



Micro Economics Notes PDF

On

Theory of Consumer Behaviour

(Class - 11)

Consumer: It is an economic agent who consumes final goods or services for a consideration.

UTILITY

It refers to the satisfying power of a commodity. It means real satisfaction to a consumer when he is willing to spend money on a stock of commodity which has the capacity to satisfy his wants. It differs from person to person to person.

Total utility: It is the total satisfaction derived from consumption of a given quantity of a commodity at a given time. In other words, it is the sum total of marginal utility.

Marginal Utility (MU): It is additional to the total utility as consumption is increased by one more unit of the commodity. $Mu_n = Tu_n - Tu_{n-1}$

Relation between total utility and marginal utility:

UNITS	Mu	Tu
1	10	10
2	8	18
3	6	24
4	4	28
5	2	30
6	0	30
7	-2	28

1. When Mu diminishes but positive Tu increases at a diminishing rate.
2. When Mu is zero, Tu is maximum.
3. When Mu is negative, Tu diminishes.

Law of Diminishing Marginal Utility: The law states that a consumer consumes more & more units of a commodity, marginal utility derived from each successive unit goes on diminishing.

Consumer's Bundle: It is a quantitative combination of two goods which can be purchased by a consumer from his given income.

Budget set: It is a quantitative combination of those bundles which a consumer can purchase from his given income at prevailing market prices.

Changes in Budget Set:

- The available bundles are determined by the prices of the two commodities and the customer's earnings.
- The set of available bundles is likely to change when the price of either of the commodities or the customer's earnings changes.

Consumer Budget: It states the real purchasing power of the consumer from which he can purchase the certain quantitative bundles of two goods at a given price.

Budget Line: A graphical representation of all those bundles which cost the amount just equal to the consumer's money income gives us the budget line.

$$P_X Q_X + P_Y Q_Y = S$$

Here,

P_X = Price of commodity X

Q_X = Quantity of commodity X

P_Y = Price of commodity Y

Q_Y = Quantity of commodity Y

S = Consumer Income

Change in Budget Line: There can be parallel shifts (leftwards or rightwards) due to change in income of the consumer and change in price of goods. A rise in income of the consumer shifts the budget line rightwards and vice-versa. In case of change in price of one good, there will be rotation in the budget line. Fall in price causes outward rotation due to rise in purchasing power and vice-versa.

Marginal Rate of Substitution (MRS): It refers to the rate at which the commodity can be substituted with each other, so that total satisfaction of the consumer remains the same.

Indifference Curve: It is a curve showing different combinations of two goods, each combination offering the same level of satisfaction to the consumer.

Properties of Indifference Curve:

1. It is always convex to origin due to diminishing MRS.
2. It slopes downwards.
3. They do not intersect with each other.
4. Higher indifference curve represents a higher level of satisfaction.

CONSUMERS EQUILIBRIUM

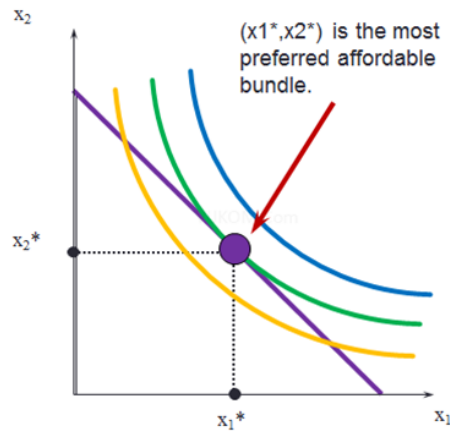
A consumer is said to be in equilibrium when he maximizes his satisfaction, given his money income and prices of two commodities. He attains equilibrium at that point where the slope of IC is equal to the slope of budget line. It can be discussed under following 2 situations:

1. **One Commodity Case**
2. **Two Commodity Case**

1. One commodity Case: A consumer purchasing a single commodity will be at equilibrium when he is buying such a quantity of that commodity, which gives him maximum satisfaction.

2. Two Commodity case - (Law of Equi - Marginal Utility):

According to Law, A consumer gets maximum satisfaction, when ratios of Mu of 2 commodities and their respective prices are equal and Mu falls as consumption increases.



CONDITION OF CONSUMER'S EQUILIBRIUM

(a) Cardinal approach (Utility Analysis) : According to this approach utility can be measured. "Utils" is the unit of utility.

