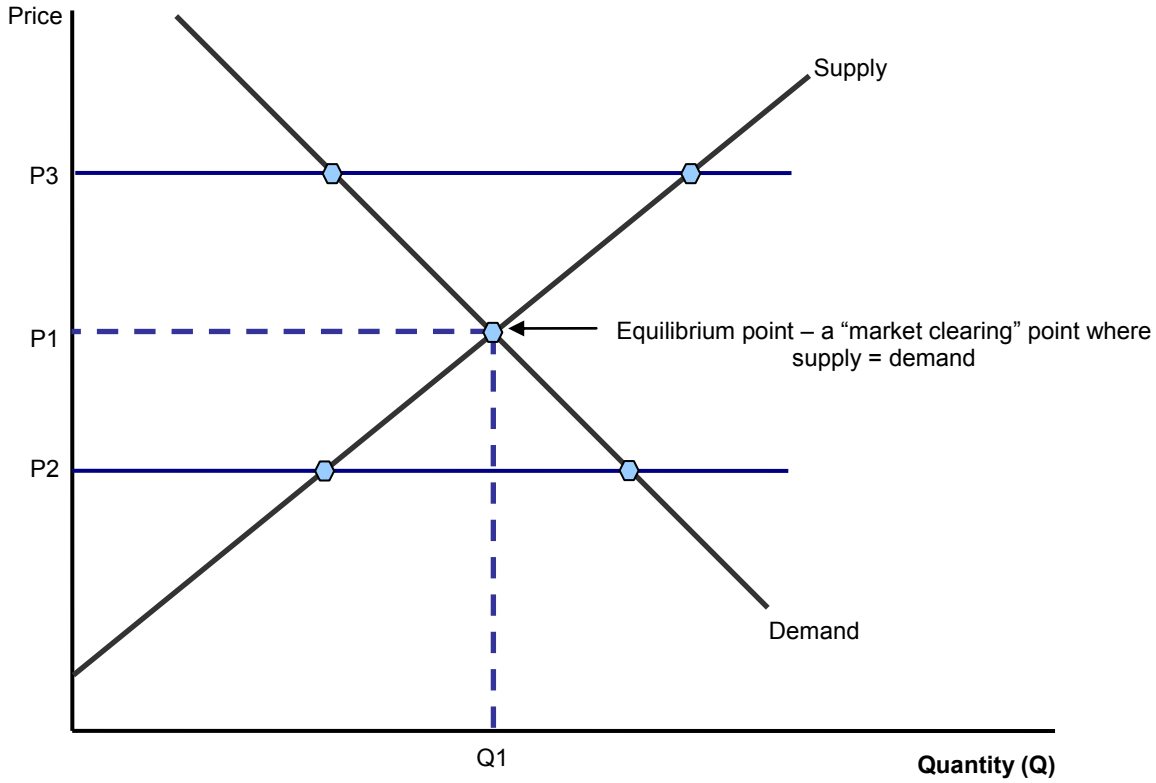
Markets: Finding an Equilibrium Price

The Concept of Market Equilibrium

Market price is set by the interaction of supply and demand. Equilibrium price is the price at which the quantity demanded by consumers and the quantity that firms are willing to supply of a good or service are the same.



Equilibrium means a **state of equality or a state of balance** between **market demand and supply**. Without a shift in demand and/or supply there will be no change in price. In the diagram above, the quantity demanded and supplied at price P1 are equal. At price P3, supply exceeds demand and at P2, demand exceeds supply.

