LIVE

CLASS 11th ECONOMICS

BACKLOG MARATHON

SERIES

1. Introduction to Micro Economics
2. Consumer Equilibrium
3. Demand
4. Elasticity of Demand
5. Introduction, Meaning, Scope & Importance of Statistics
6. Collection of Data



CHAPTER - 1

INTRODUCTION TO MICROECONOMICS

WHAT IS AN ECONOMY?

An economy is a system which provides people, the means to work and earn a living.

Example



Agriculture



Railways



Transportation

WHY STUDY ECONOMICS?

The main reason for study of economics can be simplified to a single word - Scarcity.







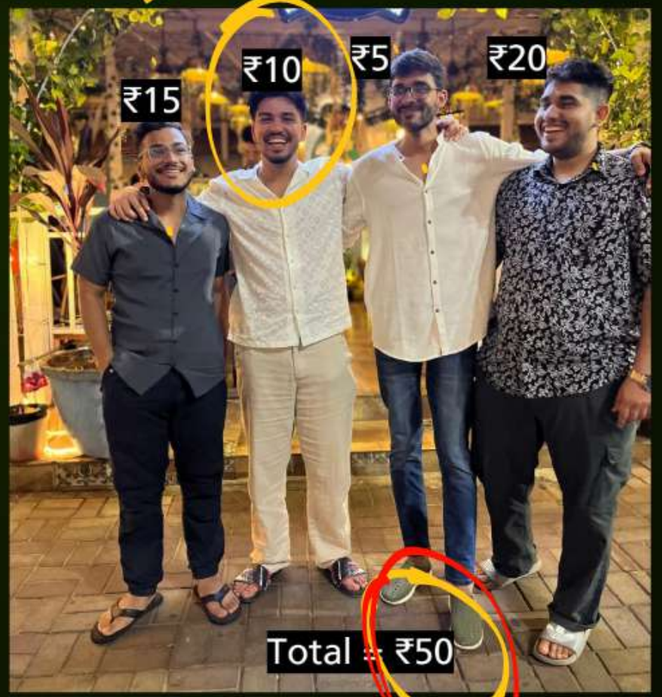



₹80



₹100



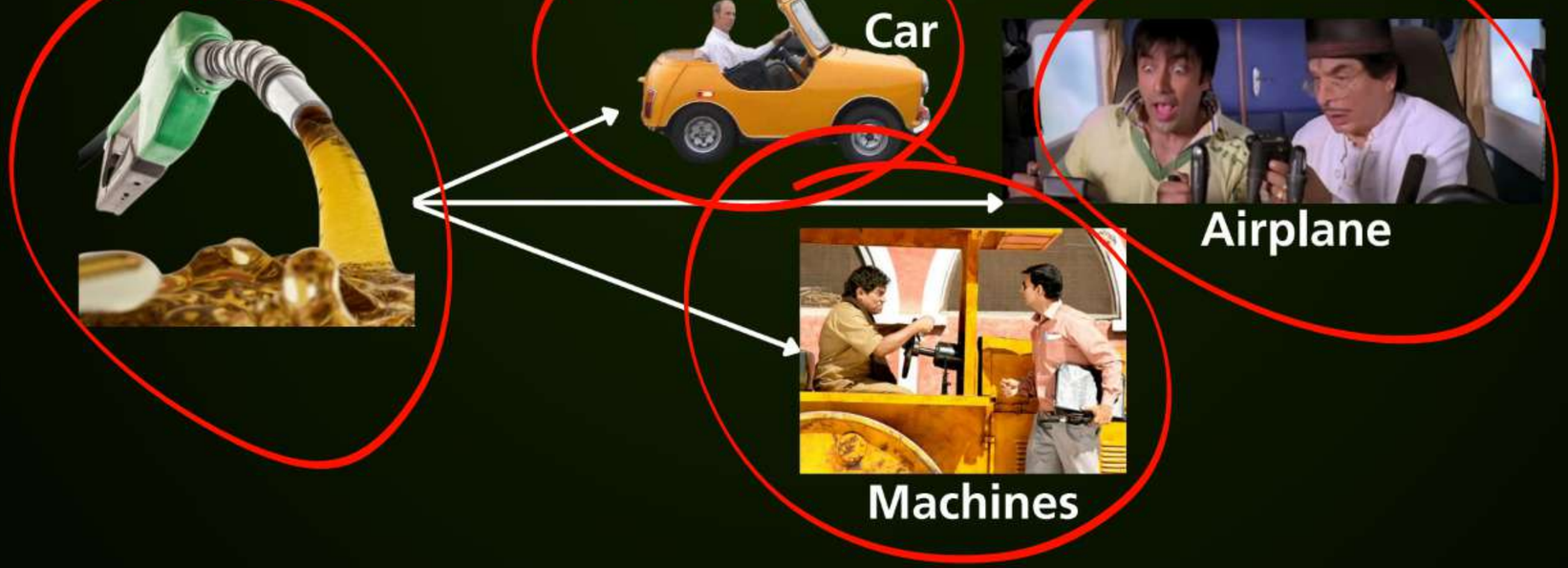


limited

SCARCITY

- Scarcity refers to the limitation of supply in relation to demand for a commodity.
- Economizing of resources refers to making optimum use of the available resources.
- Scarcity is not the only problem because resources also have alternate (different) uses.

Example



ECONOMIC PROBLEMS

Unlimited Human Wants

- Human wants are never ending, i.e. they can never be fully satisfied. As soon as one want is satisfied,
- another new want emerges. Human wants also differ in priorities.



SCARCITY OF RESOURCES

- Resources (i.e. land, labour, capital, etc.) are limited in relation to their demand. It is the basic reason for existence of economic problems in all economies.





ALTERNATE USES

Resources are not only scarce, but they can also be put to various uses. It makes choice among resources more important.







DIFFERENCE BETWEEN POSITIVE ECONOMICS & NORMATIVE ECONOMICS

BASES	POSITIVE ECONOMICS	NORMATIVE ECONOMICS
Meaning	It deals with what is or how the economic problems are actually solved.	It deals with what ought to be or how the economic problems should be solved.
Verification	It can be verified with actual data.	It cannot be verified with actual data.
Purpose	It aims to make real description of an economic activity.	It aims to determine the ideals.
Suggestive	It is based upon facts, and thus, not Suggestive.	It is based upon individual opinion and suggestive. therefore, it is suggestive in nature.
Value Judgements	It does not give any value judgements, i.e. it is neutral between ends.	It gives value judgements.
Examples	Prices in Indian economy are constantly rising. There are inequalities of income in our economy.	India should take steps to control rising prices. Income inequalities should be reduced.

DIFFERENCE BETWEEN MICROECONOMICS AND MACROECONOMICS

BASES	MICROECONOMICS	MACROECONOMICS
Meaning	It is that part of economic theory which studies the behaviour of individual units of an economy.	It is that part of economic theory which studies the behaviour of aggregates of the economy as a whole.
Tools	Demand and Supply.	Aggregate Demand & Aggregate Supply.
Basic Objective	It aims to determine price of a commodity or factors of production.	It aims to determine income and employment level of the economy.
Degree of Aggregation	It involves limited degree of aggregation. For example, market demand is derived by aggregating individual demands of all buyers in the particular market.	It involves the highest degree of aggregation. For example, aggregate demand is derived for the entire economy.

BASES	MICROECONOMICS	MACROECONOMICS
Basic Assumptions	It assumes all the macro variables to be constant, i.e., it assumes that national income, consumption, savings, etc. are constant.	It assumes that all the micro variables, like decisions of households and firms, prices of individual products, etc. are constant.
Examples	Individual income, individual output.	National Income, National output.
Other Name	Microeconomics is also known as 'Price Theory' as it is primarily concerned with determination of prices of commodities and factors of production.	Macroeconomics is also known as Income and Employment Theory as it is primarily concerned with determination of level of income and employment.

CENTRAL PROBLEMS OF AN ECONOMY

- What to produce?
- How to produce?
- For whom to produce?

WHAT TO PRODUCE?

This problem involves selection of goods and services to be produced and the quantity to be produced of each selected commodity.

- What possible commodities to produce
- How much to produce



HOW TO PRODUCE?

This problem refers to selection of technique to be used for production of goods and services.

- Labour intensive technique
- Capital intensive technique



FOR WHOM TO PRODUCE?

This problem relates to the distribution of produced goods and services among the individuals within the economy, i.e. selection of the category of people who will ultimately consume the goods, i.e. whether to produce goods for more poor and less rich or more rich and less poor.



What to produce?

→ Food

→ Technology

→ LPG

→ Guns, Bomb, Toop

→ Car

→ Bridges

140cr

How to Produce?

→ Labour I.T.

For whom to produce?

Rich or Poor



Both

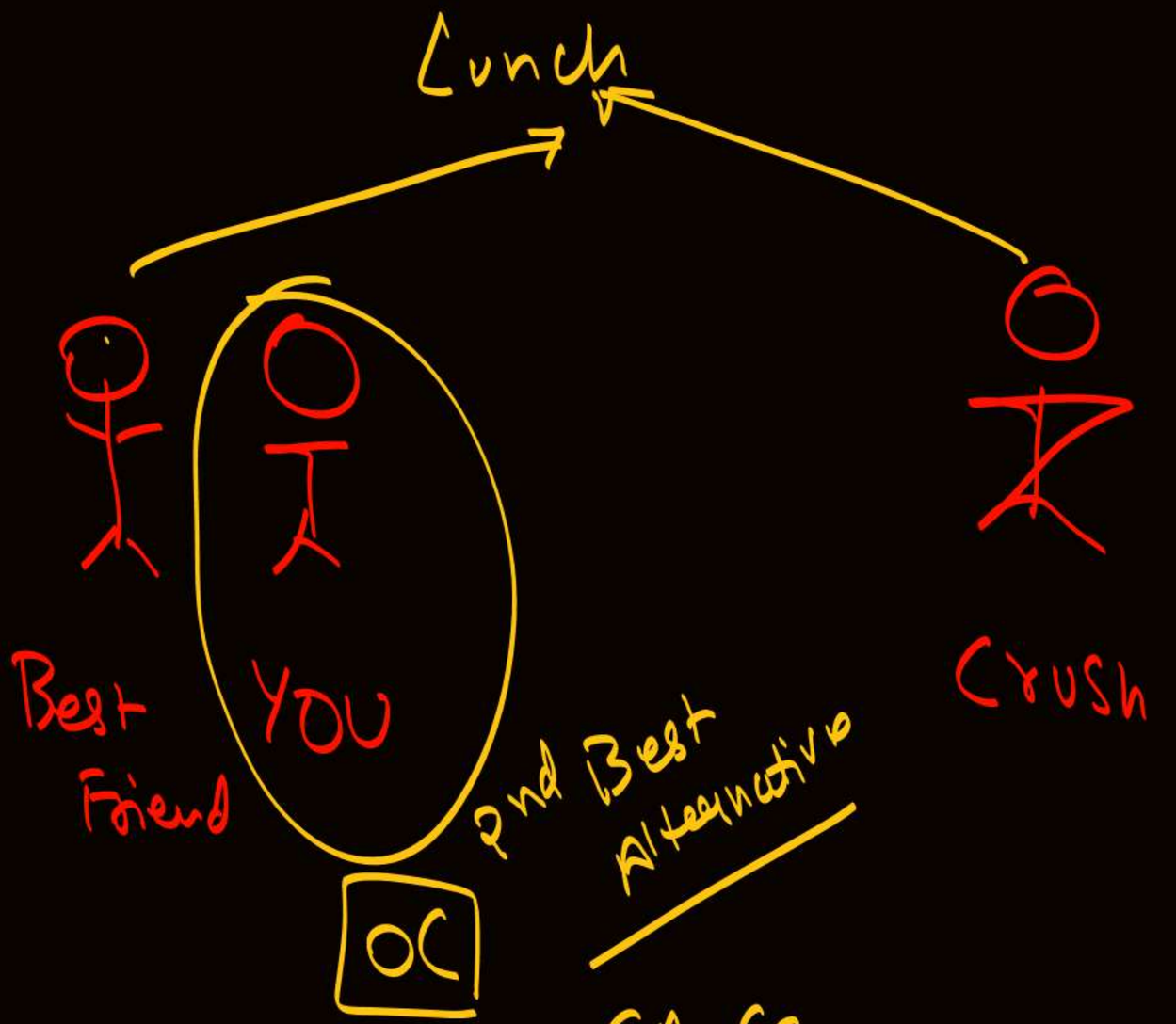
OPPORTUNITY COST

- As resources are scarce, the society is always forced to make choices. To produce more of one good, a certain amount of other goods has to be sacrificed.
- Opportunity Cost is the cost of next best alternative foregone.



Money → Resources → limited

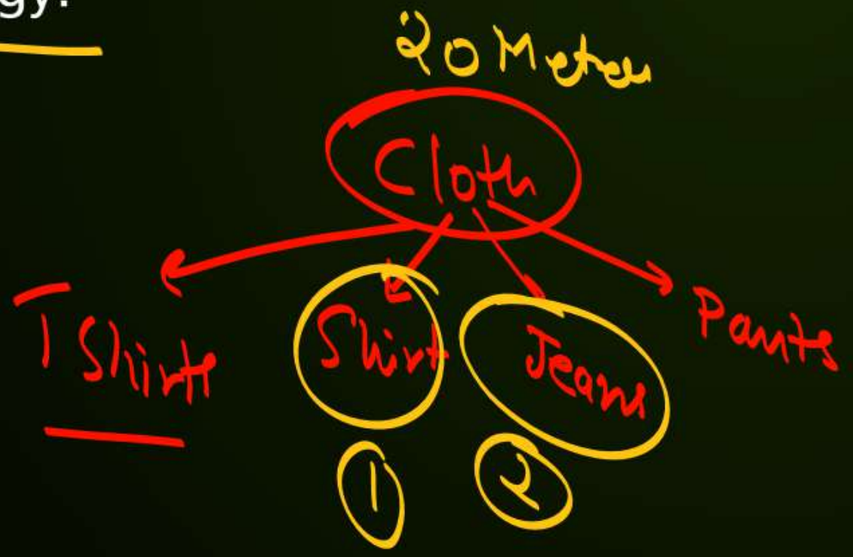
Choice



CA, CS, IPS, IAS

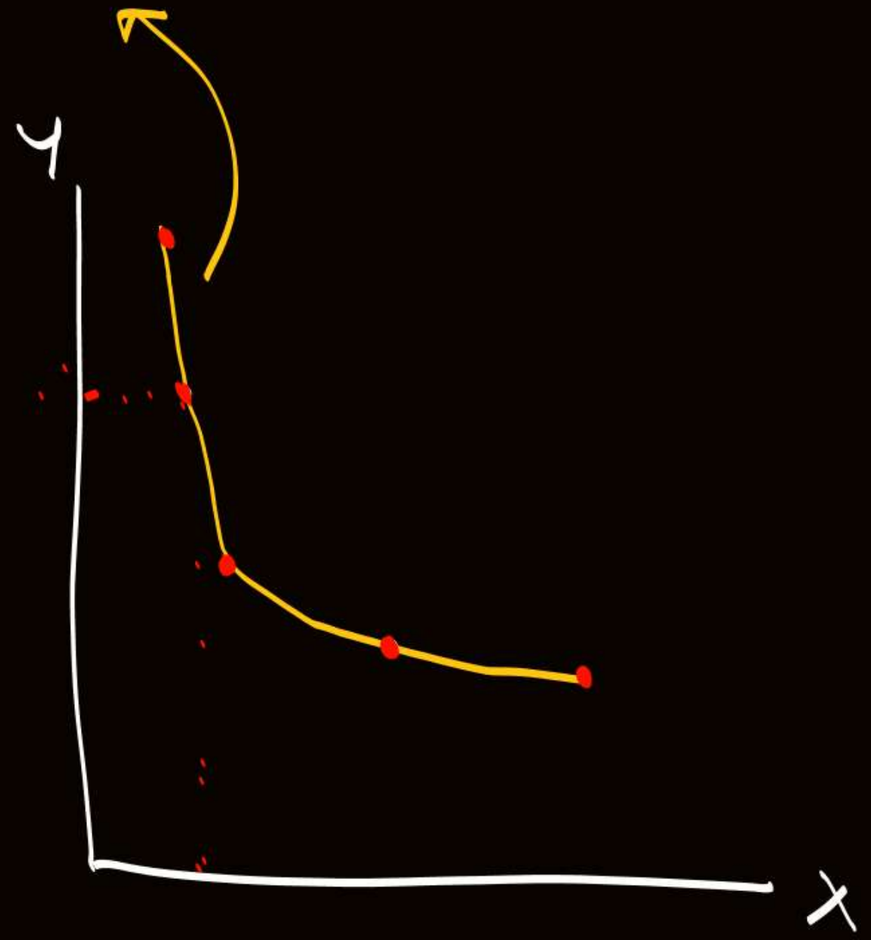
PRODUCTION POSSIBILITY FRONTIER (PPF)

- Society must decide, what to produce out of an almost infinite range of possibilities.
- Production Possibility Frontier (PPF) refers to graphical representation of possible combinations of two goods that can be produced with given resources and technology.

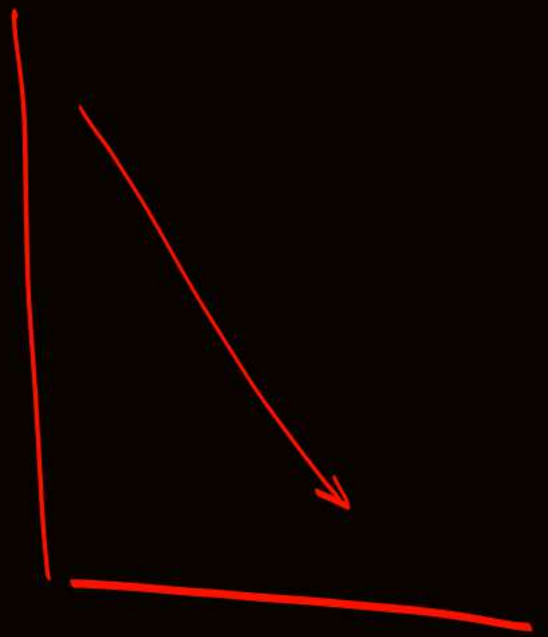




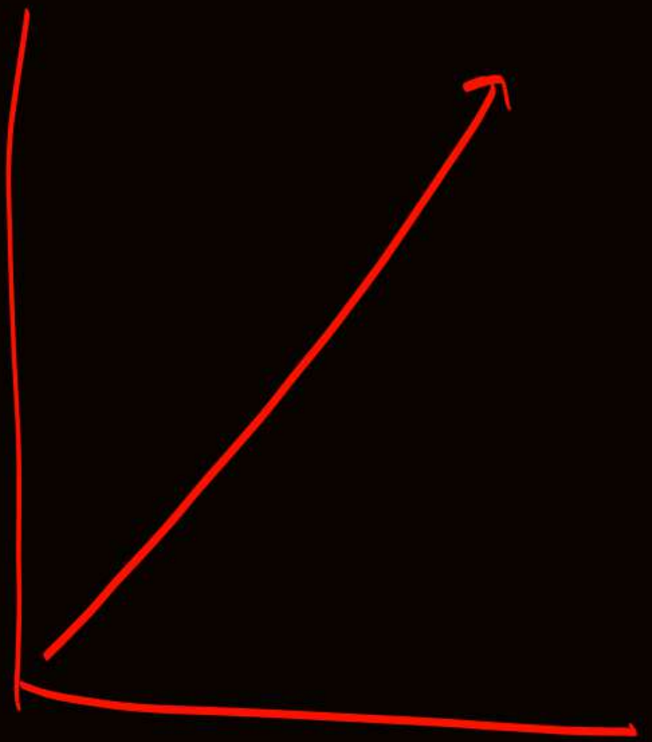
Curve → Graph



↑↓ → Inverse



↑↑ → Direct Relation



SYNONYMS OF PPF

PPF is also known by the following names:

- Production Possibility Curve
- Production Possibility Boundary
- Transformation Curve
- Transformation Boundary
- Transformation Frontier

- BABLU
- CM
- CHANDRAMAULI
- CHOTA DON



ASSUMPTIONS FOR PPF

- The amount of resources in an economy is fixed.
- Only two goods can be produced.
- The resources are fully and efficiently utilised.
- The level of technology is assumed to be constant.



