

Micro-Economics

Price Elasticity of Demand

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PRICE ELASTICITY OF DEMAND

- Meaning
- Formula
- Types
- Factors affecting Ped
- Methods of measuring Ped



- It's the degree of responsiveness of demand to change in price

Formula



- $P_{edx} = \frac{\% \text{ change in } D_x}{\% \text{ change in } P_x}$
- P_{ed} is Always Negative

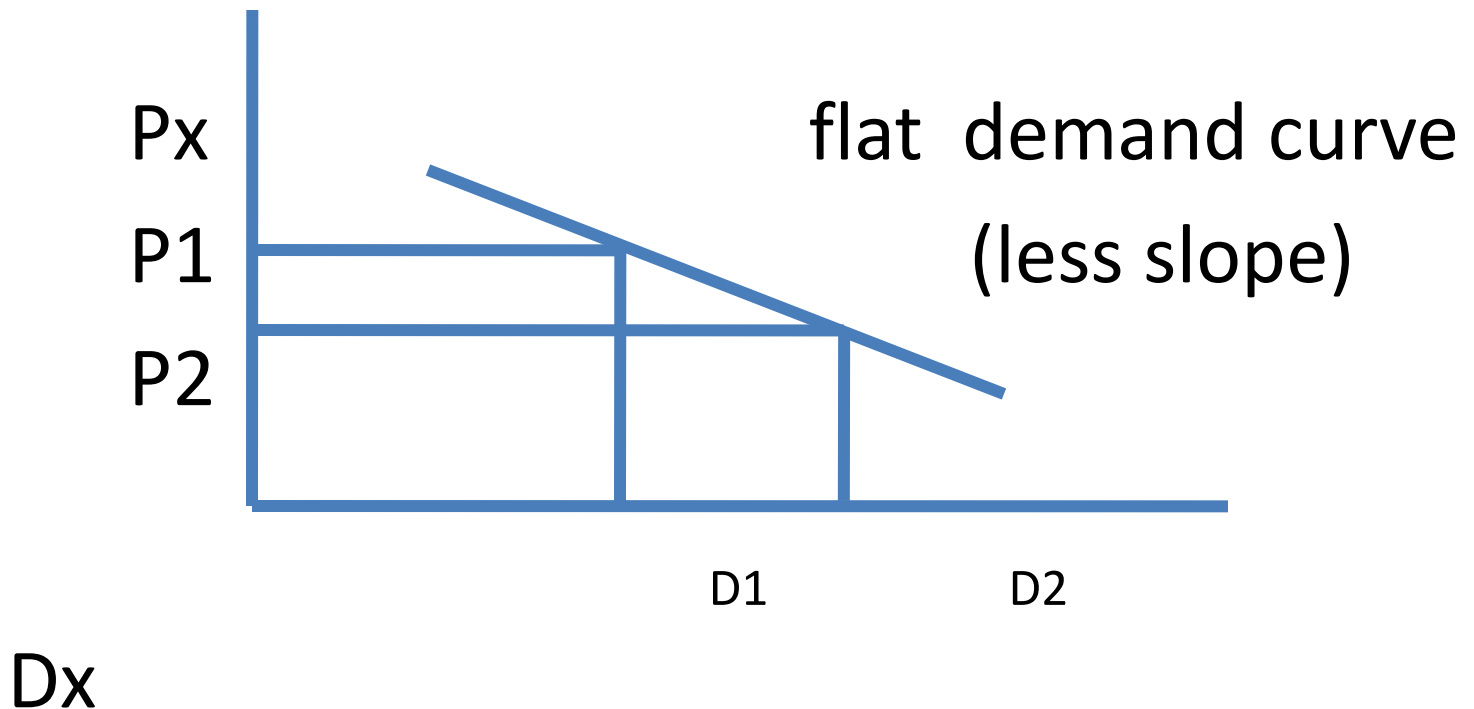
Types

- 1. $Ped > 1$
- 2. $Ped < 1$
- 3. $Ped = 1$
- 4. $Ped = 0$
- 5. $Ped = \infty$



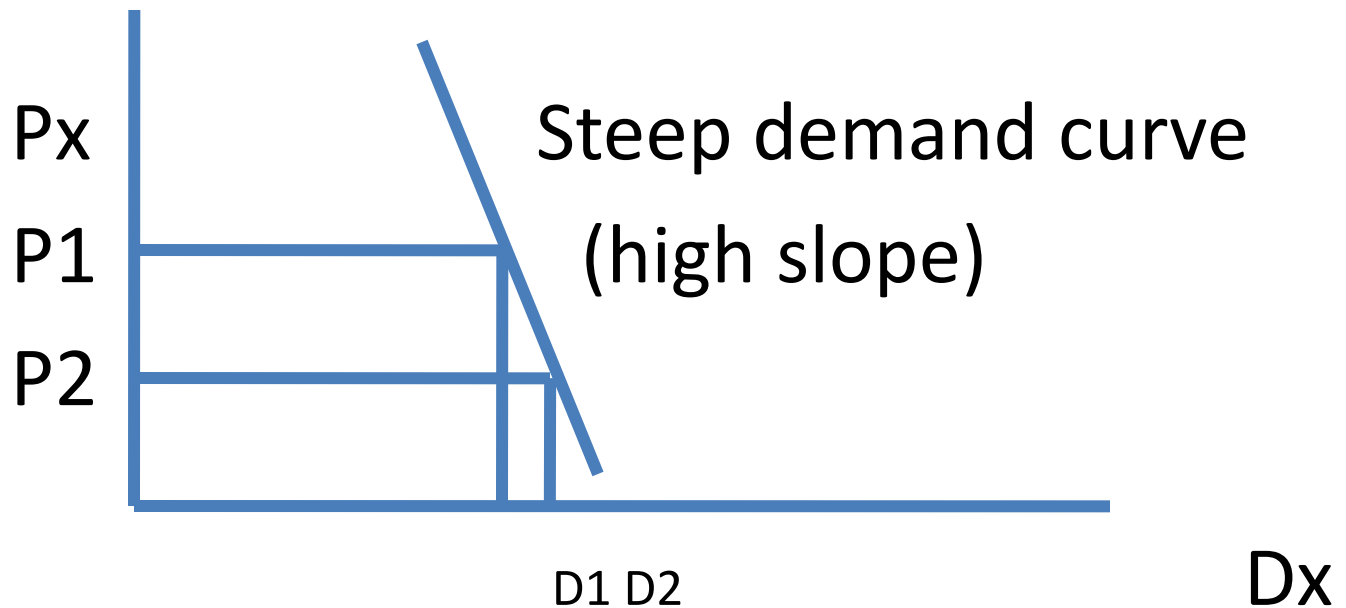
1. $P_{ed} > 1$

