DEMAND

Demand is a desire for a good, backed by ability and willingness to pay

- **INDIVIDUAL:** Can be defined as the quantity of a commodity that a person is willing to buy at a given price over a specified period of time
- **MARKET:** Refers to the total quantity that all the users of a commodity are willing to buy at a given price over a specific period of time. In fact, market demand is the sum of individual demands for a product

LAW OF DEMAND

The law of demand can be stated as 'all other things remaining constant, the quantity demanded of a commodity increases when its price decreases and decreases when its price increases'. This law holds under ceteris paribus assumption, i.e., all other things remain unchanged.

SUPPLY

Supply means the Quantity of a Commodity Which Its Producers or Sellers Offer for Sell at a Given Price, Per Unit of Time

- **INDIVIDUAL:** Can be defined as the quantity of a commodity a seller is willing to sell at a given price.
- **MARKET:** Refers to the total quantity that all the sellers of a commodity are willing to sell at a given price over a specific period.

LAW OF SUPPLY

The supply of a product increases with the increase in its price and decreases with decrease in its price, other things remaining constant

MARKET EQUILIBRIUM

Equilibrium refers to a state of market in which quantity demanded of a commodity equals the quantity supplied of the commodity. The equality of demand and supply produces an equilibrium price. The equilibrium price is the price at which quantity demanded of a commodity equals its quantity supplied. That is, at equilibrium price, demand and supply are in balance.

When there is excess supply, it means unsold stock. The unsold stock causes a loss to the firms. This forces firms to cut down their supply and price. Thus, excess supply itself forces downward adjustments in the price and the quantity supplied. The process of downward adjustments continues till supply equals demand. Similarly, when there is excess demand, it forces upward adjustments in the price and quantity demanded. When there is excess demand, firms take the advantage of the market situation and increase supply. When they increase production, cost of production goes up. But consumers, given their demand curve, are willing to pay a higher price. This process continues until demand equals supply.

Price per Shirt (Rs)	Demand ('000 shirts)	Supply ('000 shirts)	Market Position	Effect on Price
100	80	10	Demand exceeds supply	Rise
200	55	28	Demand exceeds supply	Rise
300	40	40	Equilibrium	Stable
400	28	50	Supply exceeds demand	Fall
500	20	55	Supply exceeds demand	Fall
600	15	60	Supply exceeds demand	Fall

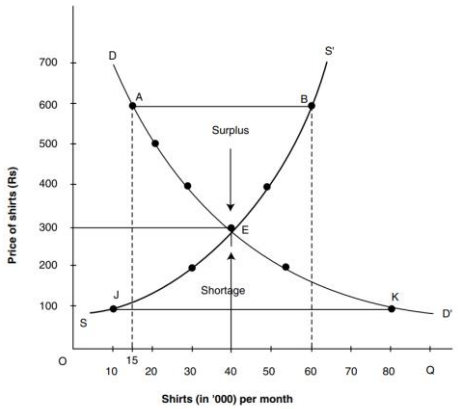

Figure 3.12 *Equilibrium of Demand and Supply: Price Determination*

Shift in Demand Curve

If there is a change in other determinants of demand, e.g., in consumer's income and in the price of substitute or complementary goods, the demand curve may shift upward or downward depending on the direction of the change in other determinants.
Shifts in a demand curve may take place owing to the change in one or more of the determinants of demand.

Other Factors Affecting Demand

- Own price of the given commodity
- Price of related goods (Substitute goods, Complementary goods)
- income of the consumer (Normal goods, Inferior goods, Necessities)
- Tastes and preferences of the consumer

Shift in Supply Curve

Although price of a commodity is the most important determinant of its supply, it is not the only determinant. Many other factors influence the supply of a commodity. Given the supply curve of a commodity, when there is a change in its other determinants, the supply curve shifts rightward or leftward depending on the effect of such changes.

Other Factors Affecting Supply

- Change in Input Prices
- Technological Progress
- Nature and Size of the Industry
- Government Policy

ELASTICITY OF DEMAND AND SUPPLY

For applying the laws of demand and supply, it is very important to measure the extent of relationship between the price of a product and its demand and supply. The extent of relationship between the price and the demand (or supply) is measured by measuring the degree of responsiveness of demand (or supply) for a product to the change in its price. This is called the elasticity of demand and supply.