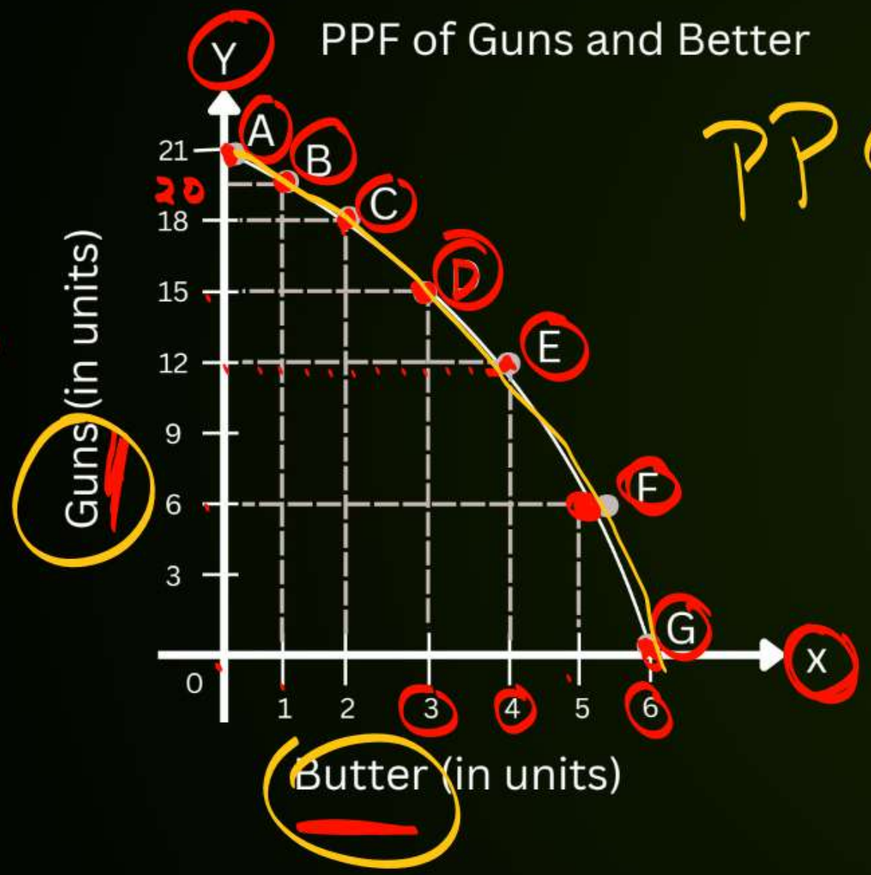
Next Toppers

Ioky → Resource

PRODUCTION POSSIBILITY SCHEDULE

POSSIBILITIES	GUNS (IN UNITS)	BUTTER (IN UNITS)	MOC	MRT = $\frac{\triangle \text{Guns}}{\triangle \text{Butter}}$ Sac. Gain
A	21	0	-	-
B	20	1	1	1G : 1B
C	18	2	2	2G : 1B
D	15	3	3	3G : 1B
E	11	4	4	4G : 1B
F	6	5	5	5G : 1B
G	0	6	6	6G : 1B

Next Toppers



PPC या PPF







MOC

1 Gain = ? Sacrifice

Redbull	Fanta
10	0
9	1
7	2
4	3
0	4

MOC

1 Sacrifice

2 Sacrifice

3 Sac.

4 Sac.

MRT

$$MRT = \frac{\Delta \text{Sacrifice}}{\Delta \text{Gain}}$$

MRT ↑

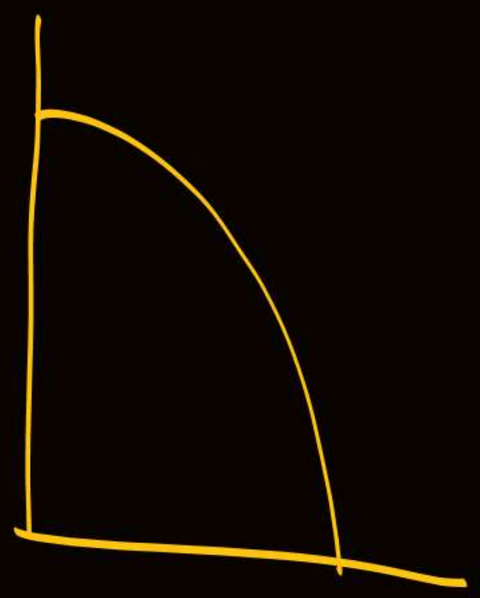
1 Sac / 1 Gain — 1:1

2 Sac / 1 Gain — 2:1

3 Sac / 1 Gain — 3:1

4 Sac / 1 Gain — 4:1

PPC

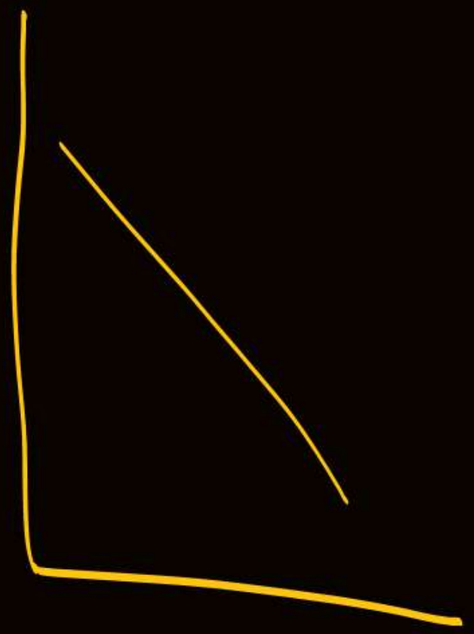


Concave

MRT ↑

$\frac{1}{1}$ $\frac{3}{1}$ $\frac{3}{1}$ $\frac{4}{1}$ $\frac{5}{1}$

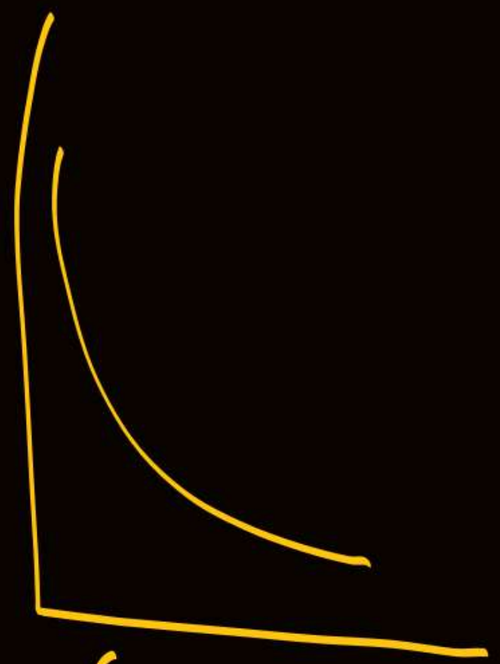
PPC



MRT = constant

$\frac{1}{1}$ $\frac{1}{1}$ $\frac{1}{1}$ $\frac{1}{1}$ $\frac{1}{1}$

PPC



Convex

MRT ↓

$\frac{5}{1}$ $\frac{4}{1}$ $\frac{3}{1}$ $\frac{2}{1}$ $\frac{1}{1}$

Downward Sloping Curve

↑ ↓

Butter Gun

MARGINAL OPPORTUNITY COST (MOC)

- MOC refers to the number of units of a commodity sacrificed to gain one additional unit of another commodity.
- In case of PPF, MOC is always increasing, i.e. more and more units of a commodity have to be sacrificed to gain an additional unit of another commodity.
- MRT is the ratio of number of units of a commodity sacrificed to gain an additional unit of another commodity .

$$\text{MRT} = \frac{\text{Units Sacrificed}}{\text{Units Gained}}$$

- MRT measures the slope of Production Possibility Frontier.



CHARACTERISTICS OR PROPERTIES OF PPF

- PPF slopes Downwards - More of one good can be produced only by taking resources away from the production of another good! As there exists an inverse relationship between change in quantity of one commodity and change in quantity of the other commodity.
- PPF is Concave Shaped - PPF is concave shaped because of increasing marginal rate of transformation (MRT), i.e. more and more units of one commodity are sacrificed to gain an additional unit of another commodity.





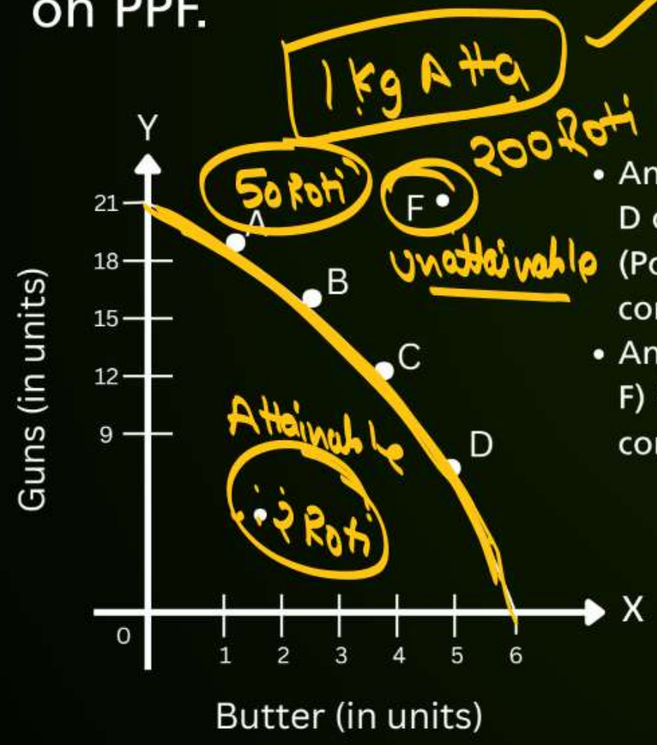
CAN PPF BE CONVEX TO THE ORIGIN?

PPF can be convex to the origin if MRT is decreasing, i.e. less and less units of a commodity are sacrificed to gain an additional unit of another commodity.

ATTAINABLE & UNATTAINABLE COMBINATIONS

It refers to those combinations at which economy can operate. There can be two attainable options:

- Optimum utilisation of resources: If the resources are used in the best possible manner, then economy will operate at any point (like, A, B, C or D) on PPF.



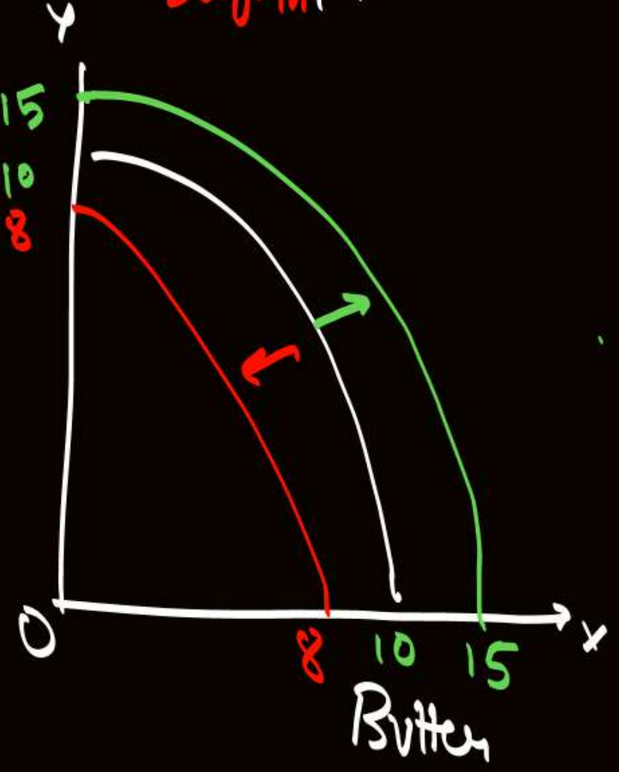
- Any point on PPF (Points A to D or any point inside PPC (Point E) are attainable combinations.
- Any point outside PPF (Point F) is an unatainable combination.





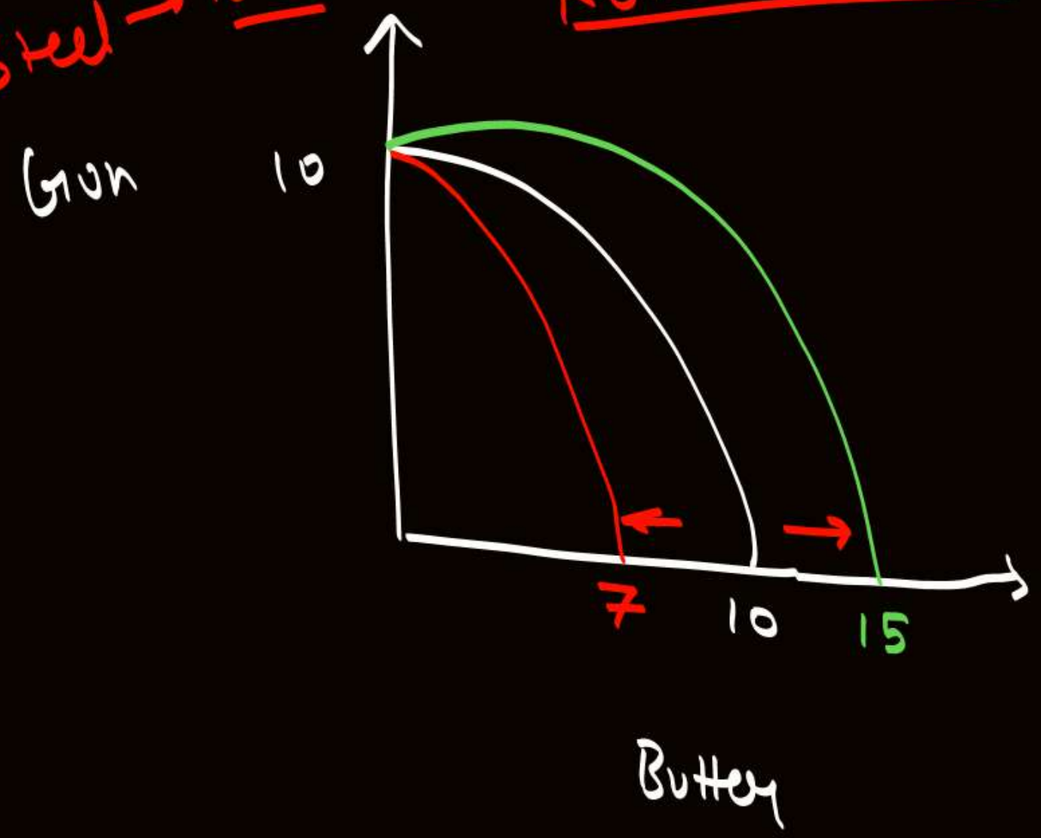
Resource ↑↑
Technology

Shift in PPC



Steel → Less steel

Rotation in PPC



Milk ↑ 5 litres → 8 litres.

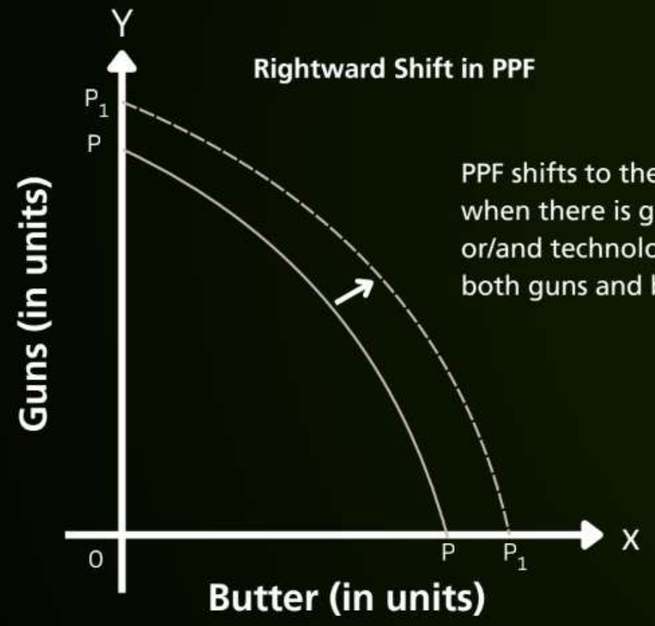
Milk ↓ 5 litres → 3 litres.

CHANGE IN PPF

- In this changing world, the productive capacity of an economy is constantly changing due to increase or decrease in resources. The change in PPF indicates either an increase or a decrease in the productive capacity of the economy.
- Shift in PPF: PPF will shift when there is a change in productive capacity (resources or technology) with respect to both the goods.
- Rotation of PPF: PPF will rotate when there is a change in productive capacity (resources or technology) with respect to only one good.

SHIFT IN PPF

- Rightward Shift in PPF: When there is "Advancement or Upgradation of Technology" or/and "Growth of Resources.



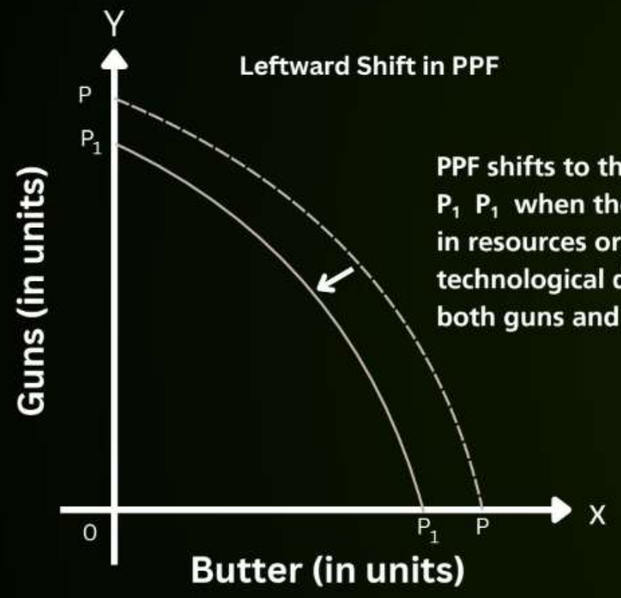






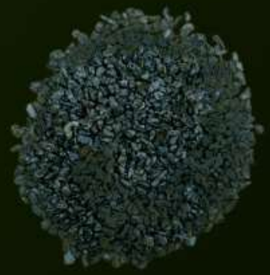


- Leftward Shift in PPF: PPF will shift towards left, when there is a technological degradation and/or decrease in resources.





