



Elasticity



Demand elasticity

- The extent to which a change in price causes a change in the quantity demanded
- Demand is elastic when change in price causes large change in quantity demanded
- Inelastic when there's a small change in QD
- Unit elastic when change in price causes proportional change in QD



Total Expenditures Test

- Used to estimate elasticity
- $\text{Price} \times \text{QD} = \text{Total Expenditures}$
- If change in price and expenditures are inverse, demand is elastic
- If move in same direction, inelastic
- No change, unit elastic



Formula

- Elasticity = $\frac{\% \Delta \text{ of quantity demanded}}{\% \Delta \text{ price}}$
- Elasticity = $\frac{(QD_{\text{NEW}} - QD_{\text{OLD}}) / QD_{\text{OLD}}}{(P_{\text{NEW}} - P_{\text{OLD}}) / P_{\text{OLD}}}$
- If > 1 then Demand is Price Elastic (Demand is sensitive to price changes)
- If $= 1$ then Demand is Unit Elastic
- If < 1 then Demand is Price Inelastic (Demand is not sensitive to price changes)



What determines elasticity?

- Demand is elastic if the answer to the following is YES
 - Can the purchase be delayed?
 - Are there substitute goods?
 - Does this purchase use a large portion of income?



Elasticity of Supply

- Is elastic when a small increase in price leads to larger increase in output
- Inelastic when small increase in price causes little change
- Unit elastic when a change in price causes a proportional change in supply



What determines elasticity in supply?

- Related to how quickly a producer can act when a change in price occurs
- If adjustments to production quick, supply is elastic
- If production requires advance planning, inelastic
- If substitution easy—elastic, if not--inelastic