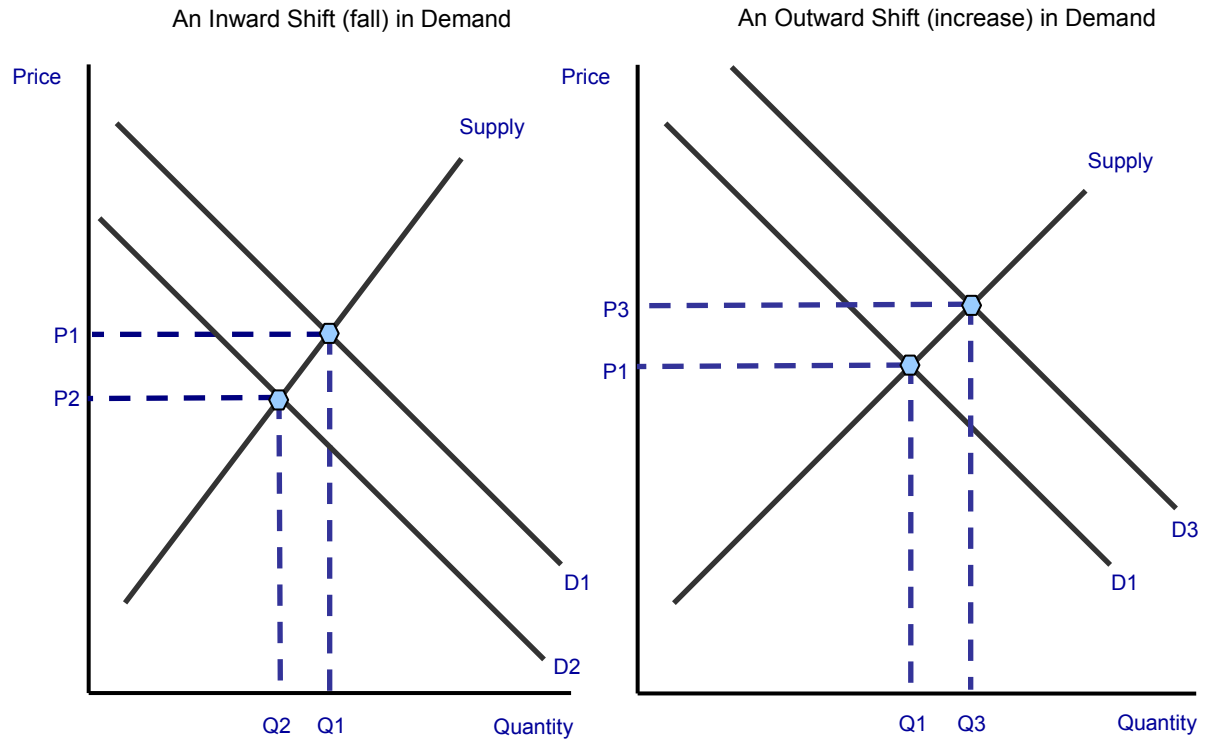
- Prices where demand and supply are out of balance are termed points of disequilibrium.
- Changes in the conditions of demand or supply will cause changes in the equilibrium price and quantity in the market.

Demand and supply schedules can be represented in a table. The example below provides an illustration of the concept of equilibrium. The weekly demand and supply schedules for T-shirts (in thousands) in a city are shown in the next table:

Price per unit (£)	8	7	6	5	4	3	2	1
Demand (000s)	6	8	10	12	14	16	18	20
Supply (000s)	18	16	14	12	10	8	6	4
New Demand (000s)	10	12	14	16	18	20	22	24
New Supply (000s)	26	24	22	20	18	16	14	12

1. The **equilibrium price** is £5 where demand and supply are equal at 12,000 units
2. If the current market price was £3 – there would be **excess demand** for 8,000 units
3. If the current market price was £8 – there would be **excess supply** of 12,000 units
4. A rise in income causes demand to rise by 4,000 at each price. The next row of the table shows the higher level of demand. Assuming that the supply schedule remains unchanged, the new equilibrium price is £6 per tee shirt with an equilibrium quantity of 14,000 units
5. The entry of new producers into the market causes a rise in supply of 8,000 T-shirts at each price. The new equilibrium price becomes £4 with 18,000 units bought and sold