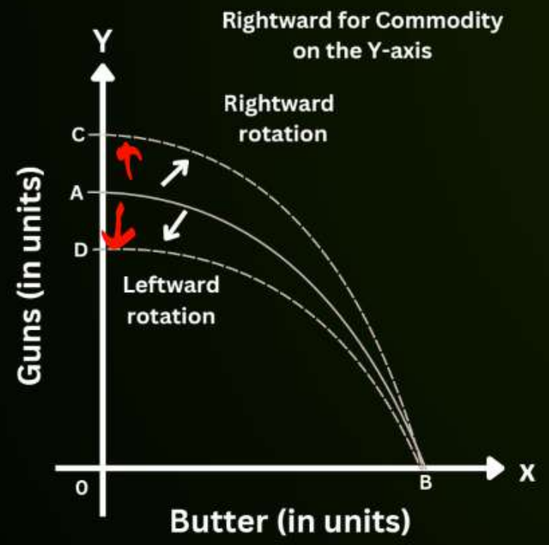


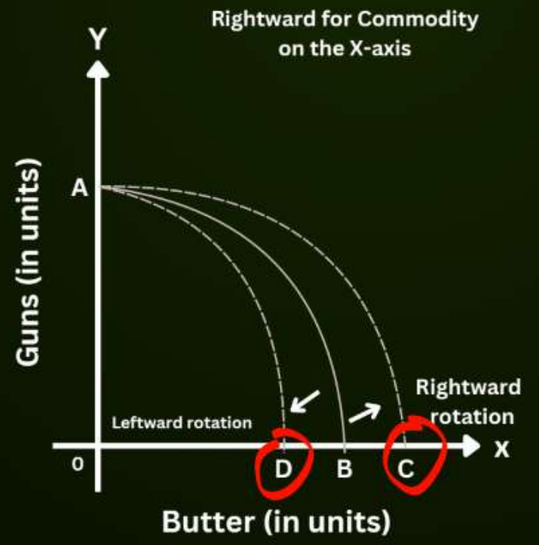




ROTATION IN PPF

- However, in case of technological degradation or decrease in resources. PPF will rotate to the left from AB to AD. Rotation for commodity on the Y-axis: A technological improvement or an increase in resources for production of commodity on Y-axis will rotate the PPF from AB to CB.
- However, in case of degradation in technology or a decrease in resources. PPF will rotate to the left from AB to DB.





NEXT 1500



Humanities Plus

NEXT 500



CHAPTER - 2

CONSUMER EQUILIBRIUM

INTRODUCTION

The aim of this chapter is to make you understand: How does a consumer maximize his satisfaction from consumption of goods and services.



WHO IS CONSUMER?

A consumer is one who buys goods and services for satisfaction of wants









Cardinal Utility Approach

(or Marshall's Utility Analysis or Marginal Utility Analysis).

Measures satisfaction in numeric terms (e.g., “10 units of utility”).



Ordinal Utility Approach

(or Indifference Curve Analysis or Hicksian Analysis).

Ranks preferences without assigning numerical values (e.g., “I prefer A over B”).



CONCEPT OF UTILITY

Meaning of Utility

- Utility refers to want satisfying power of a commodity.
- Utils are imaginary units which are used to measure satisfaction (utility).

Utility differs from-

Person-to-Person,





Place-to-Place



Time-to-Time





Rainy Season

TOTAL UTILITY (TU)

- Total utility refers to the total satisfaction obtained from the consumption of all possible units of a commodity.

$TU_n = U_1 + U_2 + U_3 + \ldots\ldots\ldots\ldots\ldots\ldots + U_n$



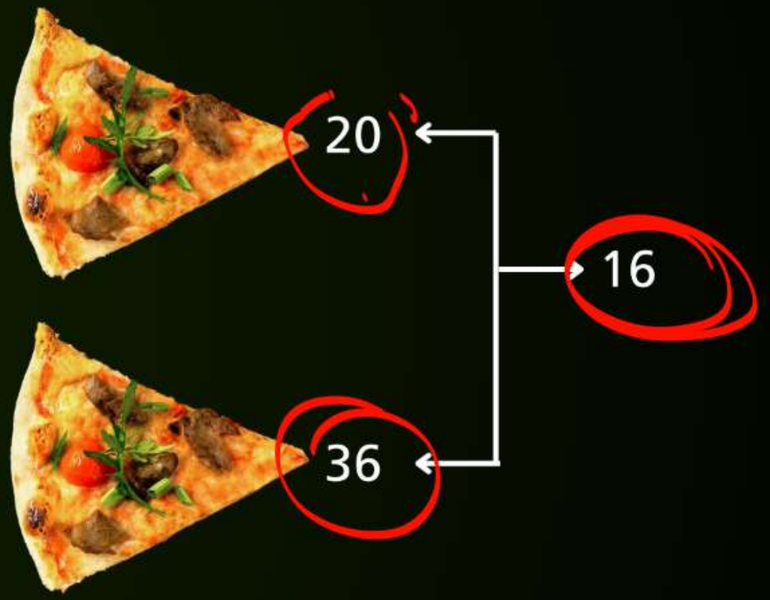
MARGINAL UTILITY (MU)

- Marginal utility is the additional utility derived from the consumption of one more unit of the given commodity.

$$MU_n = TU_n - TU_{n-1}$$

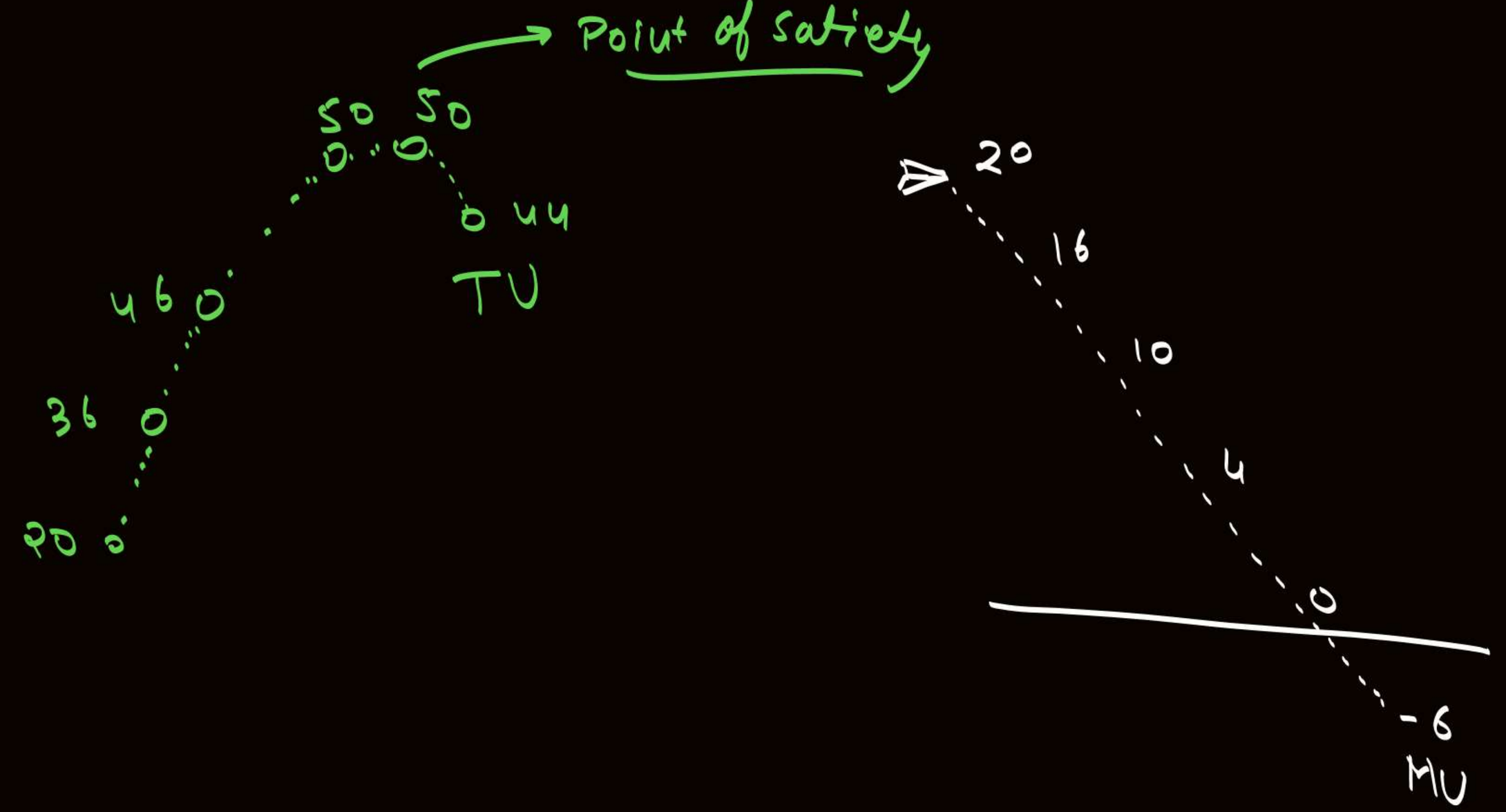
- One more way to measure utility

$$MU = \frac{\text{Change in Total Utility}}{\text{Change in number of units}} = \frac{\Delta TU}{\Delta Q}$$



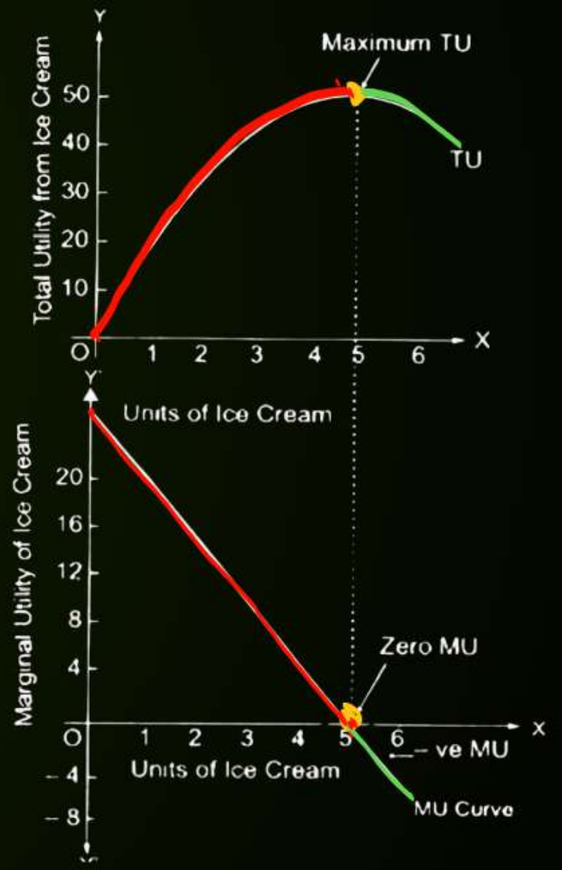
1 Slice 2 Slice = 1 Additional
20 utils. − 36 utils = 16 utils

ICE-CREAMS CONSUMED	MARGINAL UTILITY (MU)	TOTAL UTILITY (TU)
1	20	20
2	16	20 + 16 = 36
3	10	20 + 16 + 10 = 46
4	4	20 + 16 + 10 + 4 = 50
5	0	20 + 16 + 10 + 4 + 0 = 50
6	-6	20 + 16 + 10 + 4 + 0 + (-6) = 44


Point of satiety
20
16
10
4
0
-6
MU
50
50
44
TU
46
36
20

RELATION BETWEEN TU & MU

- TU starts from origin / increases at diminishing rate / reaches top / starts falling.
- MU starts from top / falling (DMU) / becomes 0 / then negative.
- When TU is rising / MU is falling but positive.
- When TU is at top / MU is 0.
- When TU is falling / MU is negative.



LAW OF DIMINISHING MARGINAL UTILITY

- Law of diminishing marginal utility (DMU) states that as we consume more and more units of a commodity, the utility derived from each successive unit goes on decreasing.
- This law was first given by a German Economist H.H. Gossen.
- That is why, it is also known as 'Gossen's first law of consumption'.





16 10 4 0 -6

ASSUMPTIONS OF LAW OF DIMINISHING MARGINAL UTILITY

- Cardinal measurement of utility- It is assumed that utility can be measured and a consumer can express his satisfaction in quantitative terms such as 1, 2, 3, etc).
- Monetary measurement of utility- It is assumed that utility is measurable in monetary terms.

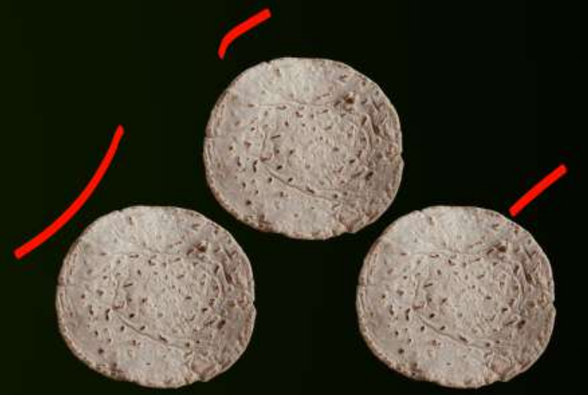




- Consumption of reasonable quantity: It is assumed that a reasonable quantity of the commodity is consumed



- Continuous consumption: It is assumed that consumption is a continuous process.



- Rational consumer: The consumer is assumed to be rational who measures, calculates and compares the utilities of different commodities and aims at maximising total satisfaction.

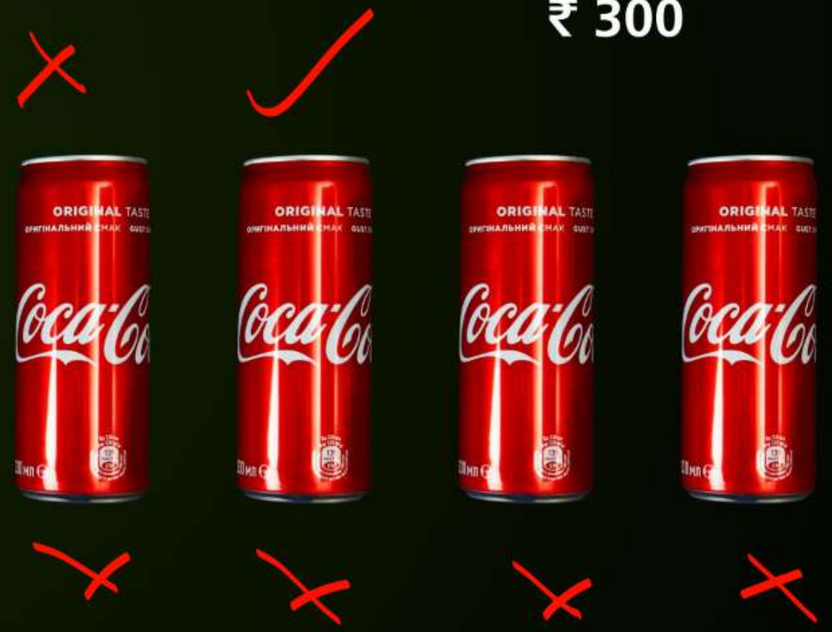


- **Fixed Income and prices:** It is assumed that income of the consumer and prices of the goods which the consumer wishes to purchase remain constant.

- **No change in Quality:** Quality of the commodity consumed is assumed to be uniform.



₹ 300



CONSUMER'S EQUILIBRIUM

Equilibrium means a state of rest or a position of no change.
Consumer's Equilibrium refers to the situation when a consumer is having maximum satisfaction with limited income and has no tendency to change his way of existing expenditure.



Consumer's equilibrium under two different situations:

- Consumer spends his entire income on a Single Commodity.
- Consumer spends his entire income on Two Commodities.

Consumer's Equilibrium in case of Single Commodity

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.





Consumer's Equilibrium in case of Single Commodity

The number of units to be consumed of the given commodity by a consumer depends on 2 factors:

- Price of the given commodity
- Expected utility (Marginal Utility) from each successive unit.



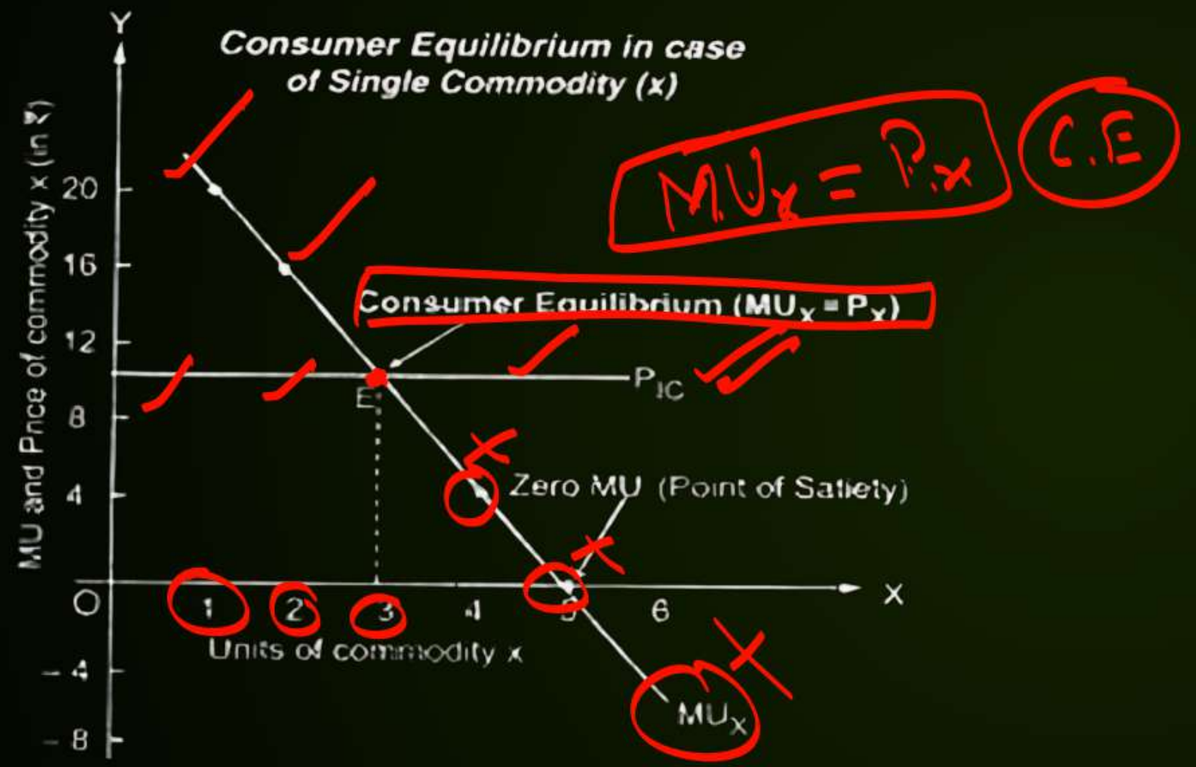
Equilibrium Condition

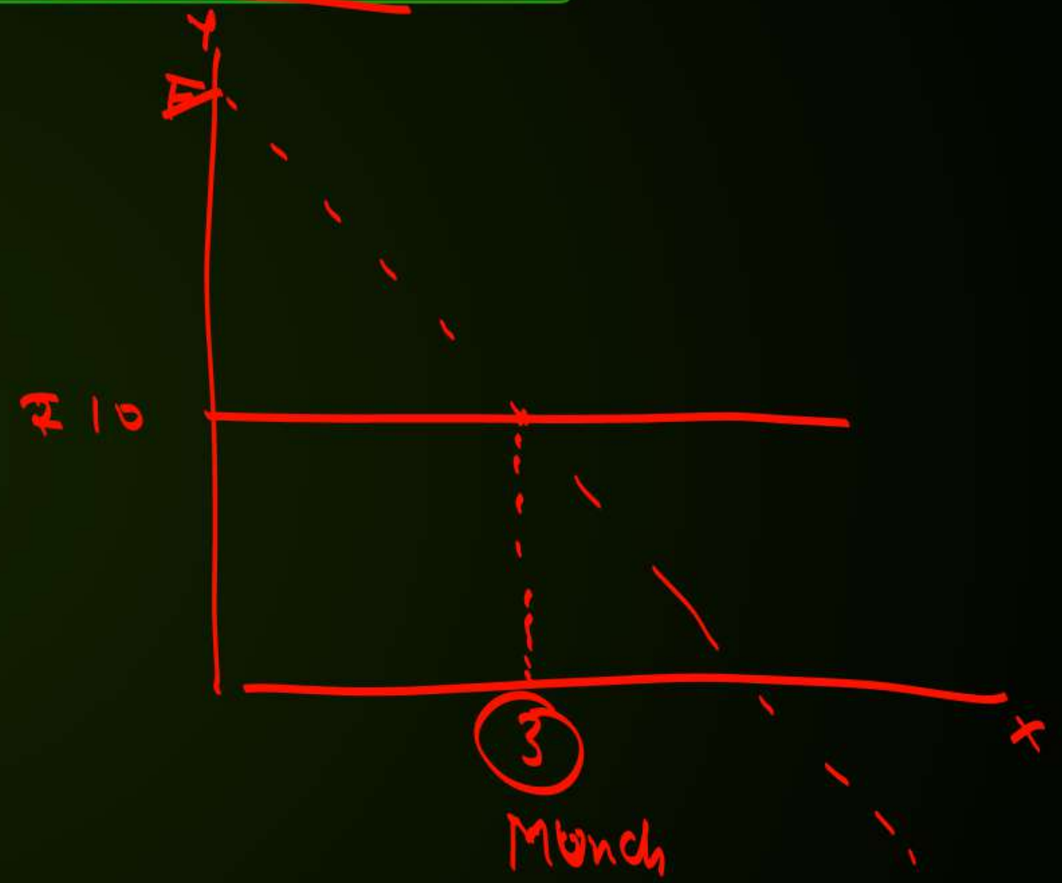
Marginal Utility (MUx) is equal to Price (Px) paid for the commodity; i.e. MUx = Px .

