

CHAPTER-5: ELASTICITY OF DEMAND

Concept of Elasticity of Demand:

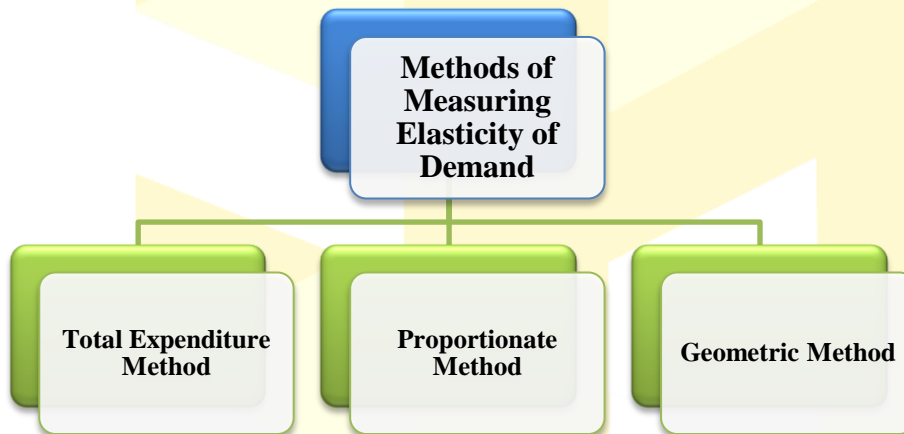
“The elasticity of demand measures the responsiveness of the quantity demanded of a good, to change in its price, price of other goods and changes in consumer’s income” - *Dooley*

- a) When change in quantity demanded is measured with respect to change in price of the commodity, it is called **Price Elasticity of Demand**.
- b) When change in quantity demanded is measured with respect to change in income of the buyers, it is called **Income Elasticity of Demand**.
- c) When change in quantity demanded of one commodity is measured with respect to change in the price of the commodity, it is called **Cross Elasticity of Demand**.

Price elasticity of demand and its measurement:

Price elasticity of demand may be defined as the percentage change in the quantity demanded of a commodity divided by the percentage change in price of that commodity.

It can be measured by three methods:



- a) **Total Expenditure Method**- Evolved by **Marshall**

Situation	Δ in Price	Δ in Qty	Δ in Expenditure	Elasticity of demand
A	↓	↑	Constant	Ed = 1 (Unitary elastic) Ed > 1 (Greater

B	↓	↑	Increases	than unity)
C	↓	↑	Decreases	$E_d < 1$ (Less than unity)

b) **Proportionate / Percentage Method**- Suggested by Marshall

$$E_d = (-) \frac{\text{Proportionate change in Quantity demanded}}{\text{Proportionate change in Price}}$$

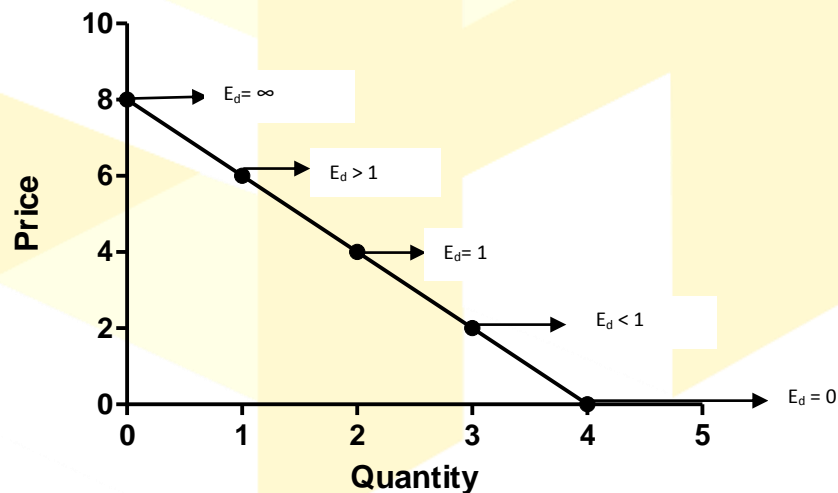
$$= (-) \frac{Q_2 - Q_1}{Q_1} / \frac{P_2 - P_1}{P_1}$$