Condition:

1. In case of one commodity:

$$MU_m = \frac{MU_x}{P_x} \text{ [If } MU_m = 1, MU_x = P_x \text{]}$$

Where, MU_m = Marginal utility of money

MU_x = Marginal utility of 'x', P_x = Price of 'x'

2. In case of two commodity:

$$\frac{MU_x}{P_x} = \frac{MU_y}{P_y} = MU_m$$

MU_x and MU_y must be decreasing

Units	MU_x	MU_y	MU_x/P_x	MU_y/P_y
1	36	40	12	10
2	33	36	11	<u>9</u>
3	30	32	10	8
4	27	28	<u>9</u>	7
5	24	24	8	6
6	21	20	7	5

Assumption, $P_x = \text{Rs.}3$, $P_y = \text{Rs.}4$

$Y = \text{Rs.}20$ Here, $MU_m = 9$

(b) Ordinal approach (Indifference Curve Analysis): According to this approach utility cannot be measured but can be expressed in order or ranking.

Condition of Equilibrium:

1.

$$MRS_{xy} = \frac{P_x}{P_y} \left[\begin{array}{l} P_x = \text{Price of 'x'} \\ P_y = \text{Price of 'y'} \end{array} \right]$$

Our budget line must be tangent to indifference curve.

2. MRS must be diminishing or,

Indifference curve must be convex to the origin.

DEMAND

The quantity that a consumer is able and willing to purchase at a specific price and within a specific time frame.

Demand Function:

The demand function represents the functional relationship taking place between a commodity's quantity demanded and its various determinants.

$$D_x = f(P_x, P_R, Y, T, E)$$

Here,

D_x = Quantity Demand

f = Functional Relationship

P_x = Own price of good

P_R = Related price of good

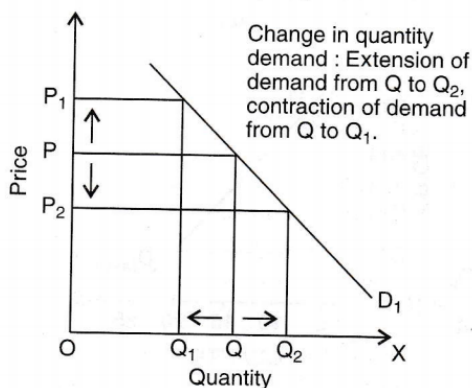
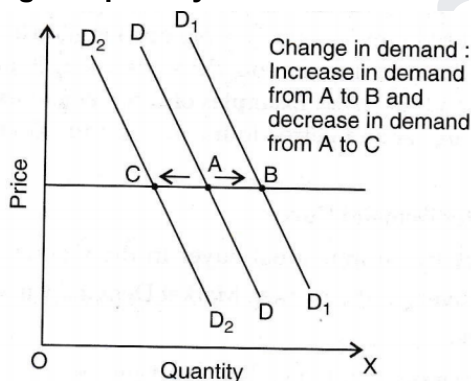
Y = Income

T = Taste and Preferences

E = Expectations

CHANGE OF DEMAND

1. Change in quantity Demanded or Movement along Demand curve



2. Change in Demand or Shift in Demand

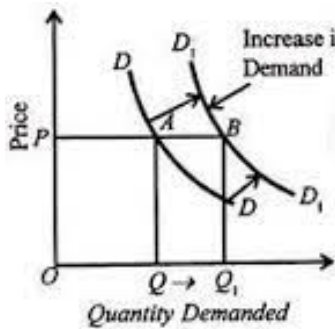


Fig. 4

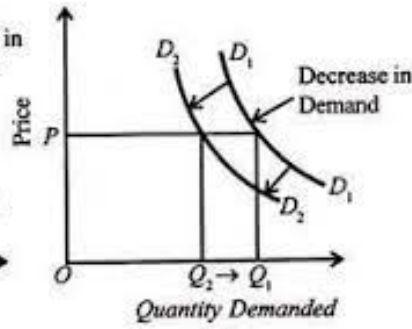


Fig. 5

Factors affecting Demand:

- **Product Price:** The price of a commodity has an inverse (negative) relationship with the amount of that commodity that buyers are willing and able to buy. Consumers prefer to buy more of a low-priced commodity and less of a high-priced commodity. The inverse relationship between price and the amount of money people are willing and able to spend is known as The Law of Demand.
- **Consumer's Income:** The impact that pay has on the measure of a product that purchasers are willing and ready to purchase relies upon the sort of good we're discussing.
- **Normal Goods:** For most products, there is a positive (direct) connection between a consumer's income and the measure of the decency that one is willing and ready to purchase. At the end of the day, for these merchandise when income grows the interest for the product will increase; when the income falls, the interest for the product will diminish. These are referred to as normal goods.
- **Inferior Goods:** However, for other commodities, a change in income has the opposite impact. An inferior good is one whose demand decreases as wealth grows. In other words, customer demand for inferior items is inversely connected to income. In economics, inferior suggests that there is an inverse association between one's income and the interest or demand for that commodity.