Consumer's Equilibrium in case of Single Commodity

UNITS OF X	PRICE (P_X) (₹)	MARGINAL UTILITY (UTILS)	REMARKS
1	10	20	$MU_x > P_x$, so consumer will increase the consumption
2	10	16	
3	10	10	Consumer's Equilibrium ($MU_x = P_x$)
4	10	4	$MU_x < P_x$, so consumer will decrease the consumption
5	10	0	
6	10	-6	

Consumer's Equilibrium in case of Single Commodity





Consumer's Equilibrium in case of Two Commodities

Law of Equi-marginal utility is also known as:

- Law of Substitution;
- Law of maximum satisfaction;
- Gossen's Second Law.





Consumer's Equilibrium in case of Two Commodities

There are two necessary conditions to attain Consumer's Equilibrium in case of Two Commodities:

- The ratio of Marginal Utility to Price is same in case of both the goods.

$$\frac{MU_x}{P_x} = \frac{MU_y}{P_y} = MU_M \quad \text{or} \quad \frac{MU_X}{MU_y} = \frac{p_X}{P_y}$$

When P_x , P_y , then the equilibrium condition can be restated as: $MU_y = MU$

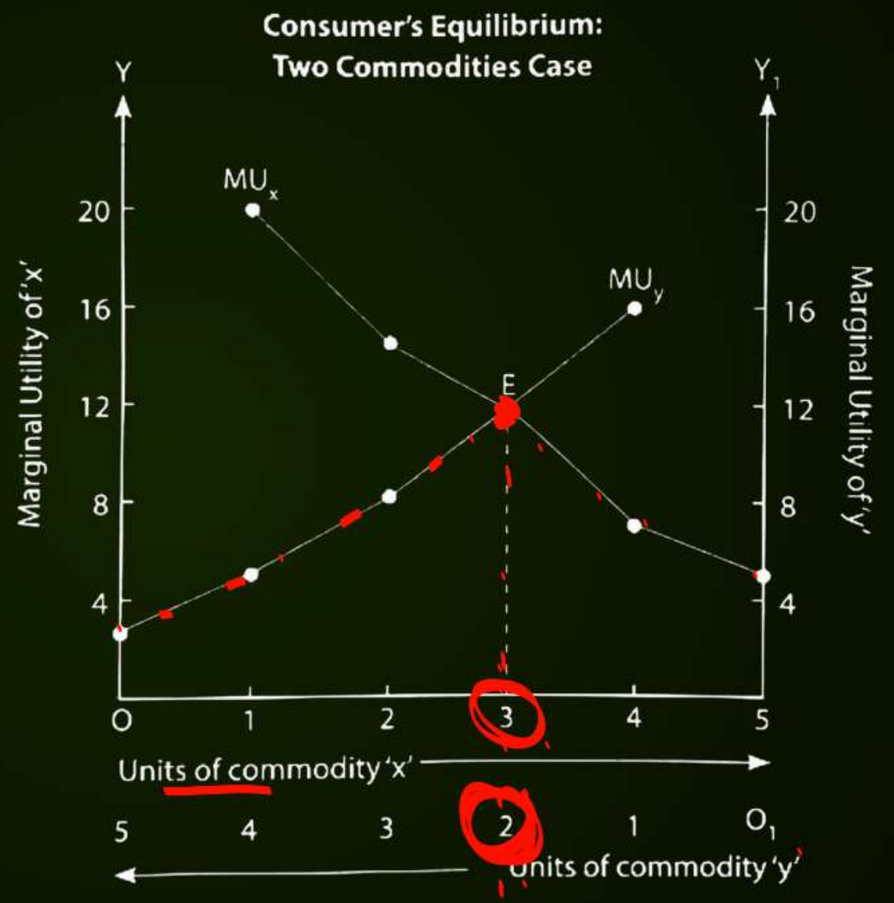
MU falls as consumption increases

A consumer in consumption of two commodities will be at equilibrium when he spends his limited income in such a way that the ratios of marginal utilities of two commodities and their respective prices are equal and MU falls as consumption increases.

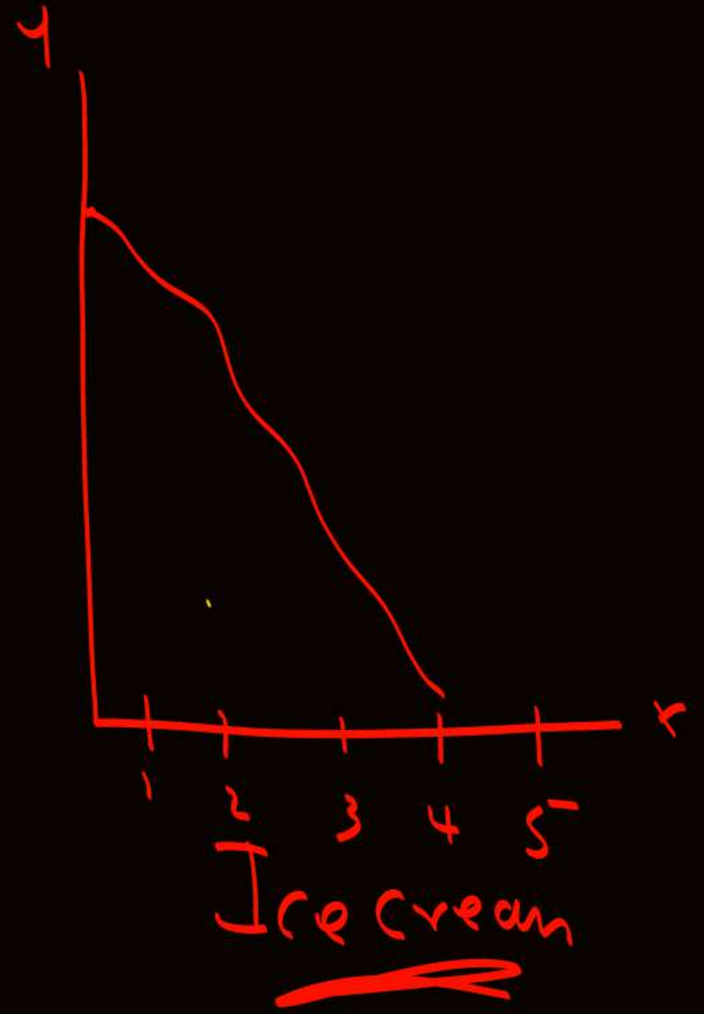
$MU_x = MU_y$
$12 = 12$
→ C.E

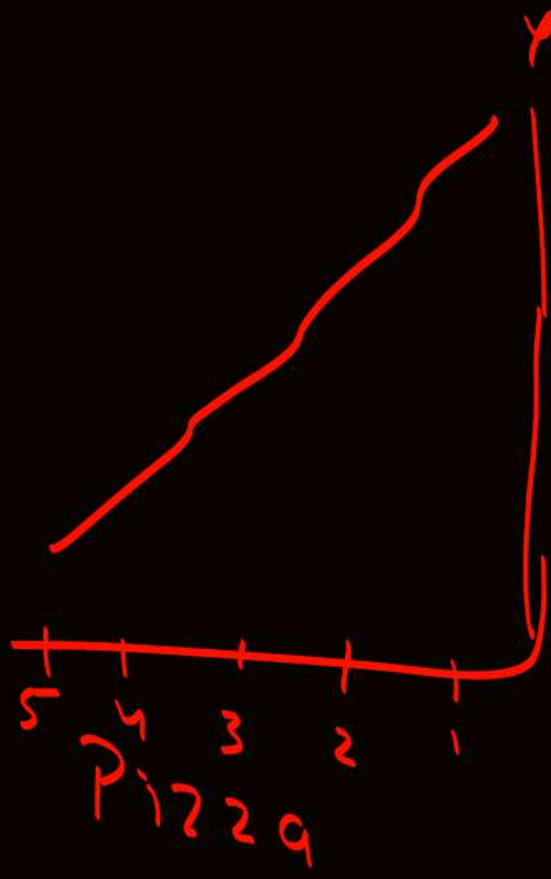
Ice Cream = Pizza

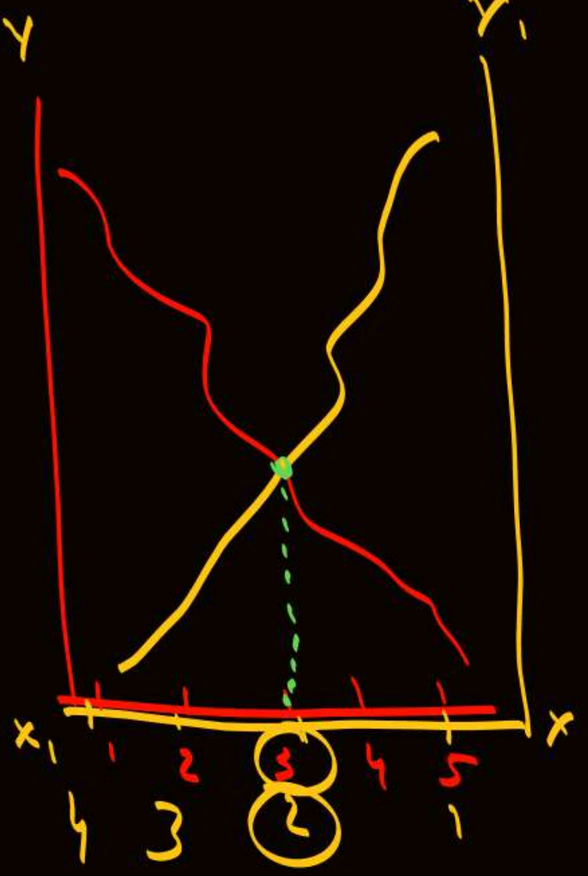
Units	MU of commodity 'X' (in units)	MU of commodity 'y' (in units)
1	20	16
2	14	12
3	12	8
4	7	5
5	5	3











$12 = 12$

$MU_x = MU_y$

Red = Ice cream = 3

Yellow = Pizza = 2

ORDINAL UTILITY APPROACH

(Indifference Curve or Hicksian Analysis)

- Modern economists disregarded the concept of 'cardinal measure of utility.
- According to them, a consumer can rank various combinations of goods and services in order of his preference.
- Ordinal utility is the utility expressed in ranks.
- More realistic and improved.



Indifference Curve

Same Satisfaction

100 utils

1 orange 4 Banana

(1)

100 utils

2 oranges 2 Banana

(2)

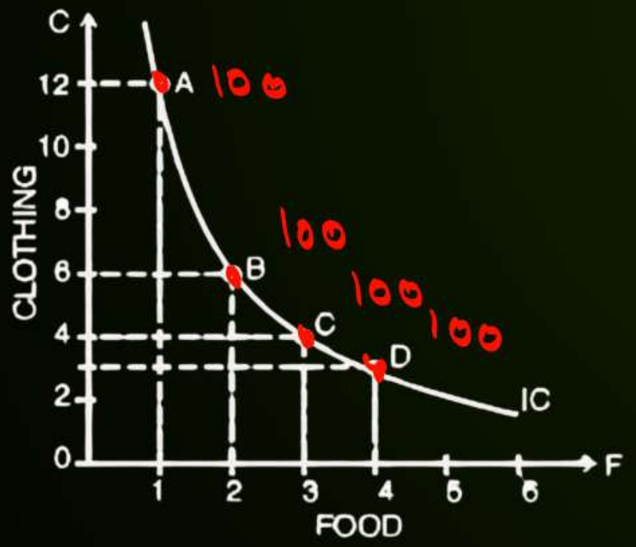
100 utils

3 oranges 1 Banana

(3)

MEANING OF INDIFFERENCE CURVE

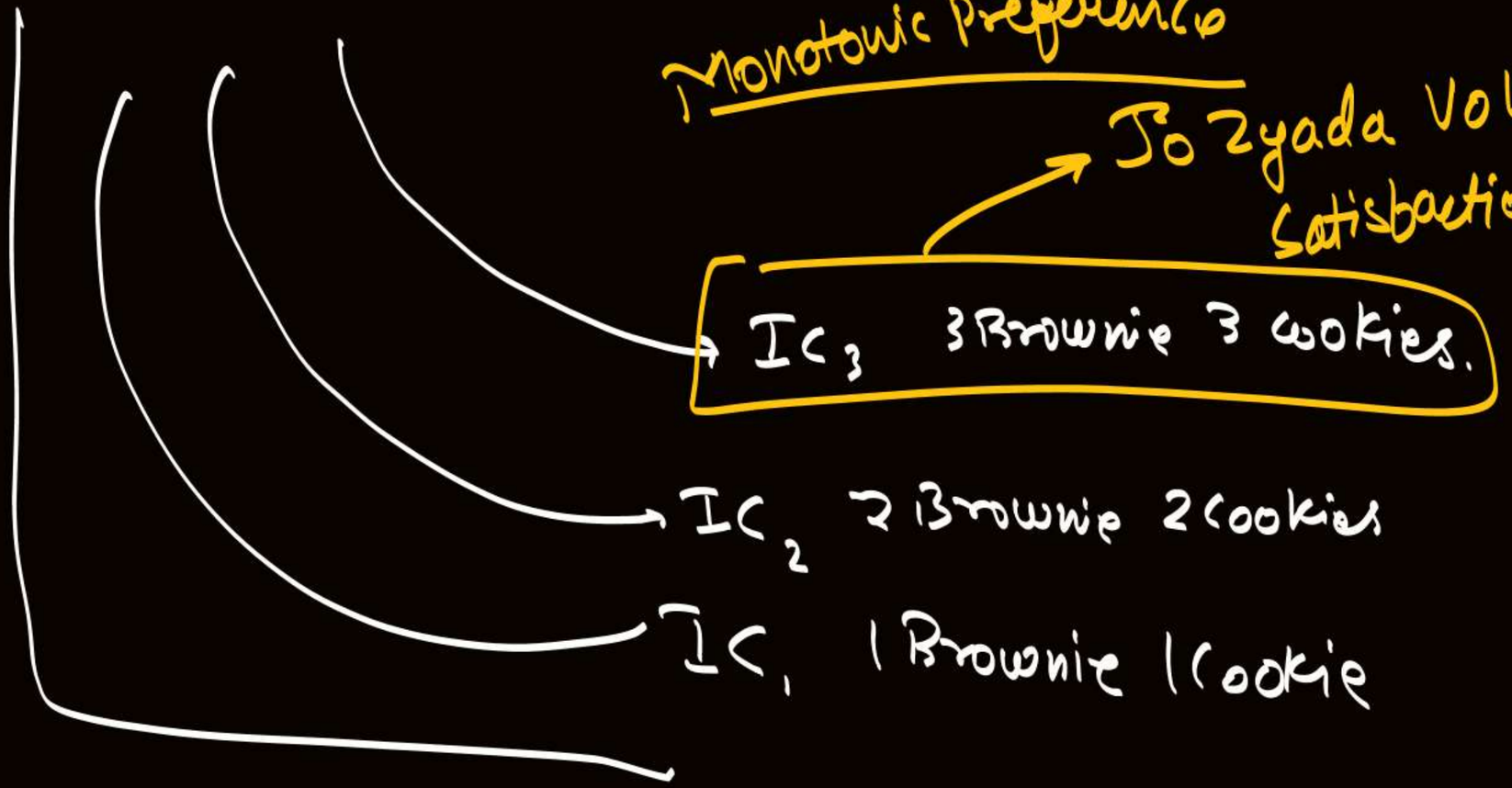
- Indifference curve refers to the graphical representation of various alternative combinations of bundles of two goods** among which the consumer is indifferent.
- An indifference curve is the locus of all the points, representing different combinations, that are equally satisfactory to the consumer.



IMPORTANT POINTS

- Increase of one Good requires Decrease of other good and vice-versa.
- Why Does it Happen?





* Higher the IC, Higher level of satisfaction

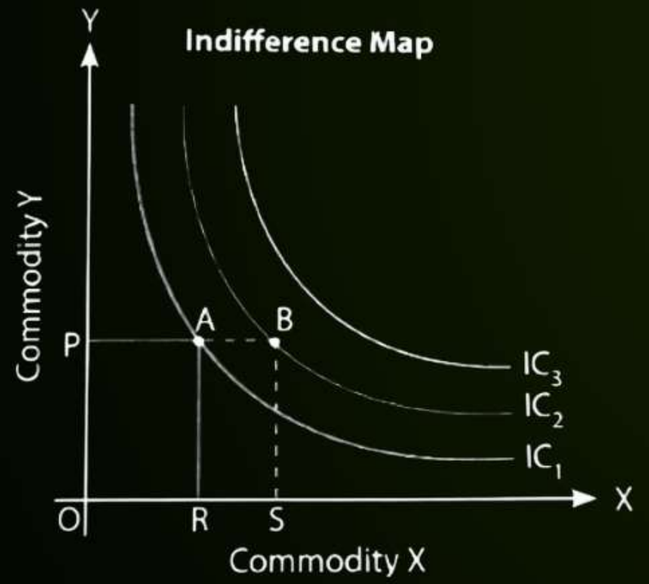
MONOTONIC PREFERENCES

- Monotonic preference means that a rational consumer always prefers more of a commodity as it offers him a higher level of satisfaction.
- Suppose two different bundles are: 1st: (10A, 10B); and 2nd: (7A, 7B).
- If 2 bundles are: 1: (10A, 7B); 2nd: (9A, 7B).