$$= (-) \frac{\Delta Q}{Q_1} / \frac{\Delta P}{P_1}$$

$$= (-) \frac{\Delta Q}{\Delta P} \cdot \frac{Q_1}{P_1}$$

c) **Geometric Method**-

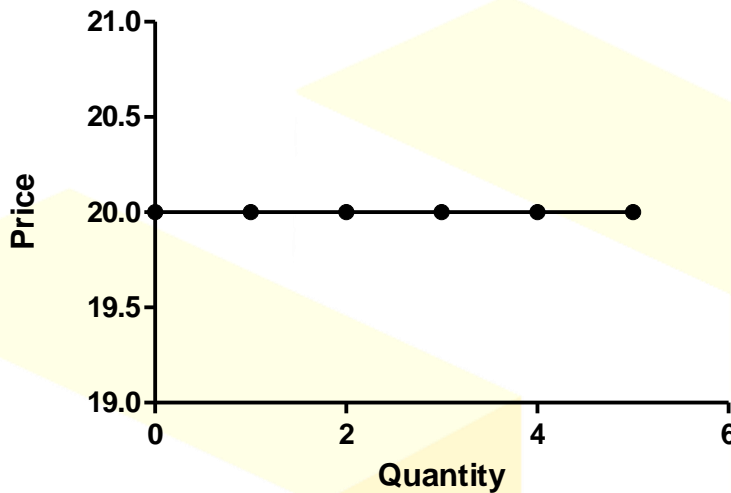
- Also called 'Point method of measuring elasticity of demand.'
- Measures elasticity of demand at different points on the demand curve.



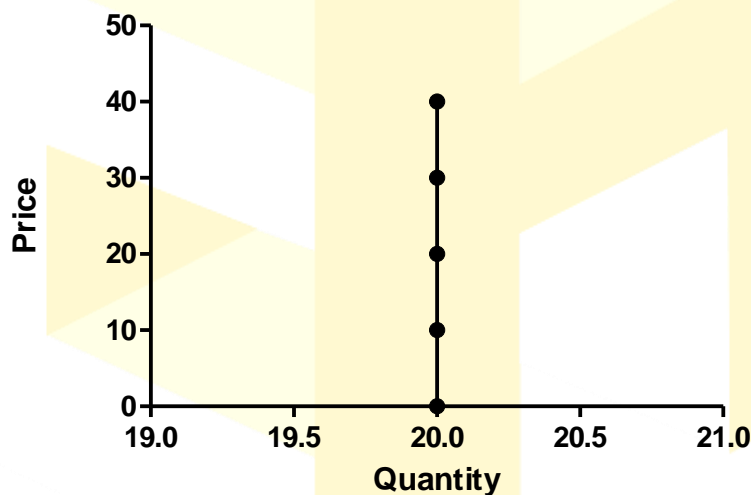
$$E_d = \frac{\text{Lower segment}}{\text{Upper segment}}$$

Degree of Price Elasticity of Demand:

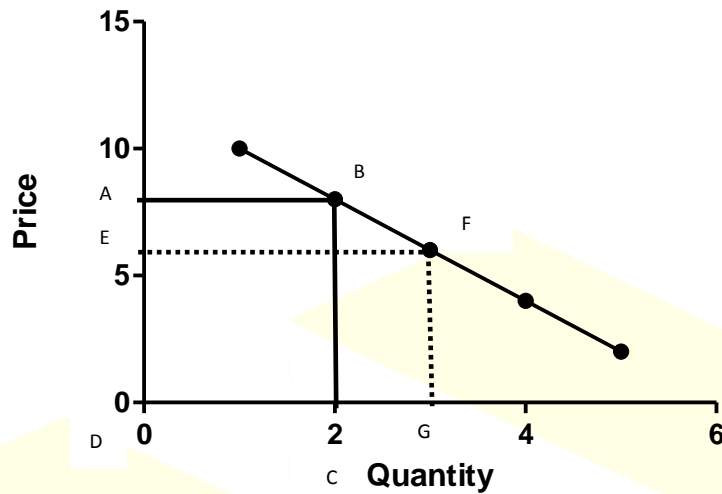
Perfectly Elastic Demand- Demand is infinite at the prevailing price. A slightest rise in price causes the quantity demanded of the commodity to fall to zero.



Perfectly Inelastic Demand- A change in price causes no change in the quantity demanded. It is a situation where even substantial changes in price leave the demand unaffected.

