

Edexcel (B) Economics A-level  
**Theme 2: The Wider Economic  
Environment**


**2.2 Firms, Consumers and Elasticities of  
Demand**

**2.2.1 Price elasticity of demand (PED)**


Notes




## **Price elasticity of demand**

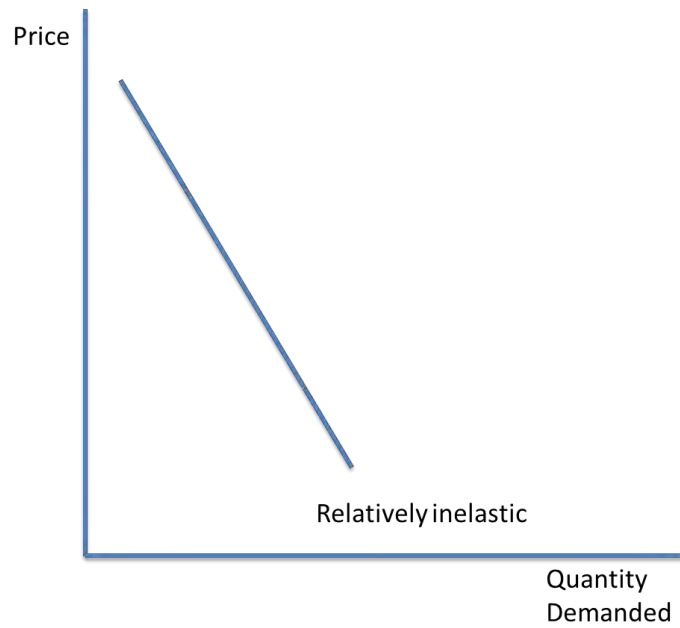
 The price elasticity of demand is the responsiveness of a change in demand to a change in price. The formula for this is:


$$PED = \frac{\% \Delta QD}{\% \Delta P}$$

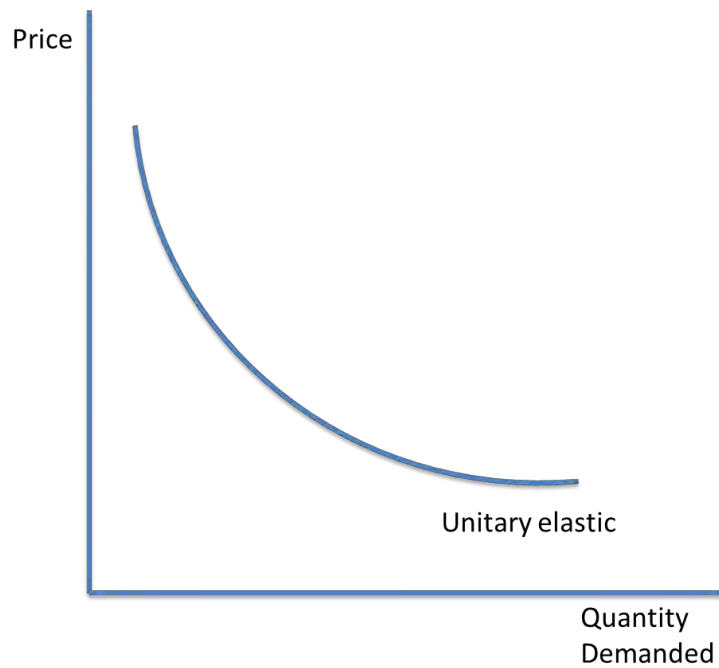
 A price elastic good is very responsive to a change in price. In other words, the change in price leads to an even bigger change in demand. The numerical value for PED is  $>1$ .




 A price inelastic good has a demand that is relatively unresponsive to a change in price. PED is  $< 1$ .