INDIFFERENCE MAP → Family of I.C.

- Indifference Map refers to the family of indifference curves that represent consumer preferences over all the bundles of the two goods.
- Higher Indifference curves represent higher levels of satisfaction because of monotonic preference.

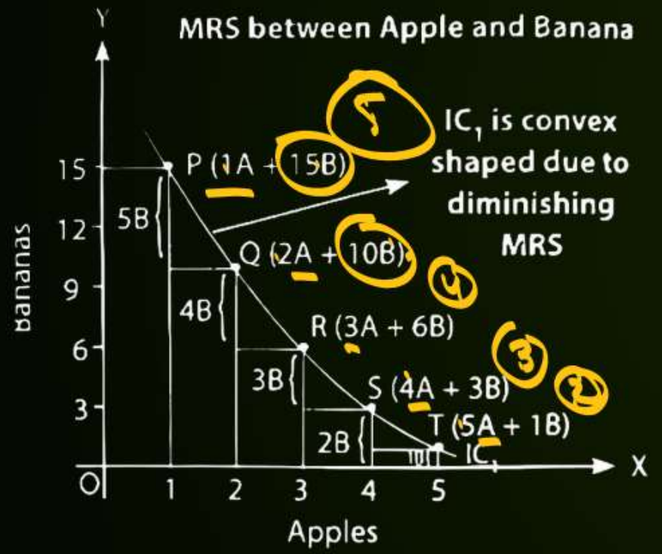






MARGINAL RATE OF SUBSTITUTION (MRS)

- MRS refers to the rate at which the commodities can be substituted with each other, so that total satisfaction of the consumer remains the same.





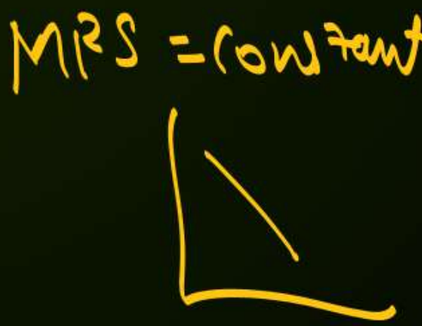


- It means, MRS measures the slope of indifference curve.

Combination	Apples (A)	Banana (B)	MRS_{AB}
P	1	15	-
Q	2	10	5B:1A
R	3	6	4B: 1A
S	4	3	38:1A
T	5	1	28:1A







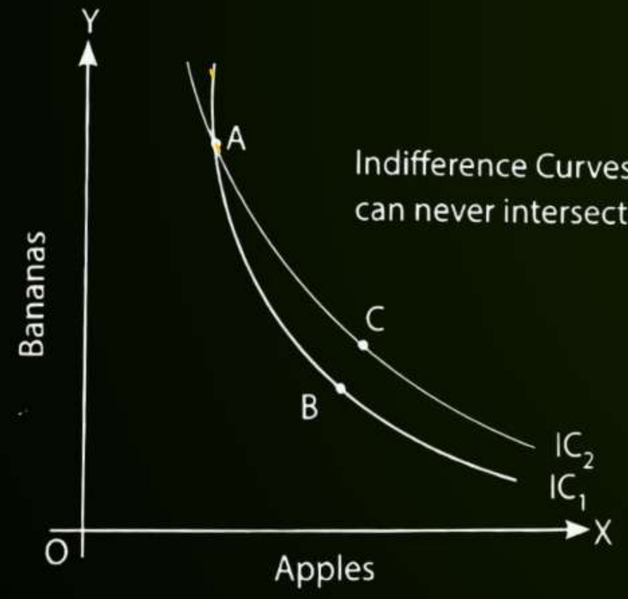
ASSUMPTIONS OF INDIFFERENCE CURVE

- Two commodities
- Non Satiety
- Ordinal Utility
- Diminishing marginal rate of substitution
- Rational Consumer



PROPERTIES OF INDIFFERENCE CURVE

- Indifference curves are always convex to the origin.
- Indifference curve slope downwards.
- Higher Indifference curves represent higher levels of satisfaction.
- Indifference curve can never intersect each other.





BUDGET LINE

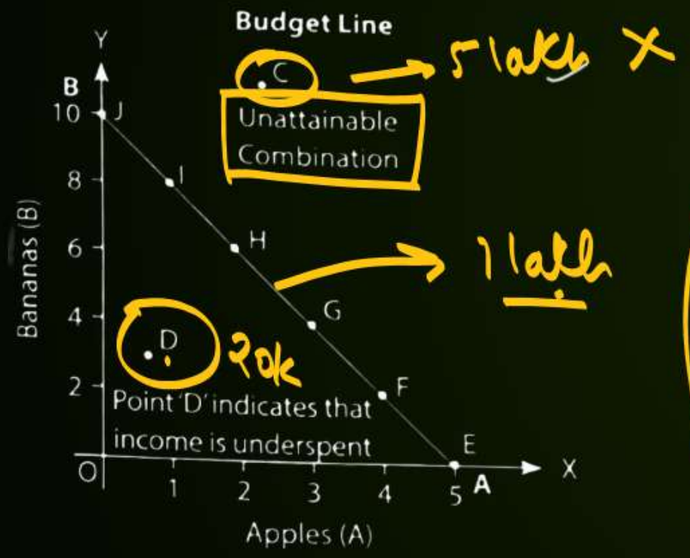
- Budget line is a graphical representation of all possible combinations of two goods which can be purchased with given income and prices, such that the cost of each of these combinations is equal to the money income of the consumer.





BUDGET SET

- Budget set is the set of all possible combinations of the two goods which a consumer can afford, given his income and prices in the market.





Budget Set

Income = ₹20

Combination of Apples & Bananas	Apples (A) (₹ 4 each)	Banana (B) (₹ 2 each)	Money spent = Income (₹)
E	5	0	(5 x 4) + (0 x 2) = 20
F	4	2	(4 x 4) + (2 x 2) = 20
G	3	4	(3 x 4) + (4 x 2) = 20
H	2	6	(2 x 4) + (6 x 2) = 20
I	1	8	(1 x 4) + (8 x 2) = 20
J	0	10	(0 x 4) + (10 x 2) = 20

ALGEBRAIC EXPRESSION OF BUDGET LINE

- Budget set is the set of all possible combinations of the two goods which a consumer can afford, given his income and prices in the market.

$$M = (P_A \times Q_A) + (P_B \times Q_B)$$

Where,

M = Money income;

Q_A = Quantity of apples (A);

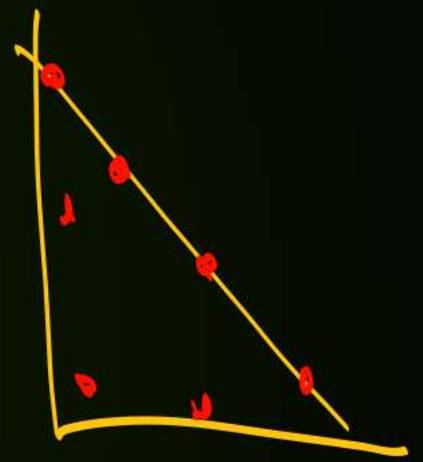
Q_B = Quantity of bananas (B);

P_A = Quantity of bananas (B);

P_B = Quantity of bananas (B);

DIFFERENCE BETWEEN BUDGET LINE & BUDGET SET

SR.NO.	Budget Line	Budget Set
1	Budget Line include all the possible bundles that the consumer can purchase by spending his entire income at the given prices.	Budget Set include all the possible bundles which cost less than or equal to consumer's money income at the given prices.
2	The bundles of budget line lie only on the budget line.	The bundles of budget set lie either on or below the budget line.
3	Budget Line is expressed as: $M = (P_A \times Q_A) + (P_B \times Q_B)$	Budget Set is expressed as: $M \geq (P_A \times Q_A) + (P_B \times Q_B)$



SLOPE OF THE BUDGET LINE

Slope of Budget Line = $\frac{\Delta B}{\Delta A}$

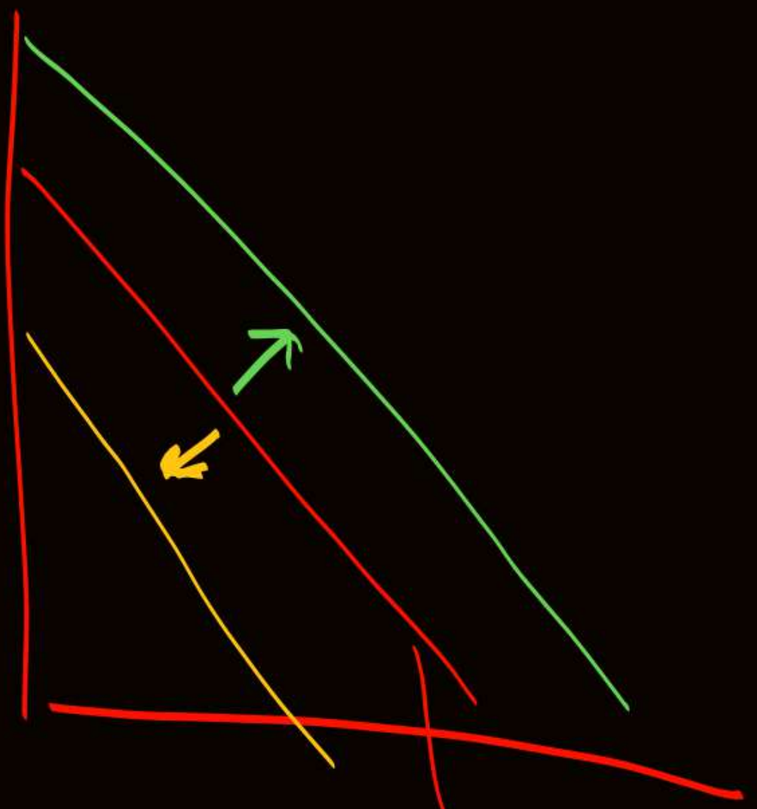
Slope of Budget Line is denoted by Market Rate of Exchange (MRE)

Properties of Budget Line

- Budget Line is Downward Sloping
- Budget Line is a straight line

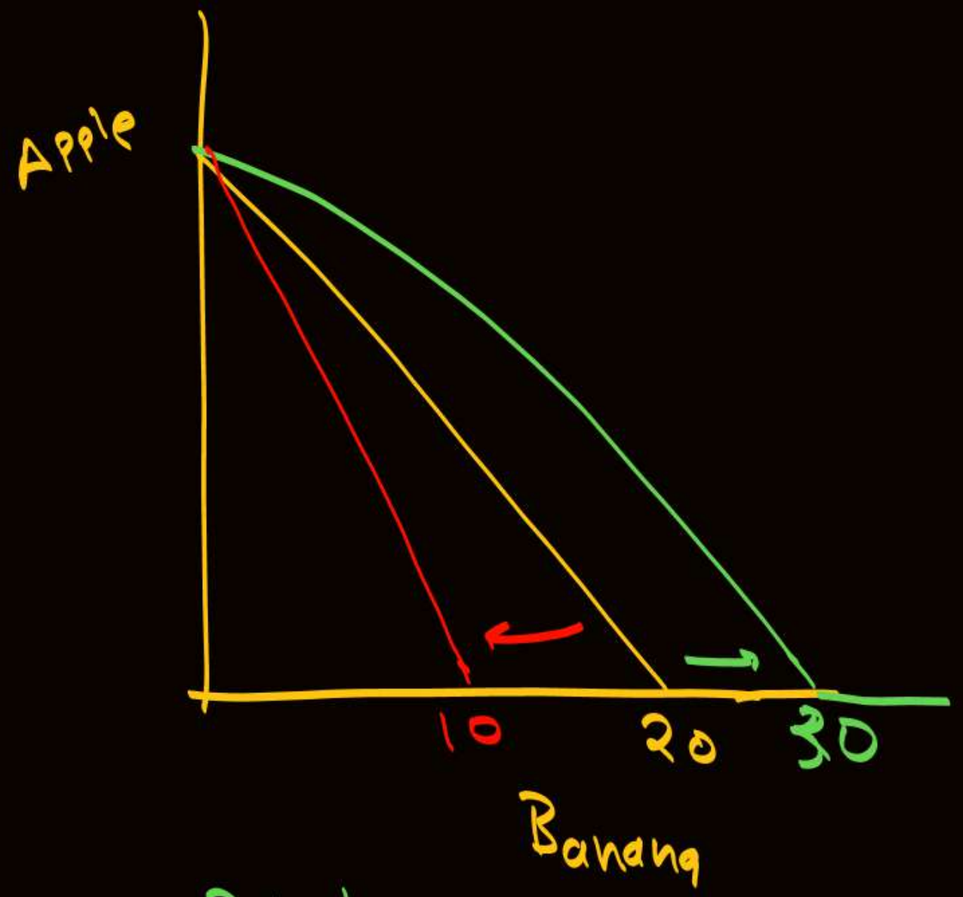


Shift in Budget line



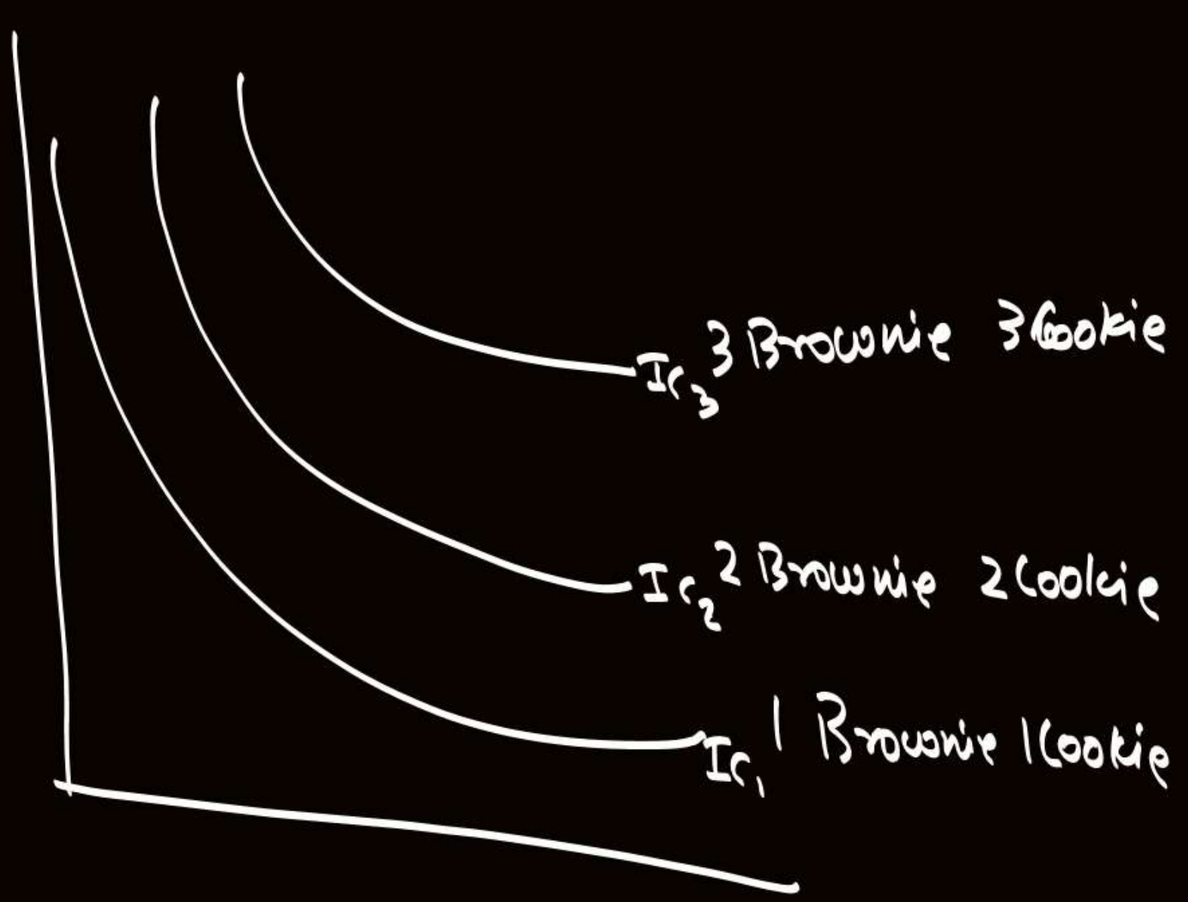
50k = Income
1L = Income ↑
20k = Income ↓