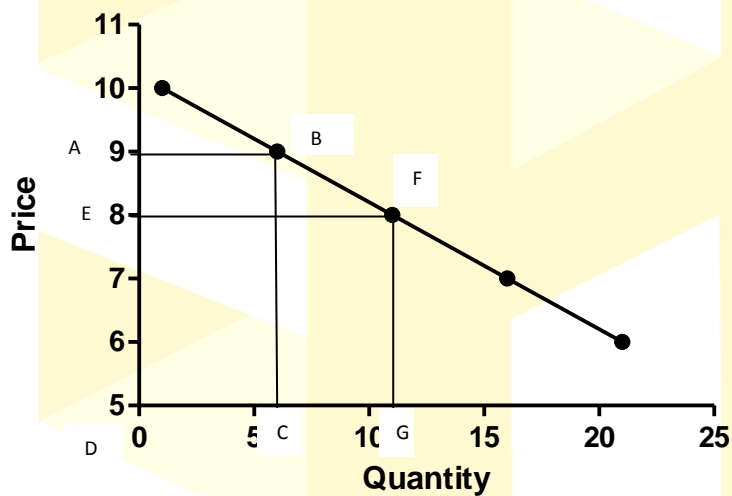


Unitary Elastic Demand- Change in quantity demanded in response to change in price of the commodity is such that total expenditure on the commodity remains constant.



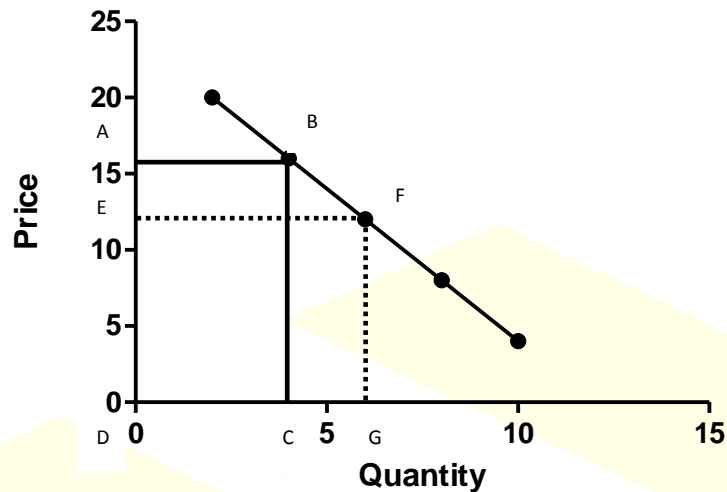
Area ABCD = Area DEFG

Greater than Unitary Elastic- Situation when change in quantity demanded in response to change in price of the commodity is such that total expenditure on the commodity increases when price decreases and vice versa.



Area ABCD < Area DEFG

Less than Unitary Elastic- Situation when change in quantity demanded in response to change in price of the commodity is such that total expenditure on the commodity decreases when price falls and vice versa.



Area ABCD > Area DEFG

Unitary Elasticity of Demand at all points of Demand Curve- A special case:

Rectangular hyperbola is a curve under which all rectangular areas are equal. This implies that total expenditure is equal. Hence it can be concluded that elasticity of demand=1 at all points of rectangular hyperbola.

Factors Determining Price Elasticity of Demand:

a) Nature of Commodity-

Nature of commodity	Elasticity
(1) Necessaries	Less than 1
(2) Luxuries	Greater than 1
(3) Comforts	Neither very elastic nor very inelastic
(4) Jointly demanded goods	Inelastic demand

b) **Availability of Substitutes-**

Availability of Substitutes	Elasticity
(1) Yes	Relatively more elastic
(2) No	Inelastic demand

c) **Different uses of commodity-**

(1) Commodity with more uses	Elastic Demand
(2) Commodity with less uses	Inelastic Demand

d) **Postponement of the Use-**

(1) Consumption can be postponed	Elastic Demand
(2) Consumption can't be postponed	Inelastic Demand

e) **Income of Consumer-**

Income	Elasticity of demand
Very High	Inelastic demand
Middle	Elastic demand
Very Low	Inelastic demand

f) **Habit of Consumer-** If a person is habitual to a commodity, then the demand is inelastic.

g) **Proportion of income spent on a commodity:-**

Proportion	Elasticity of demand
Small proportion	Inelastic demand
Large proportion	Elastic demand

h) **Price level-**

(1) High Price Level	High Elasticity of demand
(2) Low Price Level	Low Elasticity of demand

i) **Time Period-**

Short Period	Inelastic demand
Long Period	Elastic demand