# 4.2 Elasticity

Wednesday, 12 October 2022 17:04

| | |
|---|---|
| Summary | • Slope<br>• Elasticity<br>  ○ Short term and long term elasticity |
| • What are the two ways to calculate price sensitivity? | There are two ways to calculate Price Sensitivity:<br><br>1. Slope<br>2. Elasticity |
| • Slope formula<br><br>• It's value is always:<br>  • positive or negative? | **Price sensitivity**<br><br>Slope –<br>• Measures how demand changes in response to a price change<br><br>$$\partial(p_1, p_2) = \frac{D(p_2) - D(p_1)}{p_2 - p_1}$$<br><br>• $p_1 > p_2$ implies that $D(p_1) < D(p_2)$, hence Slope is always negative.<br>• Slope can be used as a local estimator of demand change for a small change in price.<br><br>• Slope,<br><br>$$\boldsymbol{\partial} = \frac{D(p_2) - D(p_1)}{p_2 - p_1}$$<br><br>• $\partial$ is always negative. |
| • Elasticity formula<br><br>• Unit of elasticity | **Price sensitivity**<br><br>Elasticity<br>• Ratio of the percentage change in demand to the percentage change in price<br><br>$$\epsilon(p_1, p_2) = -\frac{[d(p_2) - d(p_1)]/d(p_1)}{(p_2 - p_1)/p_1}$$<br><br>• Unlike slope, elasticity is independent of units<br><br>• Elasticity of 2 means that a 10% reduction in price will yield a 20% increase in sales<br><br>• Demand elasticity,<br><br>$$\varepsilon = \frac{\%\ change\ in\ demand}{\%\ change\ in\ price}$$<br><br>$$\Rightarrow \varepsilon = \left| \frac{\frac{D(p_2) - D(p_1)}{D(p_1)}}{\frac{p_2 - p_1}{p_1}} \right|$$<br><br>• Elasticity may also depend on time.<br><br>1. Short term elasticity<br>2. Long term elasticity |
| • What does high and low value of elasticity mean in terms of short and long term elasticity? | **Elasticity**<br><br>| Product | Short term elasticity | Long term elasticity |<br>|---|---|---|<br>| Salt | 0 | 0.1 |<br>| Airline Travel | 0.1 | 2.4 |<br>| Petrol | 0.2 | 0.7 |<br>| Movies | 0.9 | 3.7 |<br>| A two-wheeler | 1.2 | 0.2 |<br><br>• Elasticity<br><br>  ○ If **high**, means, **alternatives are available**.<br>  • Short term: in the short term period<br>  • Long term: in the long term period<br><br>  ○ If **low**, means, there is an **urgency and no alternative**.<br>  • Short term: in the short term period<br>  • Long term: in the long term period |
| | |
| | |