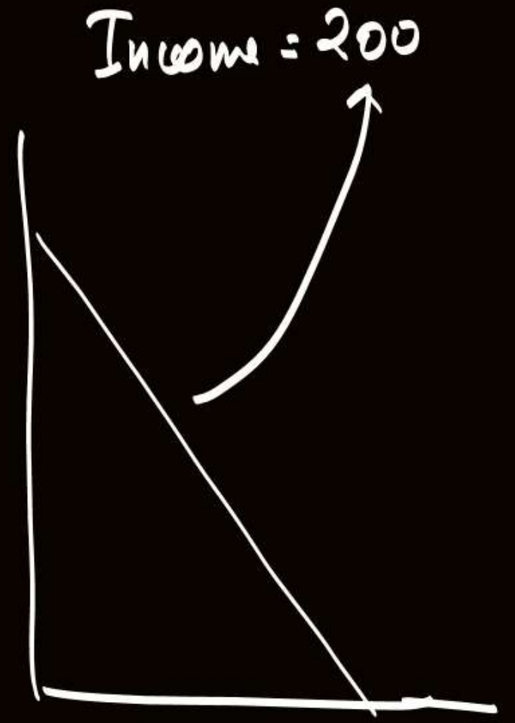
Rotation in Budget line

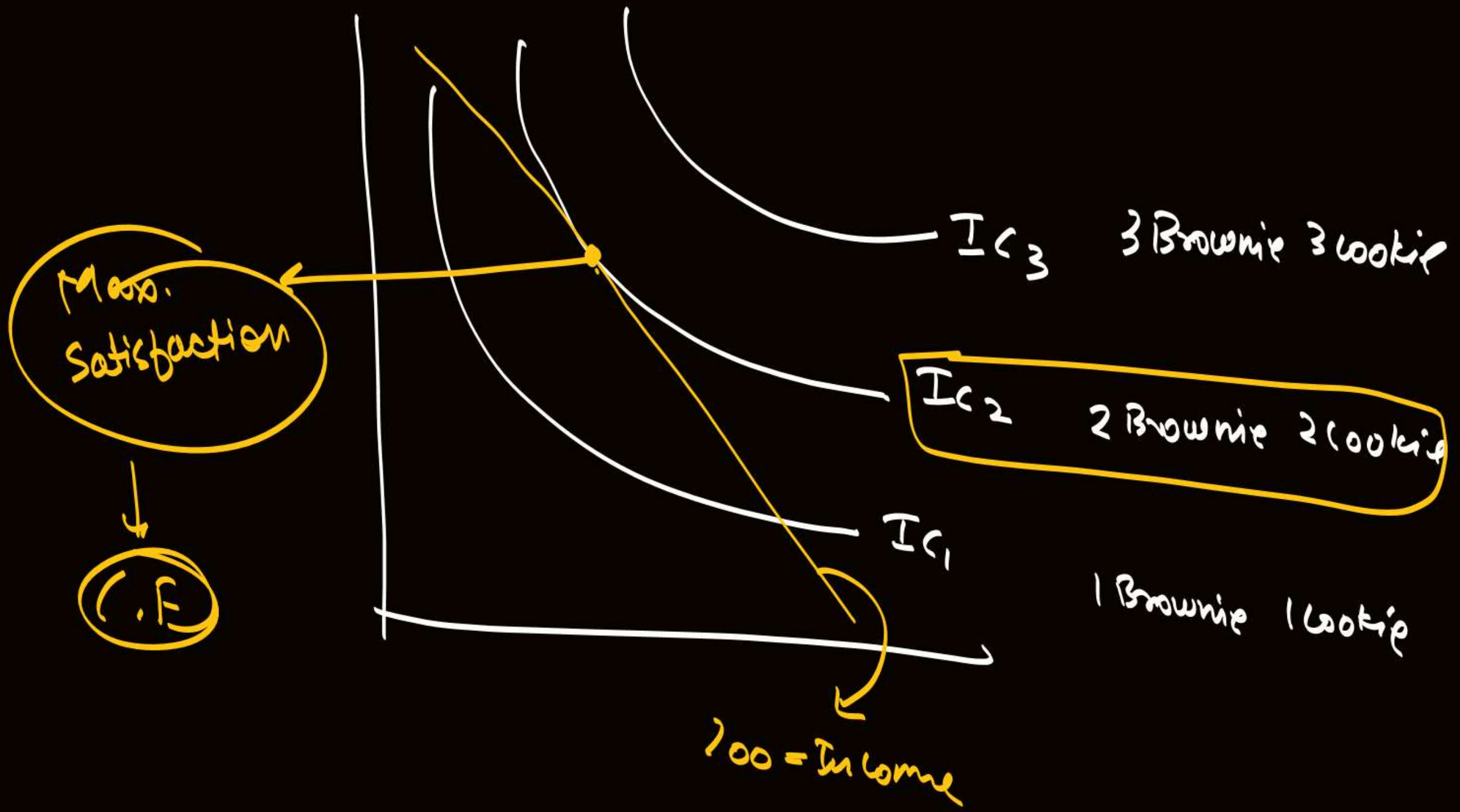


Price ↓ ₹10 → ₹5 ↓

Price ↑ ₹10 → ₹20

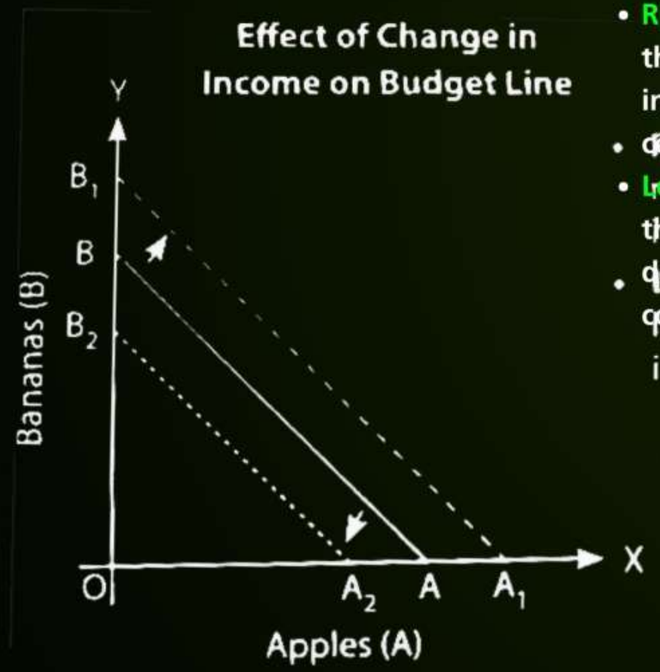

IC_3 3 Brownie 3 Cookie
IC_2 2 Brownie 2 Cookie
IC_1 1 Brownie 1 Cookie


Income : 200


Max. Satisfaction
C.E
IC_3
3 Brownie 3 Cookie
IC_2
2 Brownie 2 Cookie
IC_1
1 Brownie 1 Cookie
100 = Income

SHIFT IN BUDGET LINE

- Effect of a Change in the Income of Consumer: If there is any change in the income, assuming no change in prices of apples and bananas, then the budget line will shift.



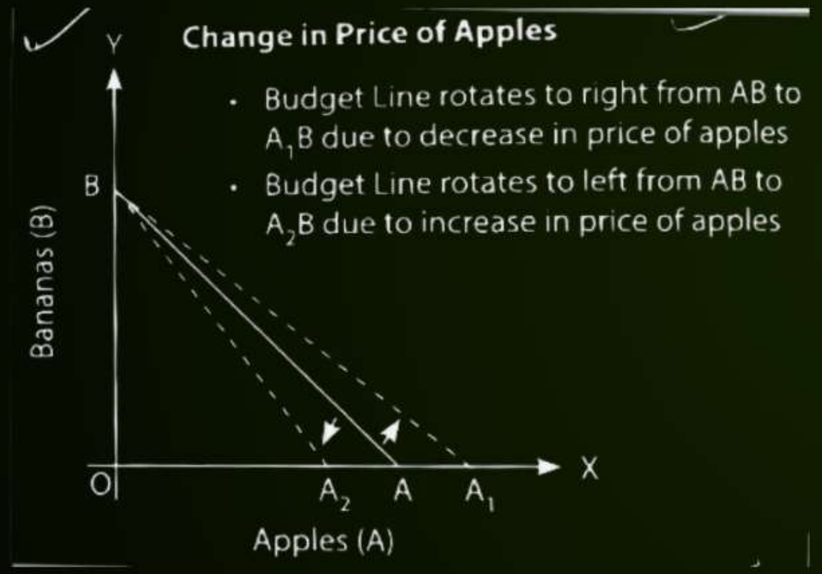
- **Rightward Shift:** Budget Line shifts to the right from AB to A,B, due to increase in income (Prices remaining constant).
- **Leftward Shift:** Budget Line shifts to the left from AB to A2B2 due to decrease in income (Prices remaining constant).

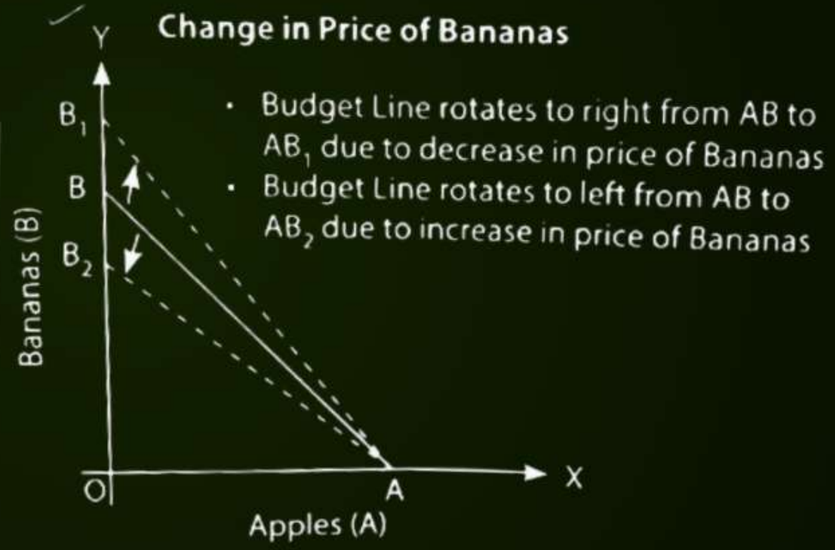




Effect of change in Prices (Apples and Bananas):

- Change in the Price of commodity on X-axis (Apples)
- Change in the Price of commodity on Y-axis (Bananas)







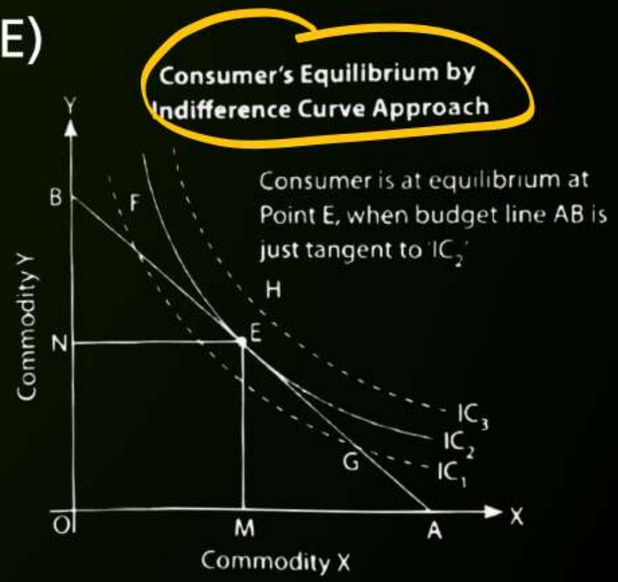


CONSUMER'S EQUILIBRIUM BY INDIFFERENCE CURVE ANALYSIS

The point of maximum satisfaction is achieved by studying indifference map and budget line together.

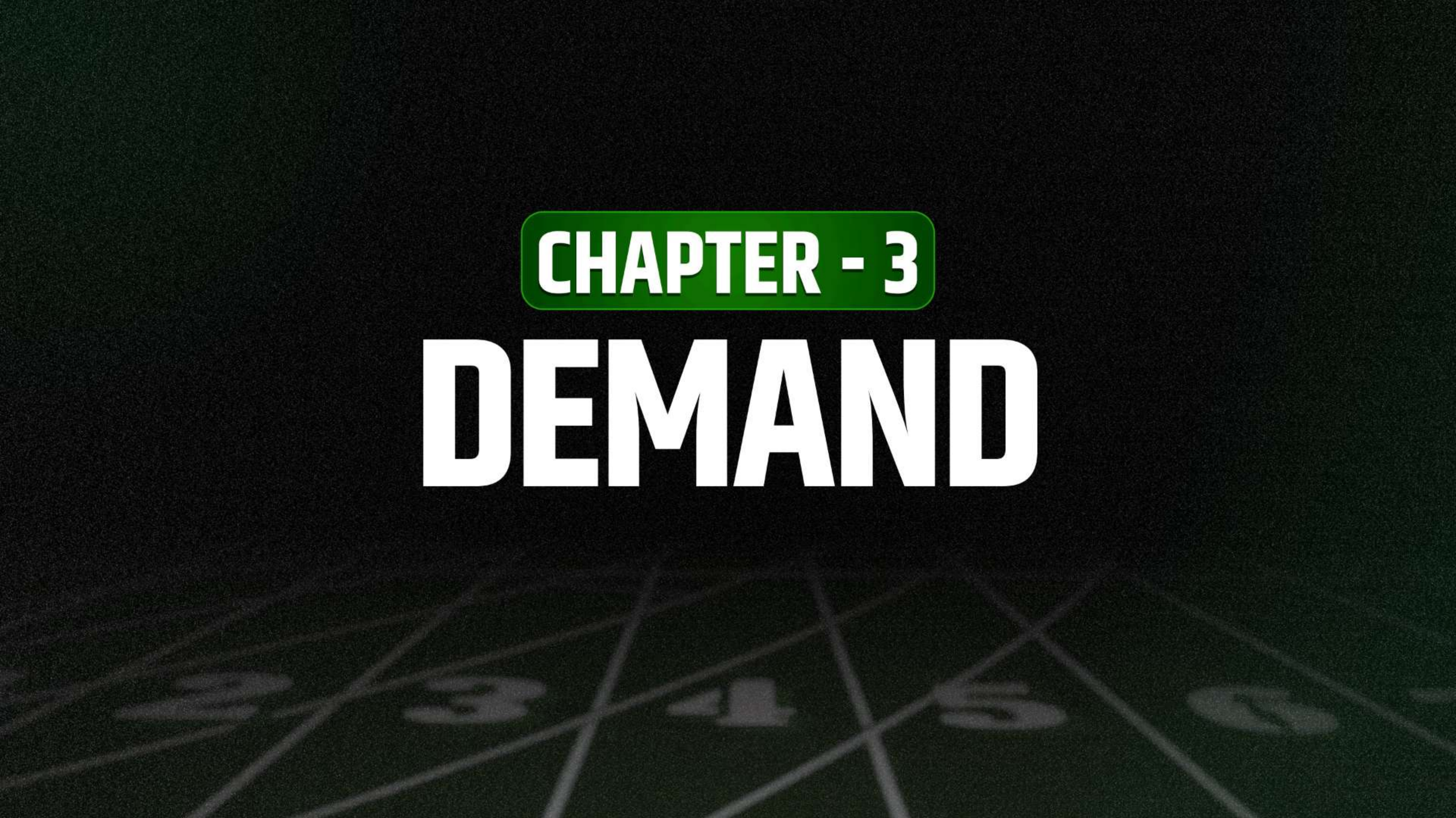
Conditions

- MRS = Ratio of Prices or $\frac{P_x}{P_y}$ = Market Rate of Exchange (MRE)
- MRS continuously falls



DIFFERENCES BETWEEN CARDINAL & ORDINAL UTILITY APPROACHES

ASPECTS	CARDINAL UTILITY APPROACHES	ORDINAL UTILITY APPROACHES
Meaning	Satisfaction is measured in numbers (utils).	Satisfaction is ranked based on preferences (no numbers).
Measurement of Utility	Assumes utility can be measured precisely.	Assumes utility cannot be measured, only ranked.
Key Concept	Focuses on the absolute level of satisfaction.	Focuses on the relative preference between goods.
Approach Type	Quantitative.	Qualitative.
Example	“Consuming a chocolate gives 10 utils of satisfaction.”	"I prefer chocolate over ice cream, but no exact measure."


CHAPTER - 3
DEMAND

DETERMINANTS OF DEMAND (INDIVIDUAL DEMAND)

Desire means a mere wish to have a commodity.

Want is that desire which is backed by the ability and willingness to satisfy it.



Demand is the quantity of a commodity that a consumer is willing and able to buy, at each possible price during a given period of time.



TYPES OF DEMAND

Individual Demand





Market Demand





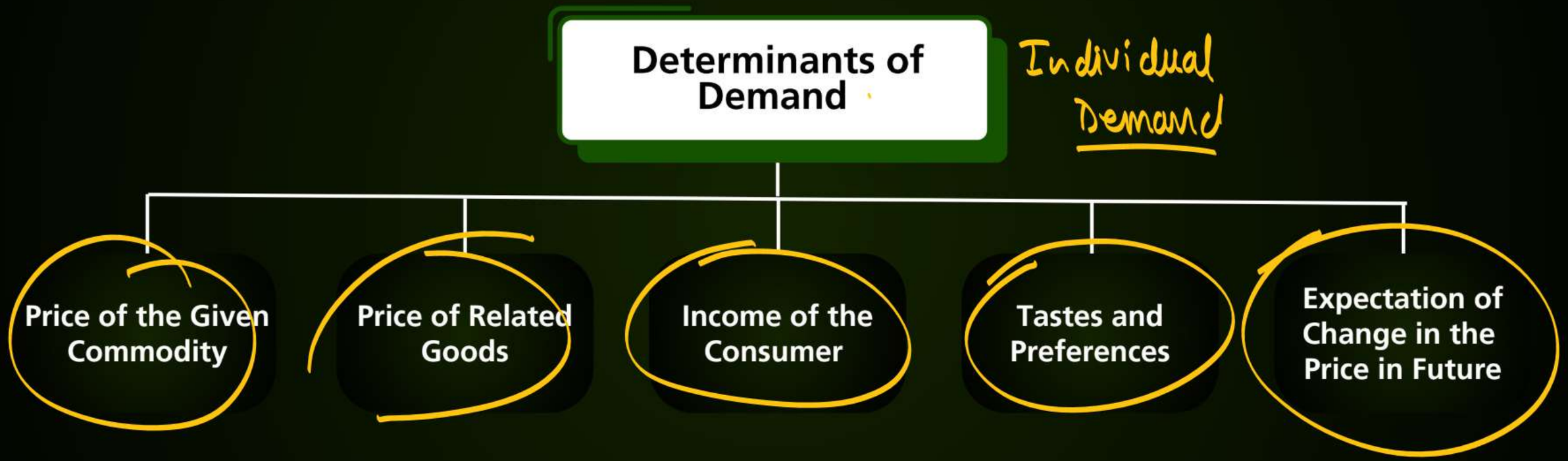
DETERMINANTS OF DEMAND (INDIVIDUAL DEMAND)

Individual Demand

Individual demand refers to the quantity of a commodity that a consumer is willing and able to buy, at each possible price during a given period of time.

Market Demand

Market demand refers to the quantity of a commodity that all consumers are willing and able to buy, at each possible price during a given period of time.


Determinants of Demand
Individual Demand
Price of the Given Commodity
Price of Related Goods
Income of the Consumer
Tastes and Preferences
Expectation of Change in the Price in Future

Price of the Given Commodity

It is the most important factor affecting demand for the given commodity Generally, there exists an inverse relationship between price and quantity demanded. It means, as price increases, quantity demanded falls due to decrease in the satisfaction level of consumers.



TYPES OF RELATED GOODS

Substitute goods

Substitute goods are those goods which can be used in place of one another for satisfaction of a particular want.



TEA



COFFEE

Complementary goods

Complementary goods are those goods which are used together to satisfy a particular want.



CAR



PETROL

INCOME OF A CONSUMER

Normal Goods

Increase in income leads to rise in its demand, while a decrease in income reduces the demand.



RS. 1000

Inferior Goods

Increase in income reduces the demand, while a decrease in income leads to rise in demand.



RS. 100

Tastes and Preferences

Tastes and preferences of the consumer directly influence the demand for a commodity. If a commodity is in fashion or is preferred by the consumers, then demand for such a commodity rises. On the other hand, demand for a commodity falls, if the consumers have no taste for that commodity.

T↑ D↑



KOREAN FOOD

T↓ D↓



Expectation of Change in the Price in Future

If the price of a certain commodity is expected to increase in near future, then people will buy more of that commodity than what they normally buy There exists a direct relationship between expectation of change in the prices in future and change in demand in the current period.



5 + 3 = 8

DETERMINANTS OF MARKET DEMAND

Size and Composition of Population

Increase in population raises the market demand, while decrease in population reduces the market demand.



P↑ D↑ P↓ D↓

Y↑ C↑ Y↓ C↓

Season and Weather

The seasonal and weather conditions also affect the market demand for a commodity.

