

CLASS XI | CBSE | 2025-26

INTRODUCTORY

MICROECONOMICS

CHAPTER 6

Price Elasticity of Demand

Made by SMIT SIR

PGT Commerce | Class XI Microeconomics

smitsircommerce.netlify.app

Mobile: 6353709585

Chapter Overview

What You Will Learn:

1. Meaning of Price Elasticity of Demand (PED)
2. Types/Degrees of Elasticity with diagrams
3. Measurement — Percentage Method and Total Expenditure Method
4. Factors affecting Price Elasticity of Demand
5. Numericals on PED

Exam Importance: PED numericals asked every year (3-4 marks). Types of elasticity with diagrams = 4-6 marks. Total Expenditure method = 3 marks frequently.

1. MEANING OF PRICE ELASTICITY OF DEMAND

DEFINITION: Price Elasticity of Demand (PED)

Price Elasticity of Demand measures the DEGREE OF RESPONSIVENESS of quantity demanded to a change in price. It tells us by what percentage quantity demanded changes when price changes by 1%.

$$Ed = \% \text{ Change in Quantity Demanded} / \% \text{ Change in Price} = (\Delta Q/Q \times 100) / (\Delta P/P \times 100) = (\Delta Q/\Delta P) \times (P/Q)$$

Note: Ed is always negative (inverse relationship) — but expressed as positive by convention.

2. TYPES / DEGREES OF PRICE ELASTICITY

Type	Ed Value	Meaning	Diagram Shape	Examples
Perfectly Elastic	$Ed = \infty$	Any tiny price rise → demand drops to zero	Horizontal straight line	Perfect substitutes in perfect competition
Perfectly Inelastic	$Ed = 0$	Price change has NO effect on demand	Vertical straight line	Life-saving medicine, water (absolute necessity)
Unitary Elastic	$Ed = 1$	% qty change = % price change	Rectangular hyperbola	Some necessities with moderate substitutes
Relatively Elastic	$Ed > 1$	% qty change > % price change	Flatter demand curve	Luxury goods, goods with many substitutes
Relatively Inelastic	$Ed < 1$	% qty change < % price change	Steeper demand curve	Necessities, addictive goods, petrol, salt

MEMORY TRICK

TYPES OF Ed: "PI-U-EI" → Perfectly Inelastic (0) → Inelastic (<1) → Unitary (1) → Elastic (>1) → Perfectly Elastic (∞) FLAT curve = MORE elastic. STEEP curve = LESS elastic (inelastic). Luxury goods = Elastic. Necessities = Inelastic.

3. MEASUREMENT — PERCENTAGE METHOD (Numericals)

Numerical 1:

Price rises from Rs.10 to Rs.12. Quantity falls from 100 to 80 units. Find Ed.

$$\Delta P = 12 - 10 = 2 \mid \Delta Q = 80 - 100 = -20 \mid P = 10 \mid Q = 100$$

$$\% \text{ Change in Qty} = (-20/100) \times 100 = -20\%$$

$$\% \text{ Change in Price} = (2/10) \times 100 = +20\%$$

$$Ed = |-20/+20| = 1 \rightarrow \text{UNITARY ELASTIC demand.}$$

Numerical 2:

Price falls from Rs.20 to Rs.16. Quantity rises from 200 to 280 units. Find Ed. Is demand elastic or inelastic?

$$\Delta P = 16 - 20 = -4 \mid \Delta Q = 280 - 200 = +80 \mid P = 20 \mid Q = 200$$

$$\% \text{ Change in Qty} = (80/200) \times 100 = 40\%$$

$$\% \text{ Change in Price} = (4/20) \times 100 = 20\%$$

$$Ed = 40/20 = 2 > 1 \rightarrow \text{RELATIVELY ELASTIC demand.}$$

4. TOTAL EXPENDITURE METHOD

When Price Falls:	Change in Total Expenditure (TE=P×Q)	Elasticity
TE Increases	Qty rises MORE than price falls	Ed > 1 (Elastic)
TE Remains Same	Qty change exactly offsets price change	Ed = 1 (Unitary)
TE Decreases	Qty rises LESS than price falls	Ed < 1 (Inelastic)

MEMORY TRICK

TE METHOD: Price falls: TE UP → ELASTIC | TE SAME → UNITARY | TE DOWN → INELASTIC (When price rises, reverse the above conclusions.)

5. FACTORS AFFECTING PRICE ELASTICITY OF DEMAND

Factor	Effect on Ed	Example
Availability of substitutes	More substitutes → Higher Ed (more elastic)	Tea has many substitutes → elastic
Nature (necessity/luxury)	Necessity → Inelastic Luxury → Elastic	Salt = inelastic; diamond = elastic
Proportion of income spent	Higher proportion → More elastic	Car = elastic; matchbox = inelastic
Number of uses	More uses → More elastic	Electricity = elastic; wedding dress = inelastic
Time period	Longer time → More elastic	Short run less elastic than long run
Habit/Addiction	Addictive → Inelastic	Cigarettes, alcohol = inelastic

EXAM-ORIENTED QUESTIONS

1-Mark Questions

Q1. Define Price Elasticity of Demand.

Ans. $PED = \% \text{ change in Qty Demanded} / \% \text{ change in Price}$. It measures degree of responsiveness of demand to price change.

Q2. What is the value of E_d for perfectly inelastic demand?

Ans. $E_d = 0$ (zero). Price change has absolutely no effect on quantity demanded.

Q3. What is the shape of demand curve when E_d is infinite?

Ans. Horizontal straight line — perfectly elastic demand curve.

Q4. If price falls and total expenditure also falls, what is the nature of demand?

Ans. Demand is INELASTIC ($E_d < 1$).

Q5. Give two examples of goods with perfectly inelastic demand.

Ans. Life-saving medicines (insulin for diabetics), water for basic survival.

CHAPTER SUMMARY

KEY POINTS:

1. $E_d = \% \text{ change Qty} / \% \text{ change Price} = (\Delta Q / \Delta P) \times (P/Q)$.
2. $E_d = 0$ (perfectly inelastic) | $E_d = \infty$ (perfectly elastic) | $E_d = 1$ (unitary).
3. $E_d > 1$ = Elastic (flat DD curve) | $E_d < 1$ = Inelastic (steep DD curve).
4. TE method: Price falls $\rightarrow$ TE rises = Elastic | TE same = Unitary | TE falls = Inelastic.
5. Factors: More substitutes, luxury nature, long time period $\rightarrow$ higher E_d .
6. Necessities, addictive goods, goods with few substitutes $\rightarrow$ lower E_d (inelastic).