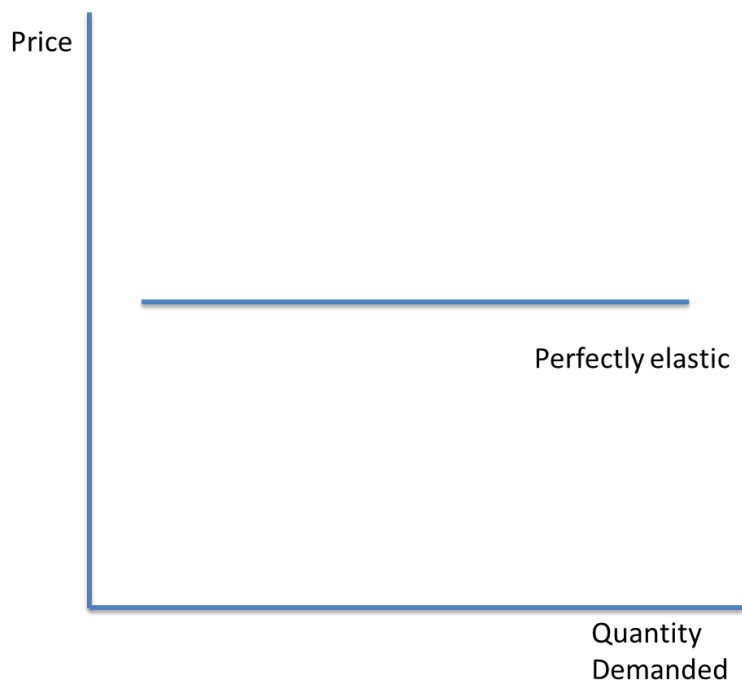
 A unitary elastic good has a change in demand which is equal to the change in price. PED = 1.




-  A perfectly inelastic good has a demand which does not change when price changes.  $PED = 0$ .



-  A perfectly elastic good has a demand which falls to zero when price changes.  $PED = \text{infinity}$ .



 If the price of bread increased by 20%, and the quantity demanded decreased by 15%, the PED of bread is:  $-15\% / 20\% = -0.75$ . Since the absolute value is less than 1 ( $-0.75 > -1$ ), bread is deemed price inelastic.

 **Factors influencing PED:**

**1) Necessity:**

A necessary good, such as bread or electricity, will have a relatively inelastic demand. In other words, even if the price increases significantly, consumers will still demand bread and electricity, because they need it. Luxury goods, such as holidays, are more elastic. If the price of flights increases, the demand is likely to fall significantly.

**2) Substitutes:**

If the good has several substitutes, such as Android phones instead of iPhones, then the demand is more price elastic. The elasticity can also change within markets. For example, the market for bread is less elastic than the market for white bread. This is because there are fewer substitutes for bread in general, but there are several substitutes for white bread. Hence, white bread is more price elastic. The closer and more available the substitutes are, the more price elastic the demand.

Elasticity also changes in the long and short run. In the long run, consumers have time to respond and find a substitute, so demand becomes more price elastic. In the short run, consumers do not have this time, so demand is more inelastic.

**3) Addictiveness or habitual consumption:**

The demand for goods such as cigarettes is not sensitive to a change in price because consumers become addicted to them, and therefore continue demanding the cigarettes, even if the price increases.

**4) Proportion of income spent on the good:**

If the good only takes up a small proportion of income, such as a magazine which increases in price from £1.50 to £2, demand is likely to be relatively price inelastic. If the good takes up a significant proportion of income, such as a car which increases in price from £15,000 to £20,000, the demand is likely to be more price elastic.

**5) Durability of the good:**




A good which lasts a long time, such a washing machine, has a more elastic demand because consumers wait to buy another one.

**6) Peak and off-peak demand:**

During peak times, such as 9am and 5pm for trains, the demand for tickets is more price inelastic.



 **PED and total revenue:**

-  Total revenue is equal to average price times quantity sold.  $TR = P \times Q$
-  If a good has an inelastic demand, the firm can raise its price, and quantity sold will not fall significantly. This will increase total revenue.
-  If a good has an elastic demand and the firm raises its price, quantity sold will fall. This will reduce total revenue.