S↑



S↓

D↑



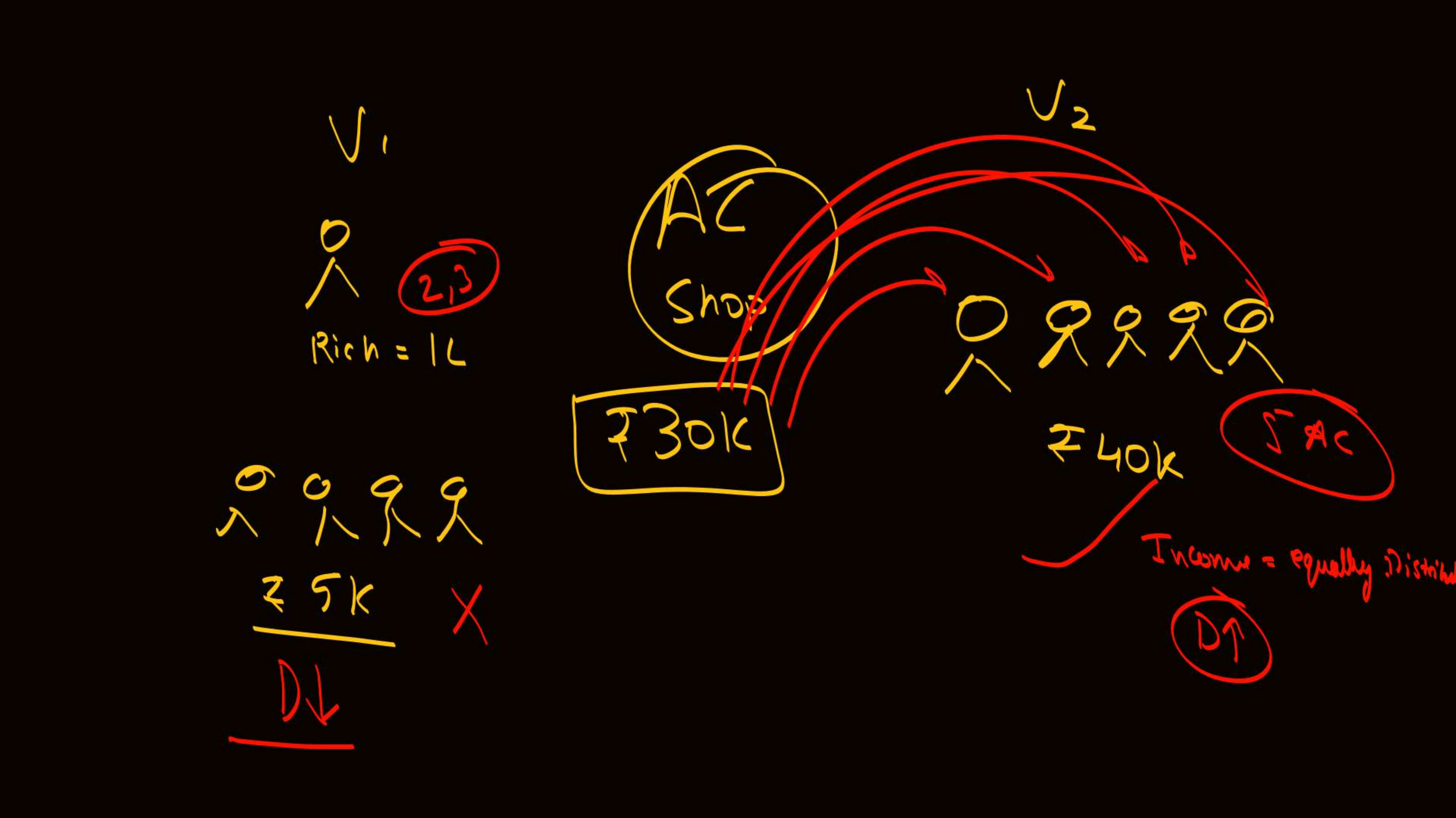
D↓

Distribution of Income

If income in the country is equitably distributed, then market demand for commodities will be more. However, if income distribution is uneven, i.e. people are either very rich or very poor, then market demand will remain at lower level.






V1
2,3
Rich = 1L
₹5k
X
D↓
V2
AC
Shop
₹30k
₹40k
5 AC
Income = equally Distribu
D↑

DEMAND FUNCTIONS

Demand function shows the relationship between quantity demanded for a particular commodity and the factors influencing it.

Individual Demand Function - Individual demand function refers to the functional relationship between individual demand and the factors affecting individual demand. It is expressed as $D_x = f(P_x, P_r, Y, T, F)$

Where,

D_x = Demand for Commodity x

P_x = Price of the given Commodity x

P_r = Prices of Related Goods;

Y = Income of the Consumer;

T = Tastes and Preferences;

F = Expectation of Change in Price in future

Demand function is just a short-hand way of saying that quantity demanded (D_x), which is on the left- hand side, is assumed to depend on the variables that are listed on the right-hand side.

Market Demand Function - Market demand function refers to the fuctional relationship between market demand and the factors affecting marked demand.

$$D_x = f(P_x, P_r, Y, T, F, P_e, S, D)$$

D_x = Market demand of commodity x;

P_r = Prices of Related Goods;

T = Tastes and Preferences;

P_e = Future

D = Size and Composition of population;

= Distribution of Income.

P_x = Price of the given Commodity x

Y = Income of the Consumer;

F = Expectation of Change in Price in

S

= Season and Weather;

DEMAND SCHEDULE



> Demand schedule is a tabular statement showing various quantities of a commodity being demanded at various levels of price, during a given period of time.

Individual Demand Schedule

It refers to a tabular statement showing various quantities of a commodity that a consumer is willing to buy at various levels of price, during a given period of time.

Market demand schedule

It refers to a tabular statement showing various quantities of a commodity that all the consumers are willing to buy at various levels of price, during a given period of time.

Next Toppers

Demand Schedule

Horizontal Summation

Individual Demand Schedule

Price in (₹)	Sanidhya Sir
5	1
4	2
3	3
2	4
1	5

Market Demand Schedule

Price in (₹)	Individual Demand (in units)		Market Demand (in units)
	Sanidhya Sir	Digraj Sir	
5	1	2	1 + 2 = 3
4	2	3	2 + 3 = 5
3	3	4	3 + 4 = 7
2	4	5	4 + 5 = 9
1	5	6	5 + 6 = 11



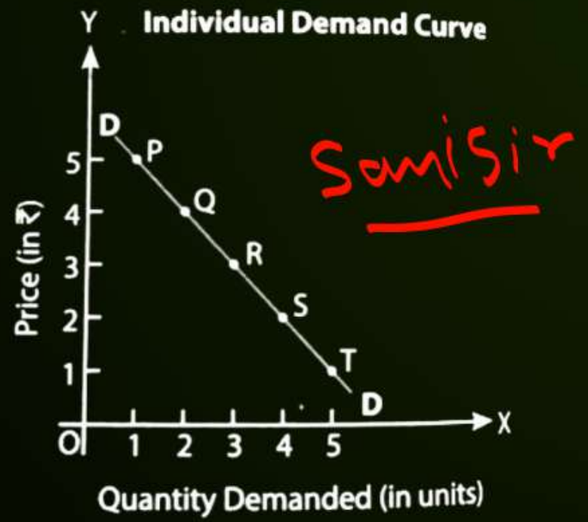


DEMAND CURVE

It is a graphical representation of demand schedule.

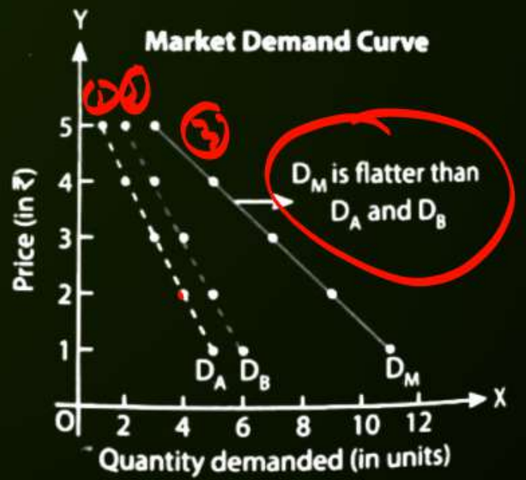
Individual Demand Curve

It refers to a graphical representation of individual demand schedule



Market Demand Curve

It refers to a graphical representation of market demand schedule. It is obtained by horizontal summation of individual demand curves.

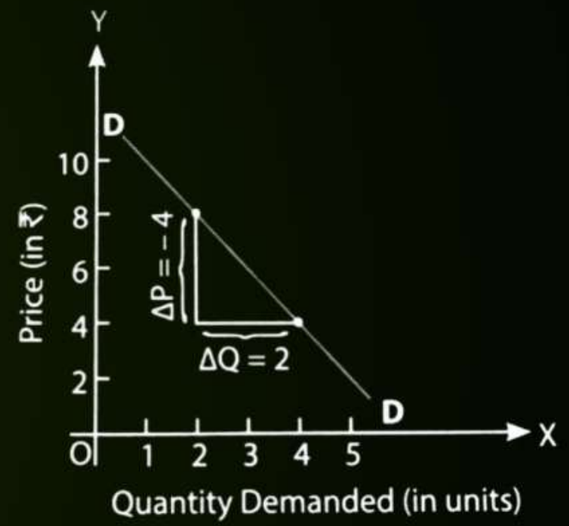


It is a graphical representation of demand schedule.

Slope of Demand Curve

Slope of a curve is defined as the change in the variable on the Y-axis divided by the change in the variable on the X-axis. So, the slope of the Demand Curve equals the Change in Price divided by the Change in Quantity.

$$\text{i.e. Slope of Demand Curve} = \frac{\text{Change in Price } (\Delta P)}{\text{Change in Quantity } (\Delta Q)}$$



P↑ D↓

4.

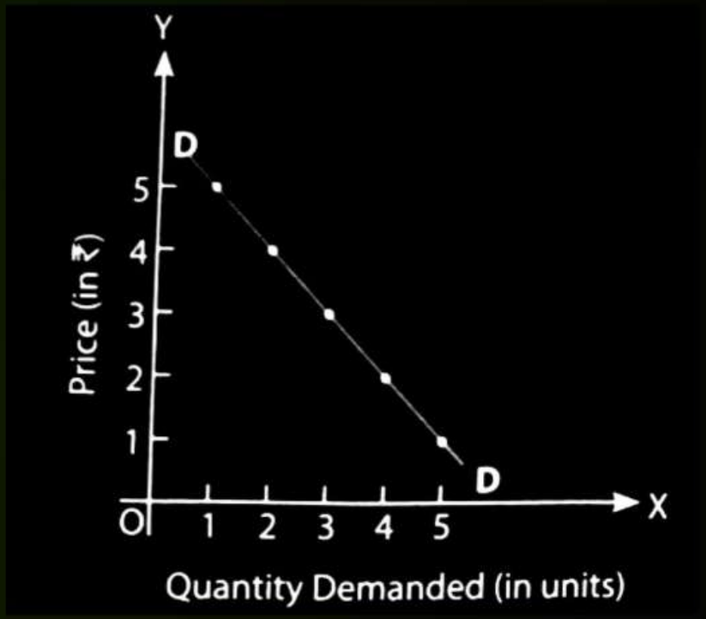
LAW OF DEMAND

P↑ D↓
P↓ D↑

Law of demand states the inverse relationship between price and quantity demanded, keeping other factors constant (ceteris paribus) This law is also known as 'First Law of Purchase'.

Assumption of Law of Demand

- Prices of substitute goods do not change.
- Prices of complementary goods remain constant.
- Income of the consumer remains the same.
- There is no expectation of change in price in the future.
- Tastes and preferences of the consumer remain the same.



Price ↑↓ Other factors

IMPORTANT FACTS ABOUT LAW OF DEMAND

- Inverse Relationship



- Qualitative not Quantitative



×

- No Proportional Relationship



PL 50% D↑ 50%

- One Sided





Price Dominate

P↑ D↓

P↓ D↓

REASONS OF LAW OF DEMAND

Law of Diminishing Marginal Utility

Law of diminishing marginal utility states that as we consume more and more units of a commodity, the utility derived from each successive unit goes on decreasing.

Substitution Effect

Substitution effect refers to substituting one commodity in place of other when it becomes relatively cheaper.

Income

Income effect refers to effect on demand when real income of the consumer changes due to change in price of the given commodity.

Additional Customers

When price of a commodity falls, many new consumers, not in a position to buy it earlier due to its high price, starts purchasing it.

Different Uses

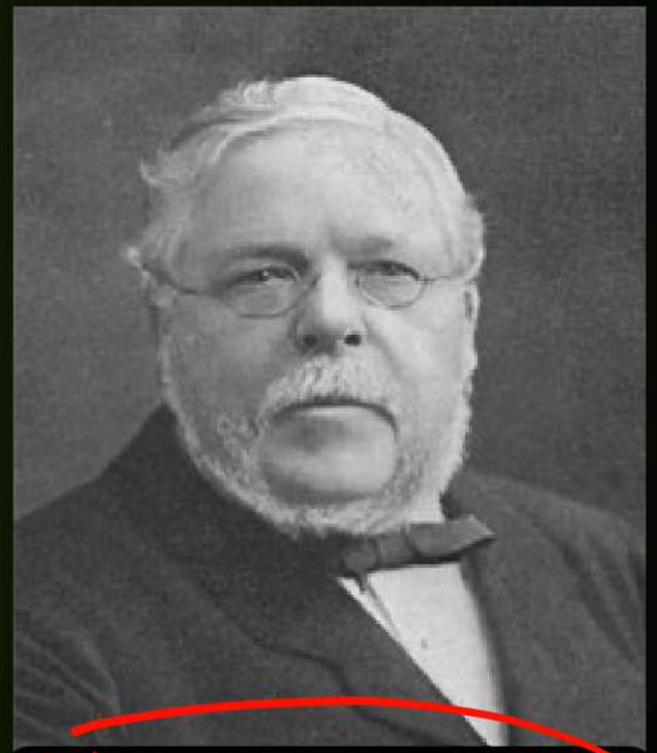
Some commodities like milk, electricity, etc. have several uses, some of which are more important than the others.

EXCEPTIONS TO LAW OF DEMAND

Giffen Goods

These are special kind of inferior goods on which the consumer spends a large part of his income and their demand rises with an increase in price and demand falls with decrease in price.





Sir Robert Giffen

Fashion related goods

Goods related to fashion do not follow the law of demand and their demand increases even with a rise in their prices.



Fear of Shortage

If the consumers expect a shortage or scarcity of a particular commodity in the near future, they would start buying more and more of that commodity in the current period even if their prices are rising.









Ignorance

Consumers may buy more of a commodity at a higher price when they are ignorant of the prevailing prices of the commodity in the market.





Status Symbol Goods or Goods of Ostentation

The exception relates to certain prestige goods which are used as status symbols.

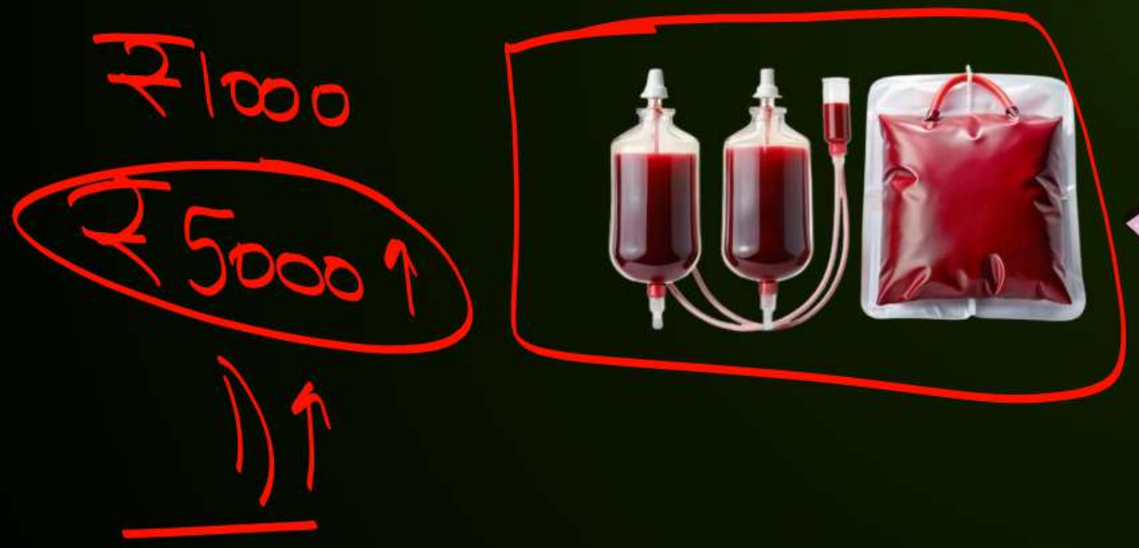


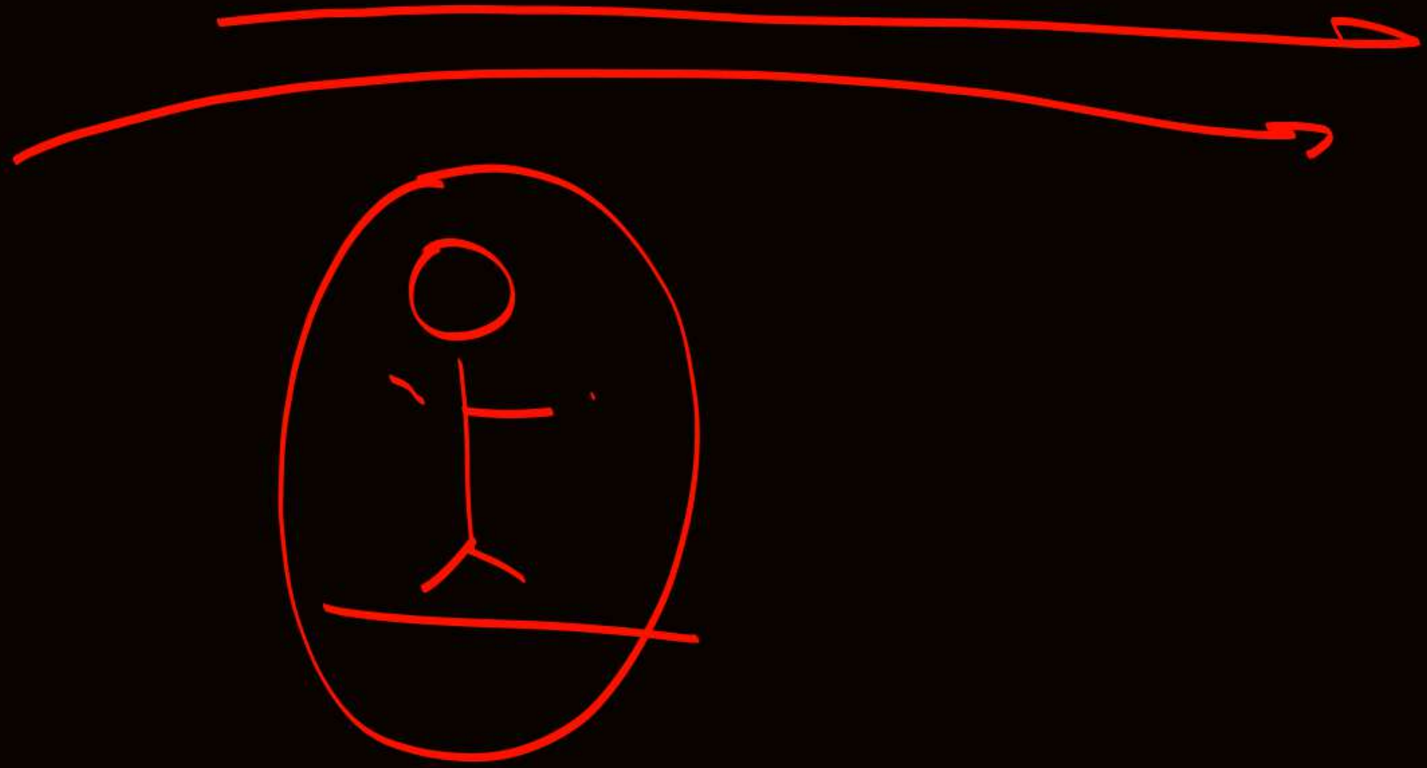
Gold Price↑ DD

Necessities of Life

Another exception occurs in the use of such commodities, which become necessities of life due to their constant use.