Furthermore, whether a good is normal or inferior may differ from one individual to the next. For you, a commodity could be normal good, but for someone else, it might be inferior.

- **Price of Related Goods:** Assuming that the commodity price remains constant, there are two categories of linked products that impact demand for the commodity.
 - **Complementary Goods:** Complementary goods are linked products that are consumed together because their utility is reduced if consumed alone. As a result, if demand for one of the two products rises, demand for the other rises as well, even though the price of this commodity stays unchanged, and vice versa.
 - **Substitute Goods:** Substitute goods are commodities that are diametrically opposed to one another. As a result, if demand for one of the two products increases, demand for the other product falls even though the price of this product stays constant, and vice versa.
- **Taste and preferences of consumer:** A favourable change in tastes and preferences of consumer leads to increase in demand, while the opposite happens when there is a negative change in taste and preference of consumers.
- **Expectation:** If the consumer expects that the availability of a good in the future is going to fall, his present demand of that good would increase, and vice versa, keeping the price constant.

- **Market Demand:** It is the total quantity of the commodity demanded in the market by all consumers at different prices at a point of time.

- Demand Function:** It is the functional relationship between the demand for a commodity and factors affecting demand.
- Law of demand:** The law states that when all other things remain constant then there is an inverse relationship between price of the commodity and quantity demanded of it. That is, higher the price, lower the demand and lower the price, higher the demand.
- Change in Demand:** When demand changes due to change in any one of its determinants other than the price.
- Change in Quantity Demanded:** When demand changes due to change in its own price keeping all other factors constant.
- Demand curve and demand schedule:** The tabular presentation of price and quantity demanded is called demand schedule and a demand curve is the graphical representation of the demand schedule.

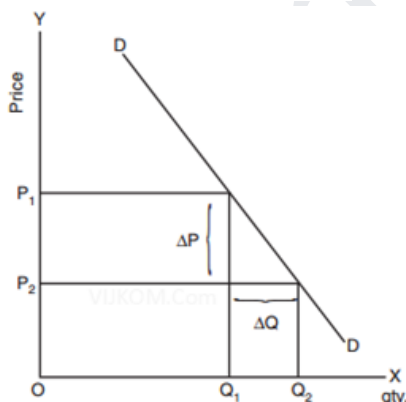
Shift in demand curve:

- A shift in the demand curve indicates changes in demand at each potential price as a result of changes in one or more non-price factors such as the price of comparable commodities, income, taste & preferences, and consumer expectations.
- The equilibrium point shifts whenever the demand curve shifts.
- The demand curve shifts to one of two directions:
 - Rightward shift or Leftward shift.
 - The price does not change factors other than price cause a shift in demand.

Movement along the Demand Curve:

- The movement of the demand curve indicates the variation in both the price and the quantity demanded from one position to the other.
- When the quantity demanded changes owing to a change in the price of the product or service, the demand curve moves.
- The movement along the curve can occur in either of two directions:
 - Upward movement
 - Downward movement.

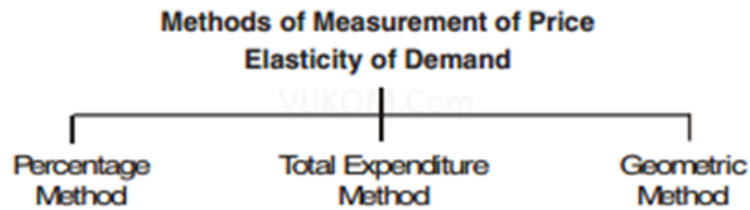
DEMAND CURVE AND ITS SLOPE



$$\begin{aligned}\text{slope of demand curve} &= \frac{\text{Change in price}}{\text{Change in qty. dd.}} \\ &= \frac{\Delta P}{\Delta Q}\end{aligned}$$

PRICE ELASTICITY OF DEMAND

- The price elasticity of demand measures how a change in price affects the demand for a product among its consumers.
- It is calculated by dividing the percentage change in a product's required quantity by the percentage change in the product's cost. This is also called percentage method of elasticity of demand,



