

# Apple's price elasticity

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## Price Elasticity

Q.: Suppose the price of apples rises from \$3 a pound to \$3.50 and your consumption of apples drops from 35 pounds of apples a month to 20 pounds of apples. Calculate your price elasticity of demand of apples. What can you say about your price elasticity of demand of apples? Is it Elastic, Inelastic, or Unitary Elastic?

A.: The concept of the price elasticity of demand (characterized by the elasticity coefficient  $E_d$ ) can give an idea about the responsiveness of the demand to any changes of the price for goods or services.

### The demand can be:

- perfectly inelastic, when a change in price does not cause any changes in quantity demanded ( $E_d = 0$ ),
- relatively inelastic, when a percentage change in price causes less percentage change in quantity demanded ( $E_d < 1$ ),
- relatively elastic, when a percentage change in price causes a greater percentage changes in quantity demanded ( $E_d > 1$ ),
- unitary elastic, when a percentage change in price causes the same percentage change in quantity demanded ( $E_d = 1$ ),
- perfectly elastic, when a change in price causes total loss of demand ( $E_d = \infty$ ).

In terms of an elastic demand, any increase of the price causes decrease in total revenues. Thus, the revenues that seller could receive before the price was increased totaled:  $TR_1 = 35 \times 3 = 105$  \$, and the revenues after the

price became \$3.5 are:  $TR_2 = 20 \times 3.5 = 70$  \$.  $TR_1 > TR_2$  in terms of an increase in price. Therefore, the demand is elastic.

To calculate the elasticity coefficient, it is possible to use Symmetric Midpoint Formula, according to which the coefficient  $E_d$  can be defined as the ratio of average percentage change in quantity demanded ( $\% \Delta Q$ ) and average percentage change in price ( $\% \Delta P$ ). In our case, midpoint percentage change for quantity is  $\% \Delta Q = (20-35)/((20+35)/2) = -54.54\%$ , and midpoint percentage change for price is  $\% \Delta P = (3.5-3)/((3.5+3)/2) = 15.38\%$ . Therefore,  $E_d = \% \Delta Q / \% \Delta P = -54.54\% / 15.38\% = -3.546$ . Since  $|E_d| > 1$ , the demand is relatively elastic.

## References

- Abowd, J. M. (1999, May 12). The Concept of Elasticity. Cornell University.
- Retrieved April 3, 2009: .