Condition: $(\% \triangle Dx > \% \triangle Px)$



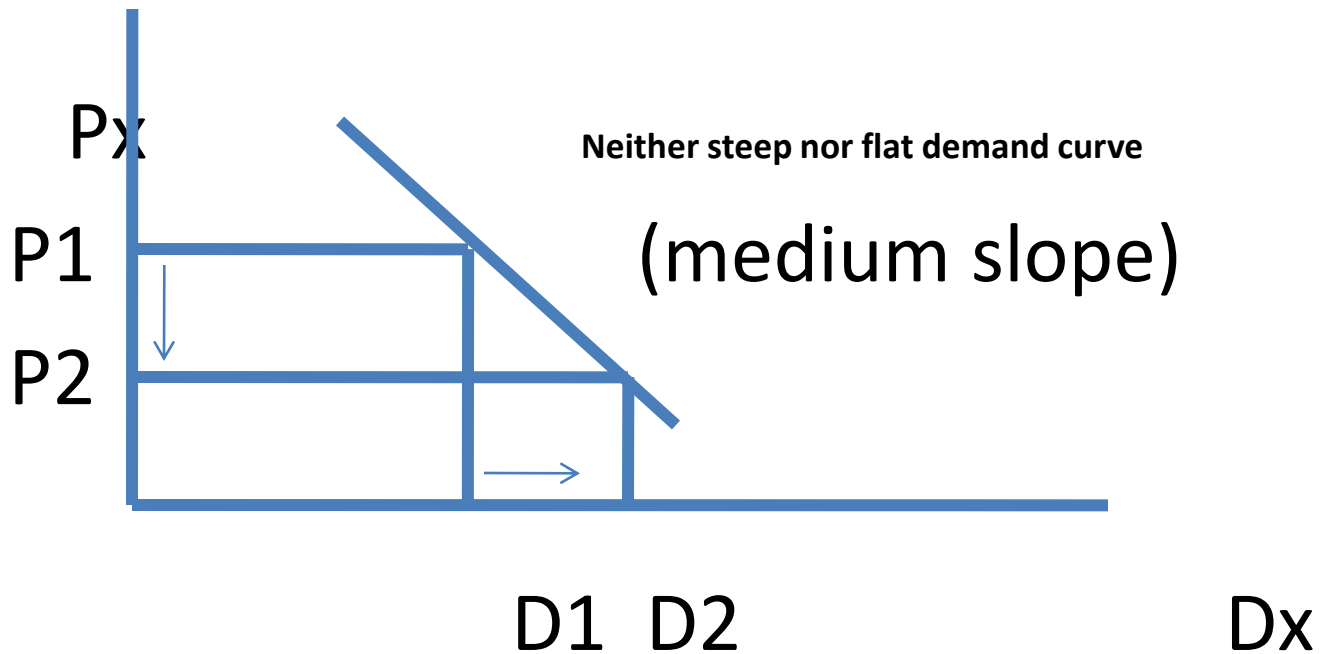
2. $P_{ed} < 1$

Condition: $(\% \triangle Dx < \% \triangle Px)$




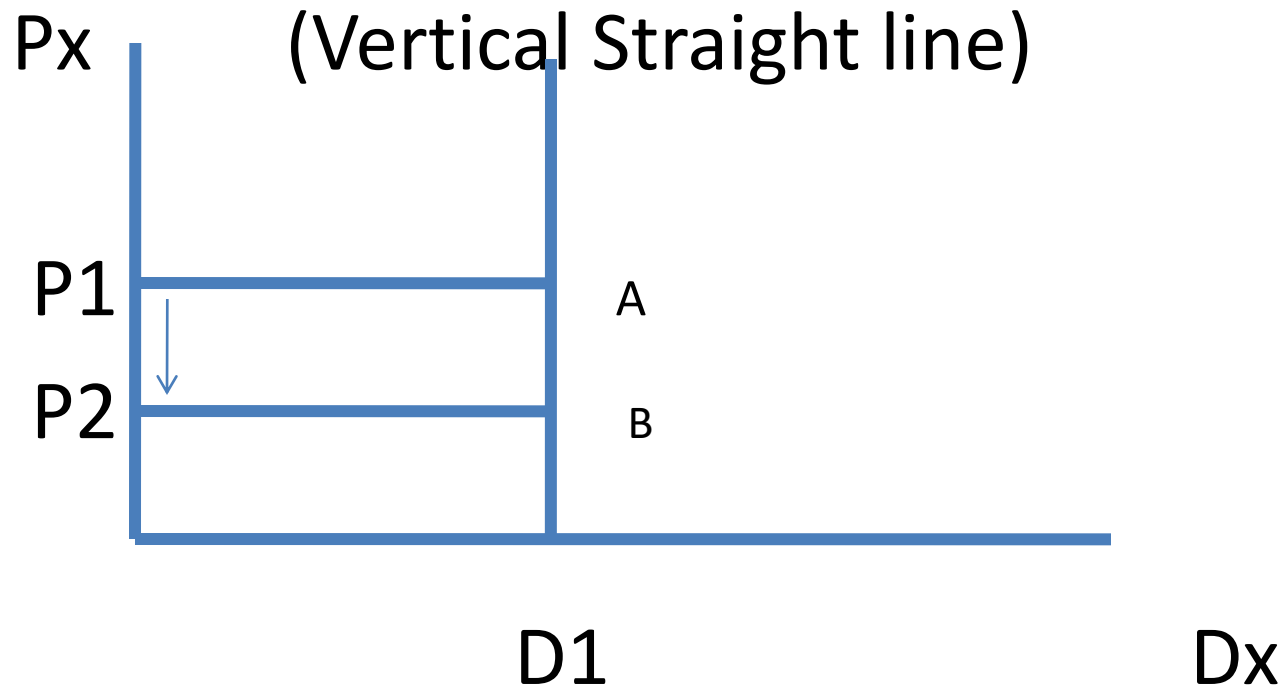
3. $Ped = 1$

Condition: $(\% \triangle Dx = \% \triangle Px)$



4. $P_{ed} = 0$

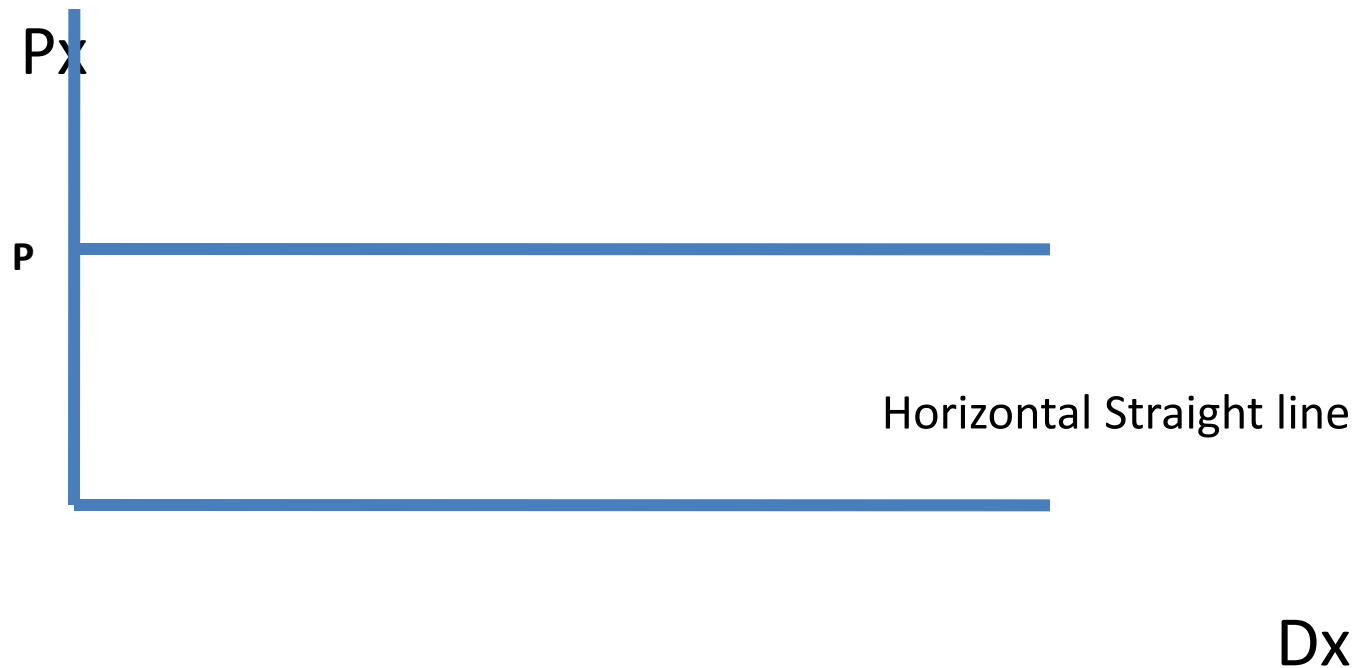
Condition: (%  $D_x = 0$)





5. $P_{ed} = \alpha$

Condition: (A v. small ΔP_x brings v. large ΔD_x)



Factors affecting Ped



- 1. Nature of the product
- 2. Number of substitutes
- 3. Durability
- 4. Uses
- 5. Time Period