1. Percentage Method:

$$E_p = \frac{\Delta Q}{\Delta P} \times \frac{P}{Q}$$

E_p → Elasticity of Demand

ΔQ → Change in quantity

ΔP → Change in Price

P → Initial Price

Q → Initial Quantity

Or

$$E_p = \frac{\text{Percentage Change in Quantity demand of a com.}}{\text{Percentage Change in Price}}$$

2. Total Expenditure Method of Elasticity of demand:

- It calculates the price elasticity of demand based on the change in total expenditure (Product of Price and quantity) incurred by a household on the commodity as a result of a price change.
- The price of a commodity and its demand are inversely linked.
- The responsiveness of the demand for the commodity to price changes determines whether expenditure on the good increases or decreases as a result of a rise in its price.

Relationship between Total Expenditure and Price of Elasticity of Demand:

- $E_d=1$ When total spending (price X quantity) remains constant despite a rise or reduction in the price of a good.
- $E_d>1$ When prices fall, total expenditure rises, and when prices rise, total expenditure falls.
- $E_d<1$ When total expenditure falls as a result of a price decrease and total expenditure rises as a result of a price increase.

3. Geometric Method of Elasticity of Demand:

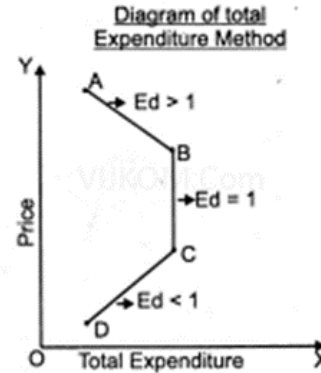
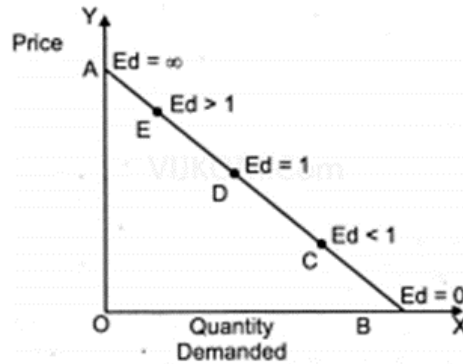
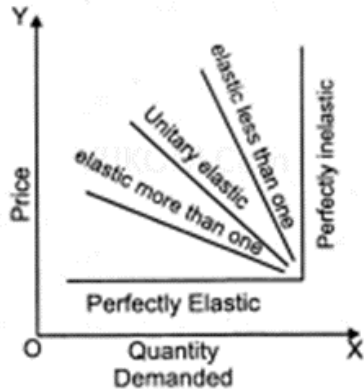
Elasticity of demand is measured at any location by dividing the length of the lower segment of the demand curve by the length of the upper segment of the demand curve at that point. At the midpoint of any linear demand curve, the value of e_d is unity. A linear demand curve's elasticity may be simply assessed graphically. The elasticity of demand at each point on a straight line demand curve is determined by the ratio between the demand curve's lower and upper segments at that position.

Diagram to show Geometric or point method:

Elasticity of demand at a given point.

$$Ed = \frac{\text{Lower segment of the demand curve}}{\text{Upper segment of the demand curve}}$$

D is the midpoint of the demand curve.

Degree of Price Elasticity**Factors that influence price elasticity of demand:**

- **Availability of close substitutes:** Demand for a commodity with many equivalents is typically more elastic than demand for goods with no replacements. Coca-Cola, Pepsi, Limca, and other similar beverages are suitable replacements. Even a minor increase in the price of coke will entice purchasers to seek alternatives. Electricity demand, on the other hand, will be less elastic because there are no close substitutes.
- **Nature of the Commodity:** Demand for essentials such as medicines and food grains is less elastic since we must consume them in the lowest quantity required, regardless of price. In any case, elasticity for comfort and extravagances like refrigerators, air conditioners and so on is more flexible on the grounds that their utilization might be delayed in the future if their cost rises.
- **Price level:** Demand for a higher-priced commodity such as air conditioners or automobiles is often more elastic than demand for a lower-priced commodity such as match box or pencils.
- **Income level:** Higher income groups have less elastic demand for commodities than lower income groups. For example, if the price of a commodity rises, a wealthy consumer is unlikely to cut his demand, whereas a poor buyer may.

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