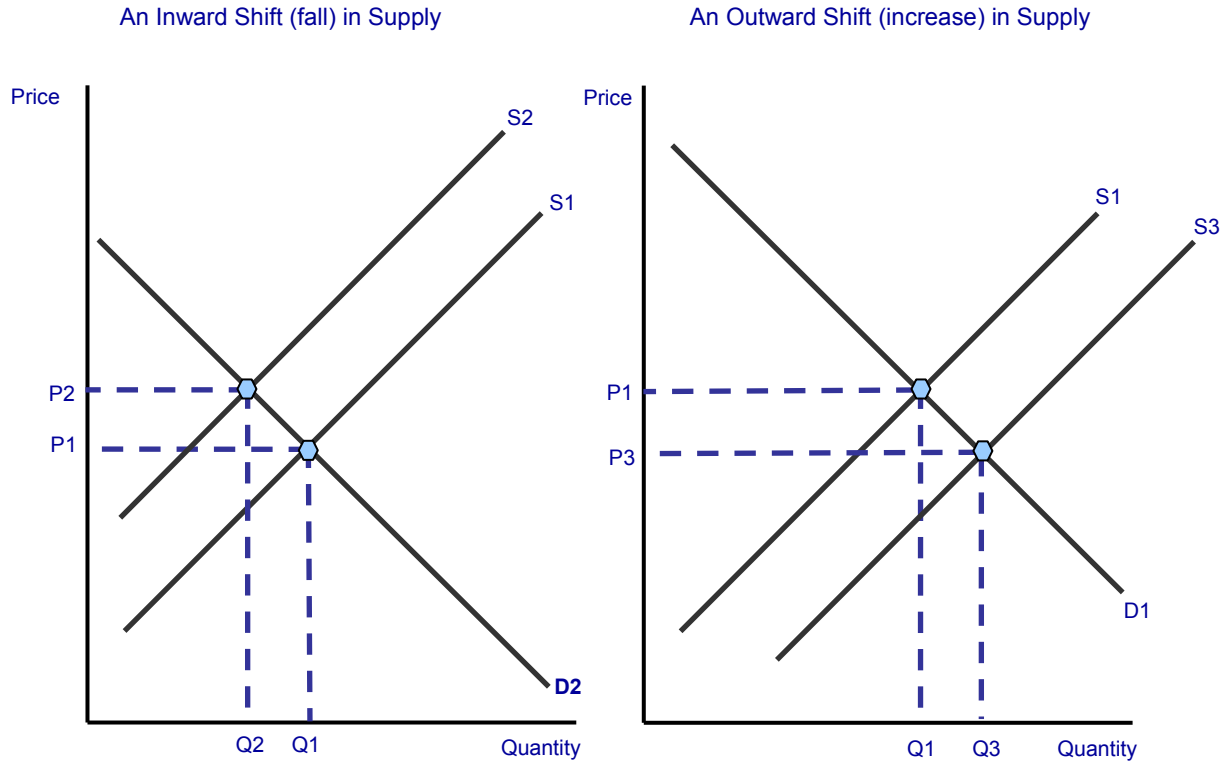
Changes in Market Demand and Equilibrium Price



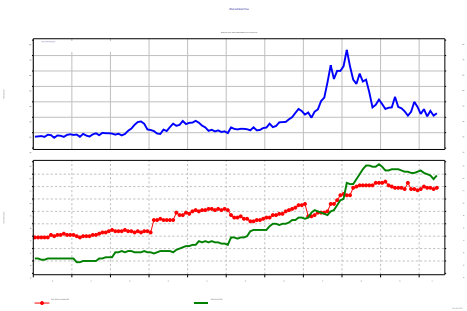
The outward shift in the demand curve causes an expansion along the supply curve and a rise in the equilibrium price and quantity. Firms in the market will sell more at a higher price and therefore receive more total revenue.

The reverse effects will occur when there is an inward shift of demand. A shift in the demand curve does not cause a shift in the supply curve! Demand and supply factors are assumed to be independent of each other although some economists claim this assumption is no longer valid!

Changes in Market Supply and Equilibrium Price



Rising costs feed through to higher bread prices



Premier Foods has announced that the price of its Hovis and Mothers Pride **branded breads** will rise following the surge in **world wheat prices**. It is another example of how **agri-flation** is feeding through to the prices of processed foods.

For Hovis, wheat is an important **variable cost**. Premier Foods buys about 1.3m to 1.4m tonnes of wheat a year. Premier needs to raise bread prices to recover further increases in **raw material costs**. In other words, it is banking on an ability to raise price to protect their **profit margins**.