- 6. Price level
- 7. Place of product in consumer's budget

Methods of measuring Ped



1. Percentage method
2. Arc method (average method/ midpoint)
3. Point method (geometric method)
4. Total outlay method
(Total expenditure method)

Percentage method



If the price of the product drops from **Rs. 10** per unit to **Rs. 5** per unit and as a result the demand rises from **100 units** to **140 units**, find out the Ped.

$$\frac{\text{D}}{\text{D}} \times \frac{\text{P}}{\text{P}}$$

Arc method



If the price of the product drops from **Rs. 10 per unit** to **Rs. 5 per unit** and as a result the demand rises from **100 units** to **140 units**, find out the Ped.

$$\frac{\text{D}}{\text{Do+Dn}} \times \frac{\text{Po+Pn}}{\text{P}}$$

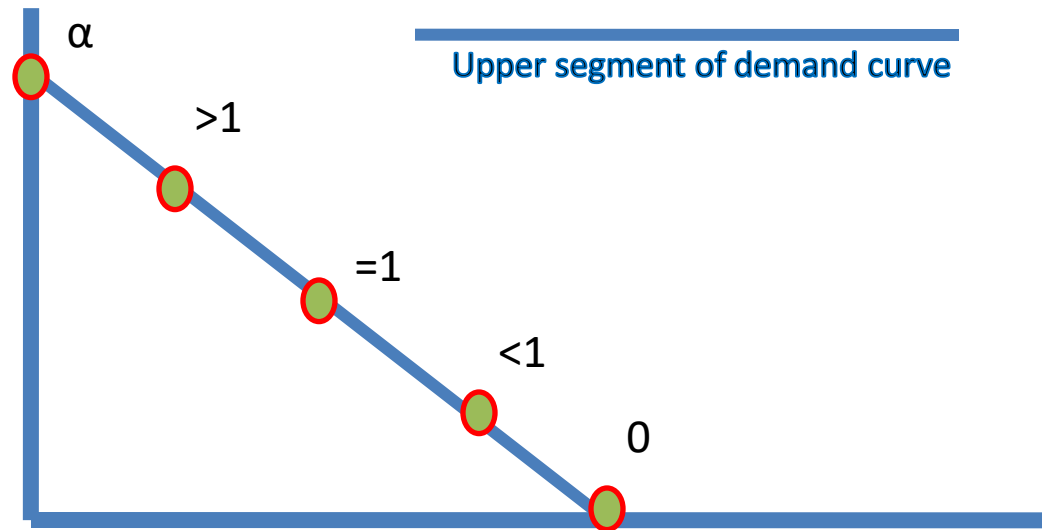
3. Point method



$P_{ed} =$

Lower segment of demand curve

Upper segment of demand curve



Total Outlay Method



- **Price and TE** (Inverse Relation):
Elastic Demand
- **Price and TE** (Direct Relation):
Inelastic Demand
- **TE Constant:** Unitary Elastic



When $P_{ed}=1$ (demand is unitary elastic),
the **demand curve** is a **rectangular
hyperbola**