Price Elasticity of Demand

The price elasticity of demand is defined as the degree of responsiveness or sensitiveness of demand for a commodity to the change in its price.

$$e_p = \frac{\text{Percentage change in the quantity demanded}}{\text{Percentage change in the price}}$$

$$e_p = \frac{\frac{Q_2 - Q_1}{Q_1} \times 100}{\frac{P_2 - P_1}{P_1} \times 100} = \frac{\frac{Q_2 - Q_1}{Q_1}}{\frac{P_2 - P_1}{P_1}}$$

Here, Q1 = original demand, Q2 = demand after price change, P1 = original price and P2 = changed price.

The coefficient of price elasticity calculated without minus sign in the formula will always be negative, because either ΔP or ΔQ will carry a negative sign depending on whether price increases or decreases. But a negative coefficient of elasticity is rather misleading because elasticity cannot be negative—less than zero. The 'minus' sign is, therefore, inserted in the price elasticity formula as a matter of 'linguistic convenience' to make the coefficient of elasticity a non-negative value.

Elasticity coefficient is interpreted as percentage change in demand due to 1 per cent change in price.

The Slope of Demand Curve and Price Elasticity

(i) **Perfectly inelastic demand (ed = 0)**: The demand for a commodity is called perfectly inelastic when quantity demanded does not change at all in response to change in its prices

(ii) **Less than unit elastic demand (ed < 1)**: The demand for a commodity is called less than unit elastic or relatively inelastic when the percentage change in quantity demanded is less than the percentage change in price of the commodity

(iii) **Unit elastic demand (ed = 1):** When percentage change in quantity demanded of a commodity equals percentage change in its price, the demand for the commodity is called unit elastic

(iv) **More than unit elastic demand (ed >1):** When the percentage change in quantity demanded of a commodity is more than the percentage change in its price, the demand for the commodity is called more than unit elastic or highly elastic

(v) **Perfectly elastic demand (ed = f):** The demand for the commodity is called perfectly elastic when its demand expands or contracts to any extent without or very little change in its price

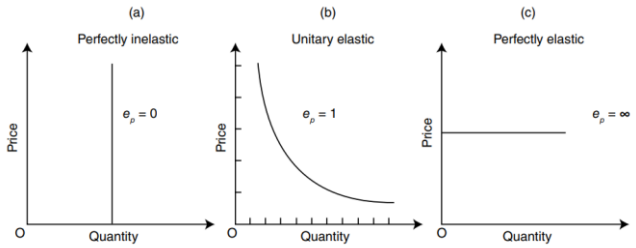

Figure 4.5 *Constant Elasticity Demand Curve*

Income Elasticity of Demand

Apart from price of a product and its substitutes, another important determinant of demand for a product is consumer's income. The demand for normal goods and services increases with increase in consumer's income and vice versa. The responsiveness of demand to the change in consumer's income is known as income elasticity of demand.

$$e_m = \frac{\Delta Q_x / Q_x}{\Delta M / M} = \frac{M}{Q_x} \cdot \frac{\Delta Q_x}{\Delta M}$$

where Qx = quantity of X demanded; M = disposable money income; ΔQx = change in quantity demanded of X; and ΔM = change in income

Unlike price elasticity of demand (which is negative except in case of Giffen goods), income elasticity of demand has a positive sign because there is a positive relationship between the income and the quantity demanded of a product. There is an exception to this rule. Income elasticity of demand for an inferior good is negative, because of negative income effect. The demand for inferior goods decreases with increase in consumer's income and vice versa

Cross Price Elasticity of Demand

Cross elasticity of demand means the degree of responsiveness of demand for a commodity to the change in price of its related goods (substitute goods or complementary goods). Suppose, demand for a commodity rises by 10% due to 5% rise in price of its substitute good.

$$\text{Cross elasticity of demand } (e_c) = \frac{\%\text{ change in quantity demanded}}{\%\text{ change in price of related good}}$$

Elasticity of Supply

Price elasticity of supply is the measure of responsiveness of the quantity supplied of a good to the change in its market price. The coefficient of price elasticity of supply (ep) is the measure of percentage change in the quantity supplied of a good due to a given percentage change in its price.

$$e_p = \frac{\%\text{ change in quantity supplied } (Q)}{\%\text{ change in price } (P)}$$

The formula is algebraically expressed as

$$= \frac{\Delta Q/Q}{\Delta P/P} = \frac{\Delta Q}{\Delta P} \cdot \frac{P}{Q}$$

Note that the formula for measuring the price elasticity of supply is the same as for the price elasticity of demand, (without a minus sign).

(i) Perfectly inelastic supply (es = 0)
(ii) Inelastic or less than unit elastic supply (es < 1)
(iii) Unitary elastic supply (es = 1)
(iv) Elastic or more than unit elastic supply (es > 1)
(v) Perfectly elastic supply (es = f)