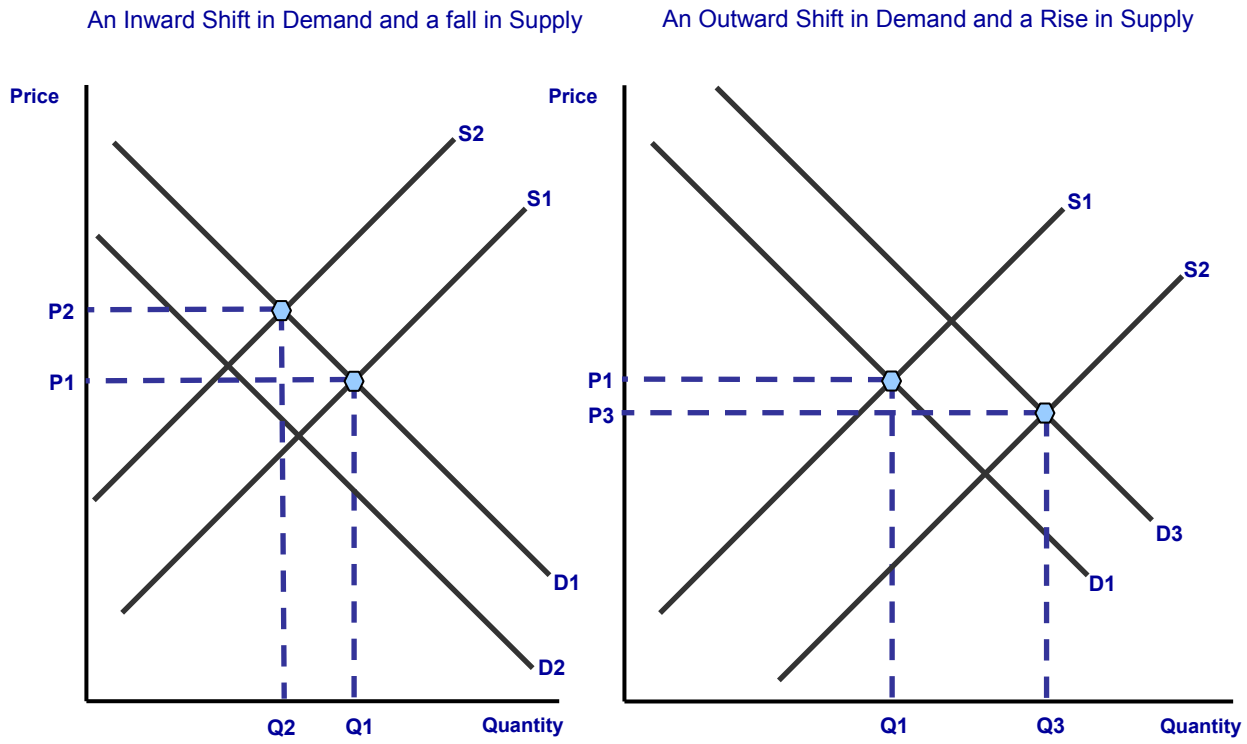
The effect on demand will depend on how other bread manufacturers respond and also the price elasticity of demand for bread in the market.

Source: Adapted from news reports, March 2008

Important note for the exams:

A shift in the supply curve does not cause a shift in the demand curve. Instead we move along (up or down) the demand curve to the new equilibrium position.

The equilibrium price and quantity in a market will change when there shifts in both market supply and demand. Two examples of this are shown in the next diagram:



In the left-hand diagram above, we see an inward shift of supply together with a fall in demand. Both factors lead to a fall in quantity traded, but the rise in costs forces up the market price.

The second example on the right shows a rise in demand from D1 to D3 but a much bigger increase in supply from S1 to S2. The net result is a fall in equilibrium price (from P1 to P3) and an increase in the equilibrium quantity traded in the market from Q1 to Q3.

Moving from one equilibrium to another

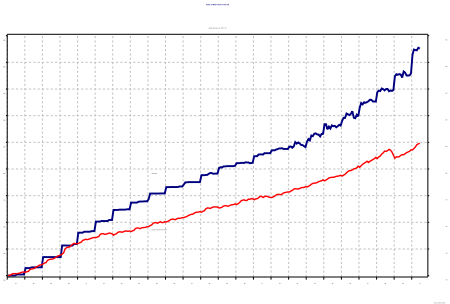
Changes in equilibrium prices and quantities **do not happen instantaneously**! The shifts in supply and demand outlined in the diagrams in previous pages are reflective of changes in conditions in the market. So an outward shift of demand (depending upon supply conditions) leads to a short term rise in price and a fall in available stocks. The higher price is an incentive for suppliers to raise their output (termed as an expansion of supply) causing a movement up the short term supply curve towards the new equilibrium point.

We tend to use these diagrams to illustrate movements in market prices and quantities – this is known as **comparative static analysis**. The reality in most markets and industries is more complex. For a start, many businesses have imperfect knowledge about their demand curves – they do not know precisely how consumer demand reacts to changes in price or the true level of demand at each and every price. Likewise, constructing accurate supply curves requires detailed information on production costs and these may not be readily available.

Regulated prices

Not all prices are set by the free market forces of supply and demand. In Britain, a number of prices are affected by the decisions of **industry regulators** – good examples are rail fares, the cost of postage stamps and water bills.

In the rail market, some of the fares are unregulated allowing train operating companies to set their own prices. But around half of the fares charged for UK rail travellers are determined by the rail regulator which applies an **Retail Price Index + 1% formula** – this means that fares can rise by the rate of retail price inflation plus 1% each year. The extra 1% is designed to provide extra revenue for investment in improving rail infrastructure and new rolling stock.



You can see from the chart above that average rail fares in the UK have grown faster than the overall consumer price index. The result is that the real cost or price of travel has increased over recent years.

Other examples of regulated prices are in telecoms and in the water industry. PostComm is the regulator which controls how much the Royal Mail can charge for postage stamps. OFWAT is the regulator for the water industry and every five years it announces a programme of planned price increases for water and sewerage bills.