

Basics of market demand and supply

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Basics of Market Demand and Supply

- Demand for a commodity is a function of its price, consumers' income, taste and preferences, price of substitute products, complementary goods geographical and policy factors.
- These factors are also termed as determinants of demand.
- Price is a singular most important factor
- Hence it is essential to study the relationship between quantity demanded and its price.
- Demand analysis is the starting point of understanding the working of the market
- According to the law of demand, quantity demanded varies inversely with the price.

Demand function and schedule

- Under the law of demand, it is assumed that all factors other than price remain constant

- A demand function is as follows

$$Q_{dx} = f(P_x)$$

- Linear demand function is expressed as

$$Q_{dx} = a - bP_x$$

a = quantity demanded when price is zero. a is a **constant** and is called **intercept parameter**. The demand curve intercepts the X axis at quantity a

b = correlation coefficient between quantity demanded and price.

b is **negative** because of inverse relation between price and quantity demanded

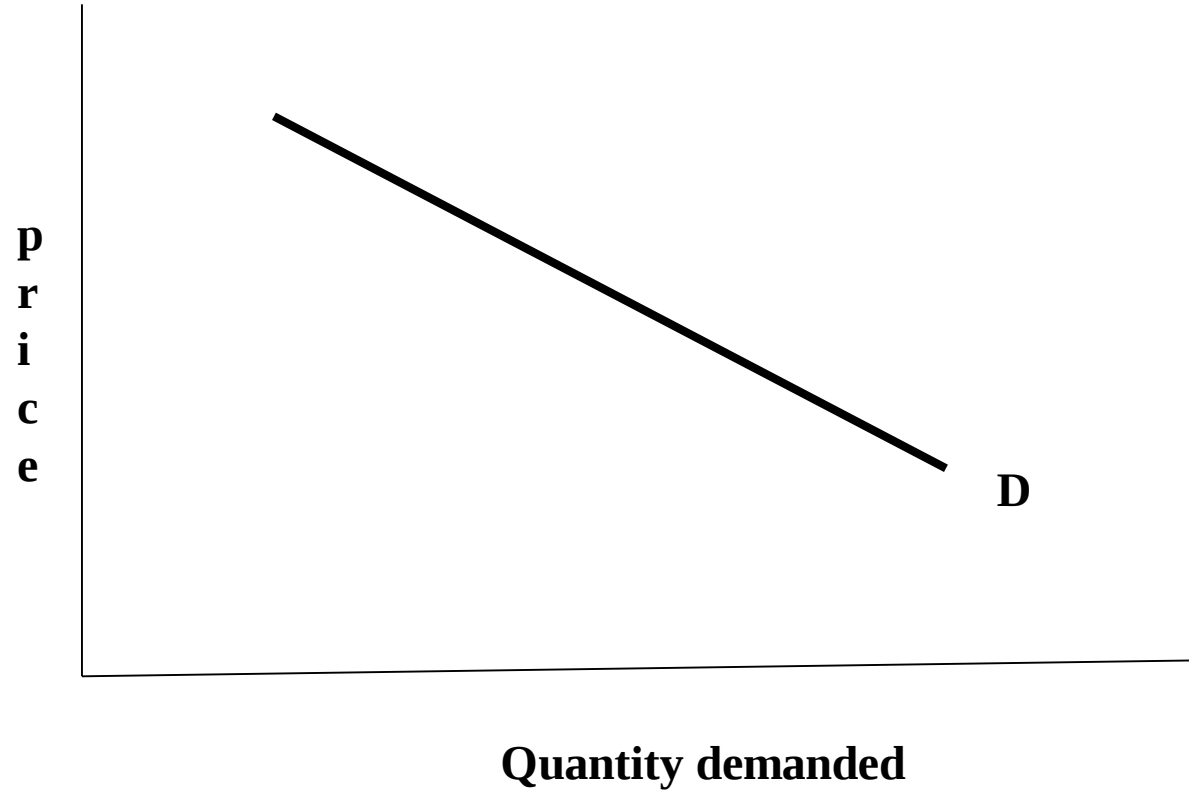
$$\frac{\Delta Q_{dx}}{\Delta P_x}$$

Demand schedule

- $Q_{dx} = 100 - 10P_x$

Price per unit Rs	Quantity demanded in units $Q_{dx} = 100 - 10P_x$
0	100
1	90
2	80
3	70
4	60
5	50
6	40

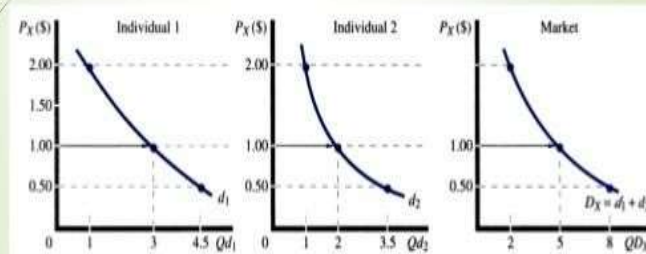
Demand curve



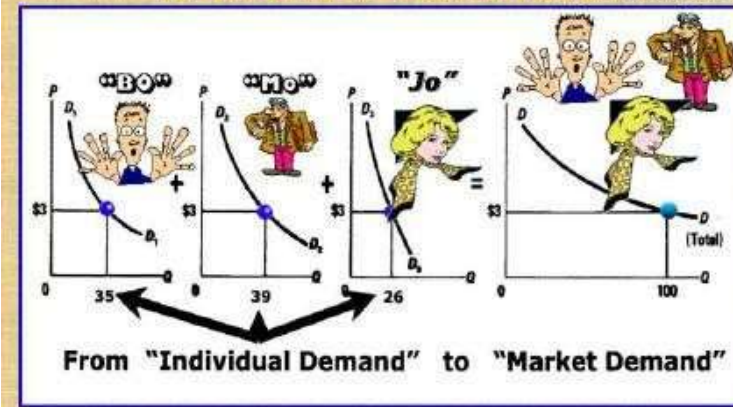
Individual and Market demand

Market Demand Curve

- Horizontal summation of demand curves of individual consumers



Individual Demand to Market Demand



supply function and schedule

- The various quantities of commodity which a producer will offer for sale at various corresponding prices is called **supply**
- **According to the law of supply there is a direct relationship between quantity supplied of a commodity and its price**
- The typical supply curve slopes upward – a positive slope
- At higher prices the producer's are more willing to supply the that product
- The producers are able to cover the high marginal cost of producing additional output
- The relationship between price and supply is direct

Supply function and schedule

- The price and supply function

$$Q_{sx} = f(P_x)$$

- A linear supply function

$$Q_{sx} = -c + dP_x$$

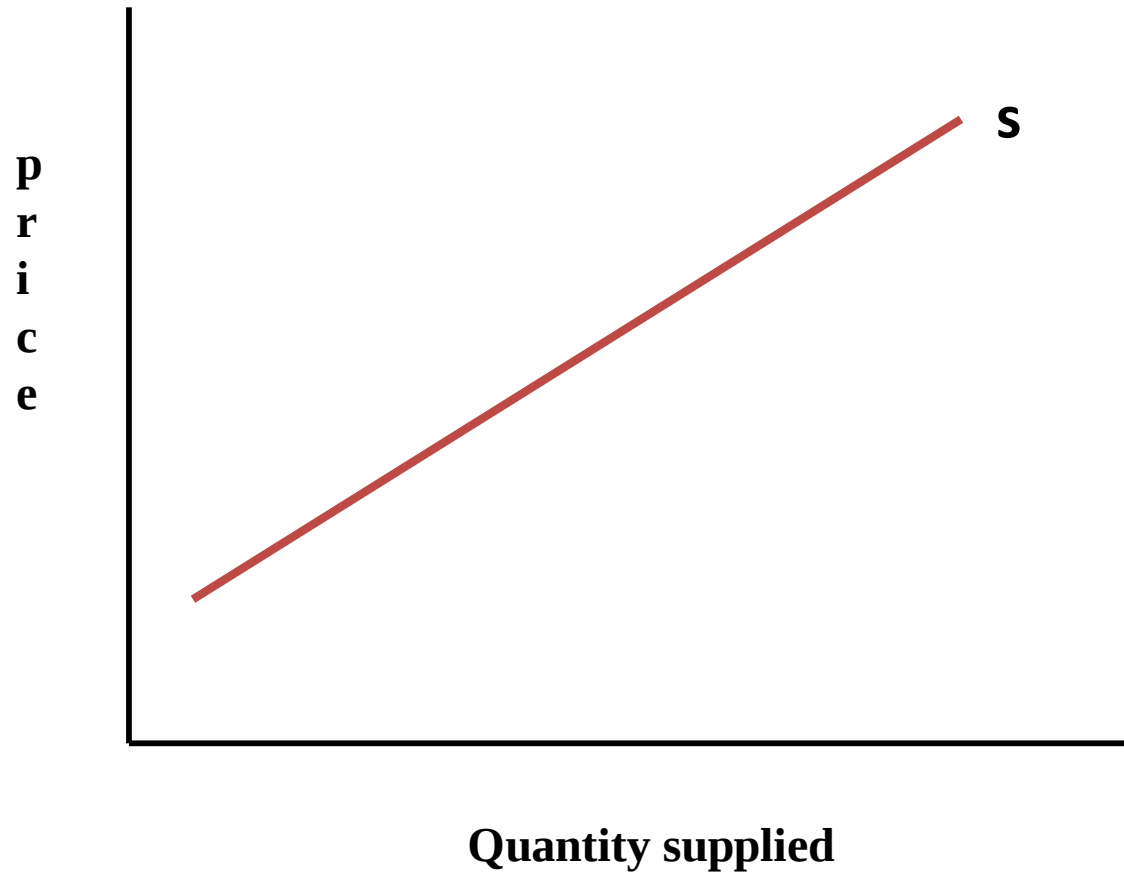
- - c represents the quantity supplied at zero price
- -c is the **intercept** on the supply curve, it is **negative** because at zero price there is no supply of the product
- d = is correlation coefficient

$$\Delta Q_{sx} / \Delta P_x$$

supply schedule

Price per unit Rs	Quantity demanded in units $Q_{sx} = -40 + 30P_x$
0	- 40
1	10
2	20
3	50
4	80
5	110
6	140

Supply curve



Market equilibrium

- Equilibrium price

$$Q_{dx} = Q_{sx}$$

- Using linear equations

$$a - bP_x = -c + dP_x$$

$$100 - 10P_x = -40 + 30P_x$$

$$100 + 40 = 30P_x + 10P_x$$

$$140 = 40P_x$$

$$P_x = 140 / 40$$

$$= \text{Rs. } 3.50$$

Market equilibrium

- Substituting equilibrium price

$$100 - 10(3.50) = -40 + 30(3.50)$$

$$100 - 35 = -40 + 105$$

$$65 \text{ units} = 65 \text{ units}$$

- Any deviation from equilibrium price will lead to a
 - 1. shortage**
 - 2. surplus**
- Eventually demand and supply will adjust and price will tend to be in equilibrium

Market equilibrium