Change in Weather

With change in season/weather, demand for certain commodities also changes, irrespective of any change in their prices.



D↓

P↑ D↑



SWEATER



LUNGI

Change in Qty Demanded

Price change

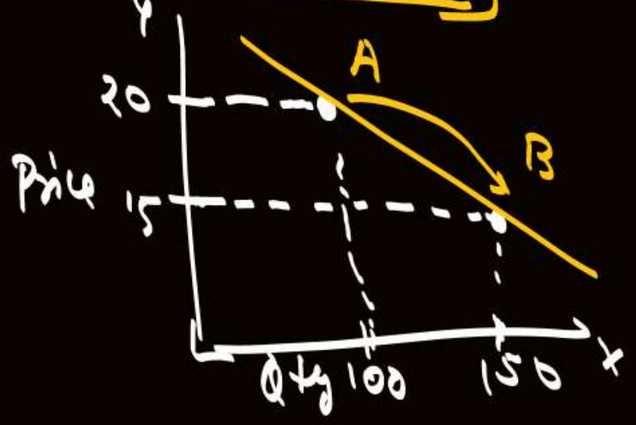
Other factor (constant)

Downward Movement along the same curve

Extension In Demand

Price	Qty
20	100
15	150

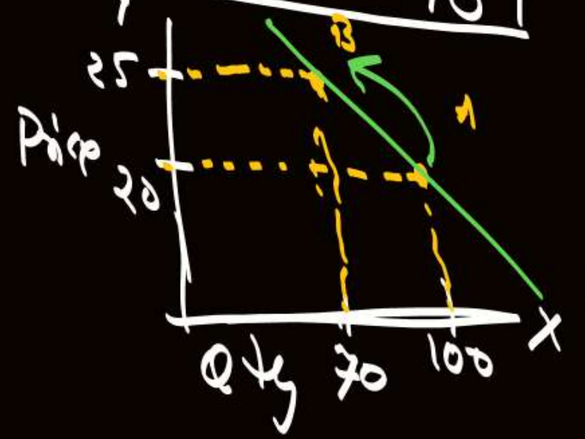
Expansion In Demand ↑



Upward movement along the same curve

Contraction In Demand

	Price	Qty
A	25	100
	20	70



Change in Demand

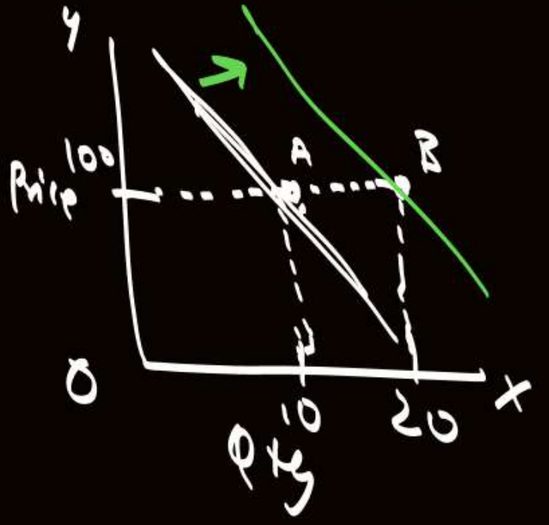
Price (constant)

Other factor (change)

Rightward shift curve

Increase In Demand

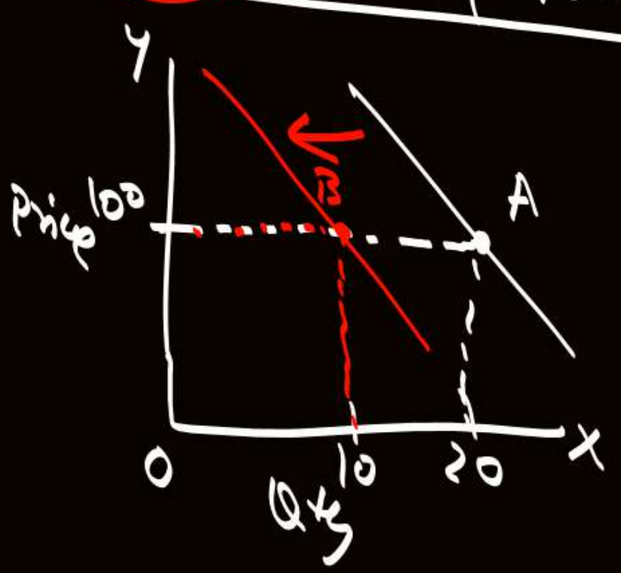
	Price	Qty	Income
A	100	10	10,000
B	100	20	20,000



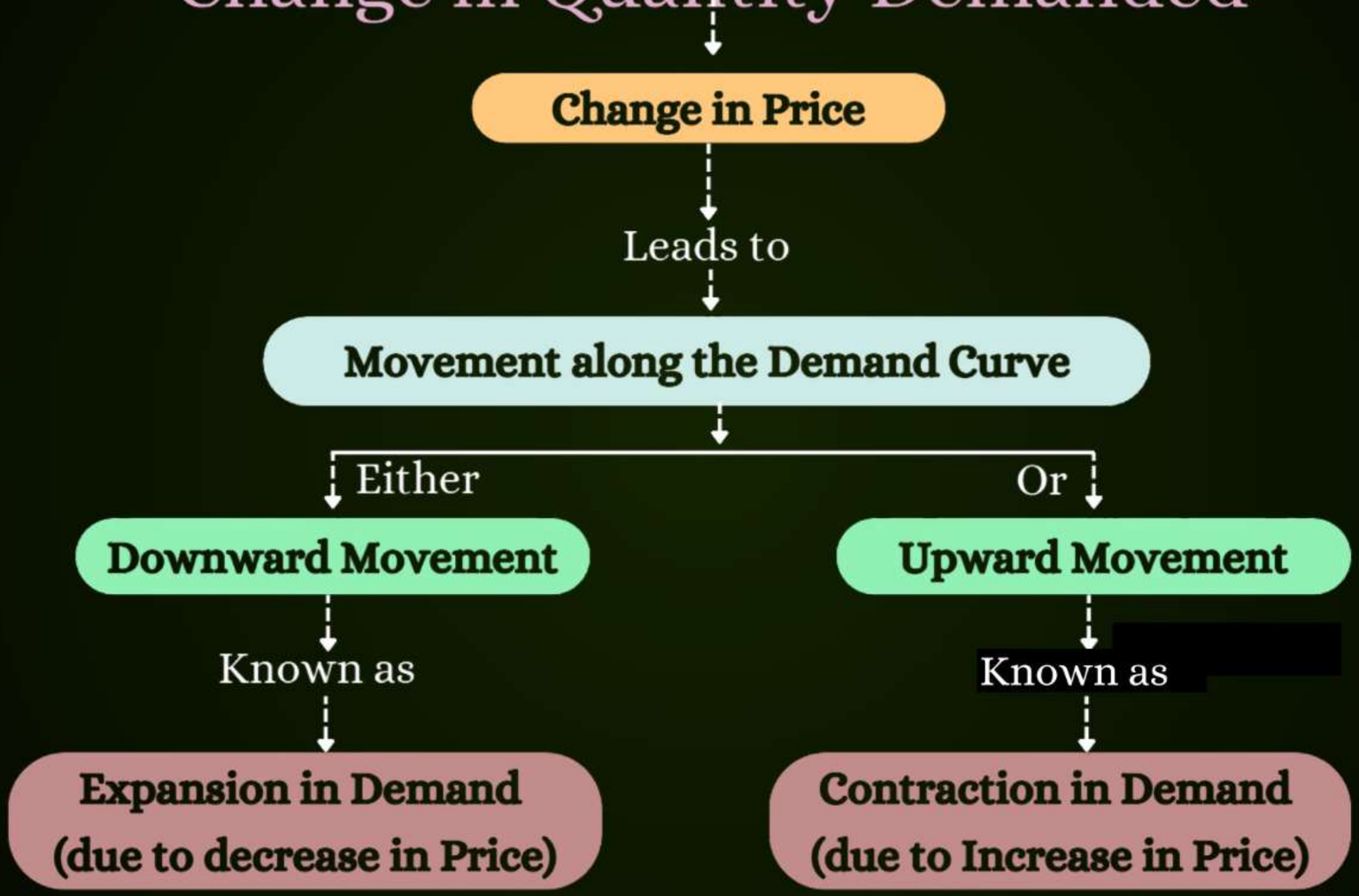
Leftward shift curve

Decrease In Demand

	Price	Qty	Income
A	100	20	20,000
B	100	10	10,000



Change in Quantity Demanded

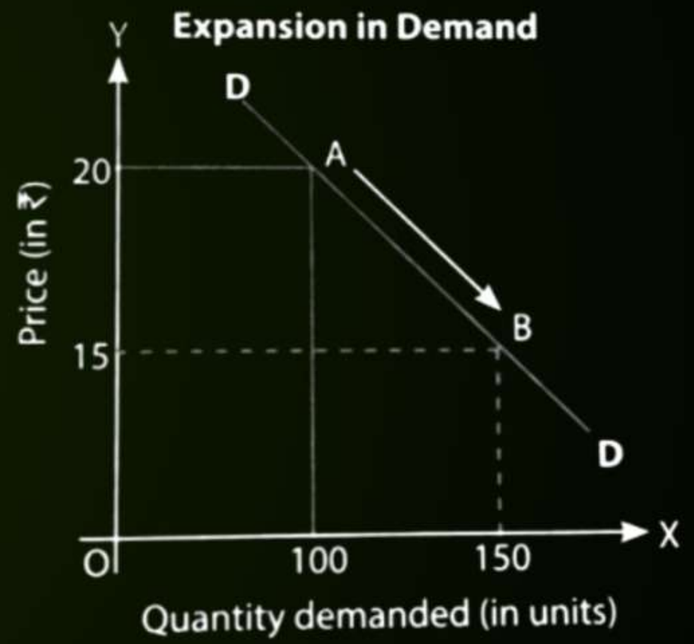


EXPANSION IN DEMAND

Expansion in demand refers to a rise in the quantity demanded due to a fall in the price of commodity, other factors remaining constant.

- It leads to a downward movement along the same demand curve.
- It is also known as 'Extension in Demand' or 'Increase in Quantity Demanded'.

Price in (₹)	Demand Unit
20	100
15	150

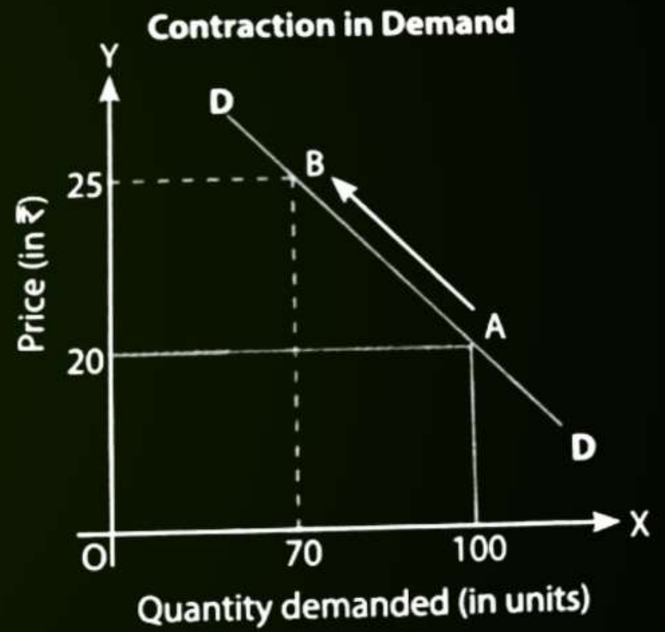


CONTRACTION IN DEMAND

Contraction in demand refers to a fall in the quantity demanded due to a rise in the price of commodity, other factors remaining constant.

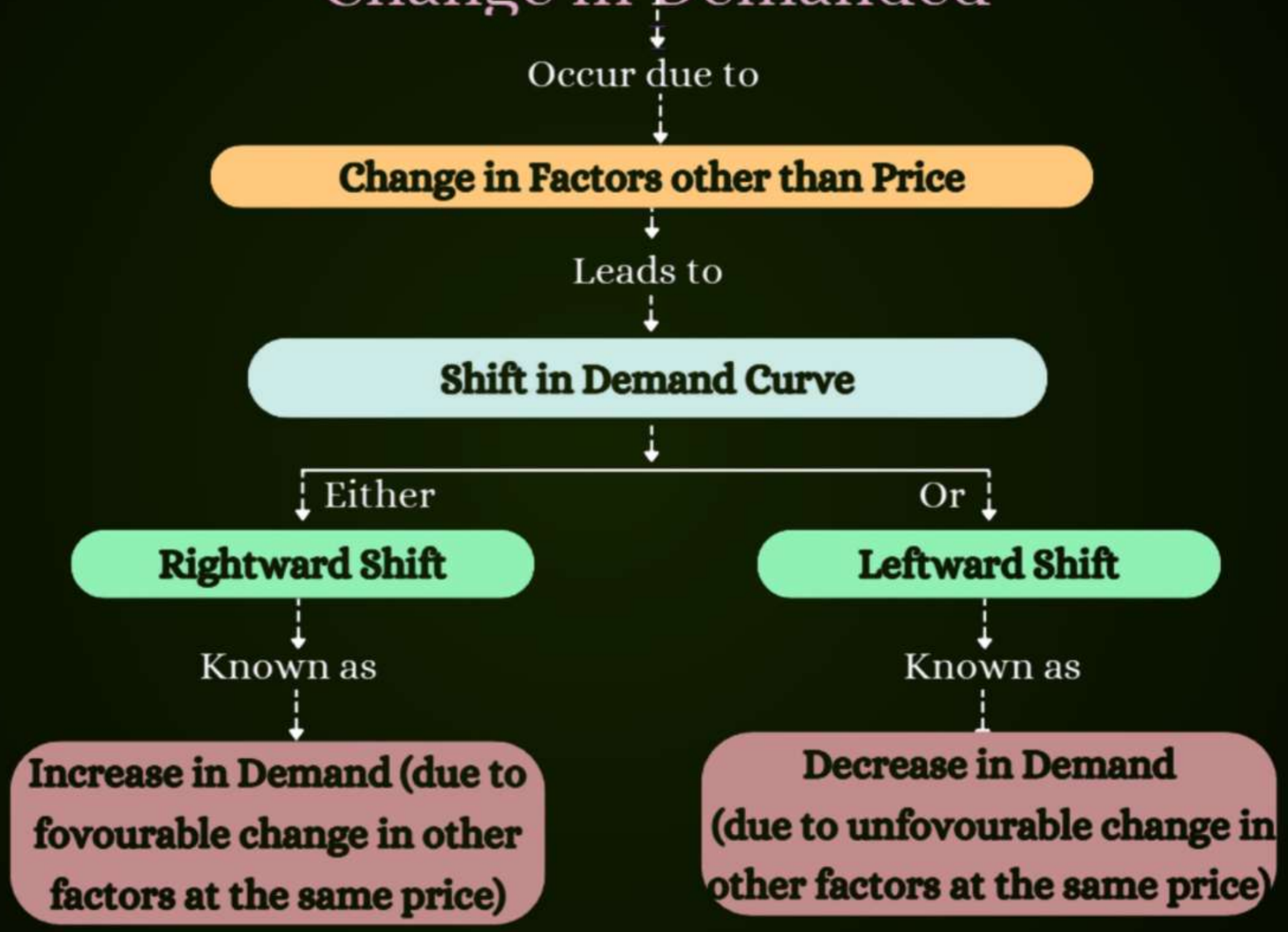
- It leads to an upward movement along the same demand curve.
- It is also known as 'Decrease in Quantity Demanded'.

Price in (₹)	Demand Unit
20	100
25	70



Next Toppers

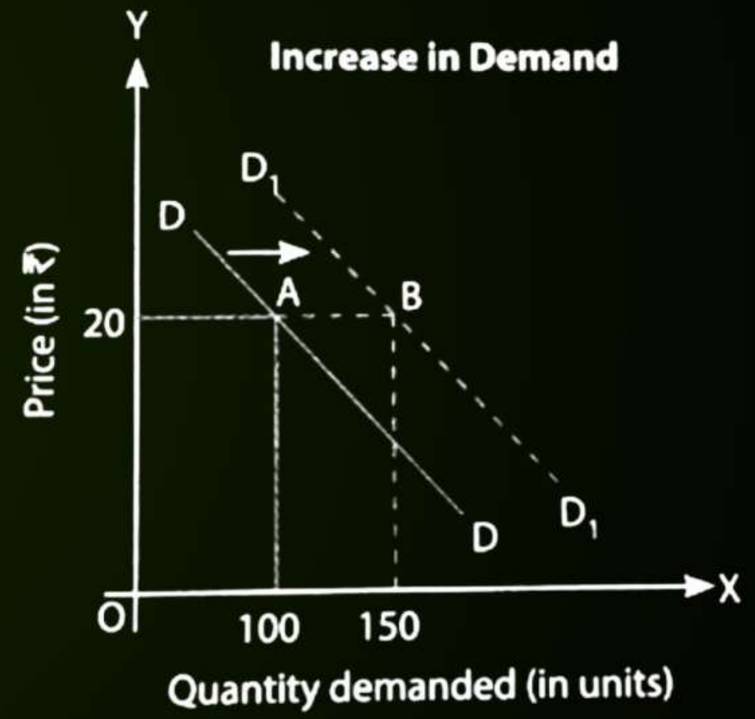
Change in Demanded



INCREASE IN DEMAND

- Increase in Demand refers to a rise in the demand of a commodity caused due to any factor other than the own price of the commodity.

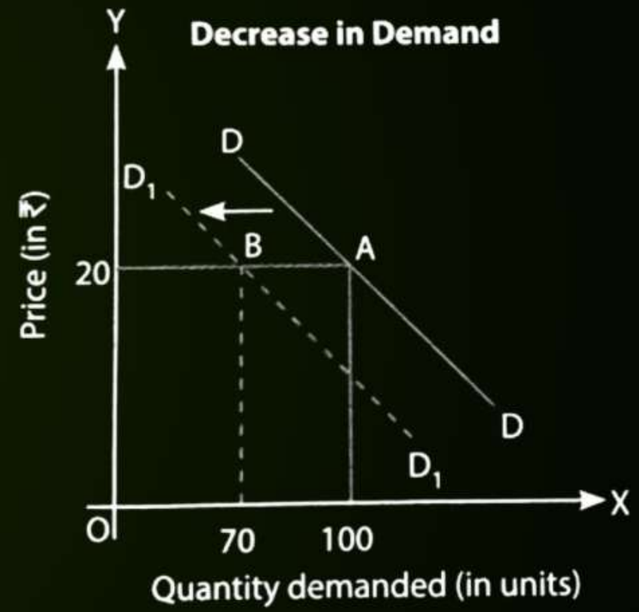
Price in (₹)	Demand Unit	Income
20	100	10000
20	150	20000



DECREASE IN DEMAND

- Decrease in Demand refers to a fall in the demand of a commodity caused due to any factor other than the own price of the commodity.

Price in (₹)	Demand Unit	Income
20	100	10000
20	70	5000



Other Factor → Shift

SHIFT IN DEMAND CURVE (CHANGE IN DEMAND)

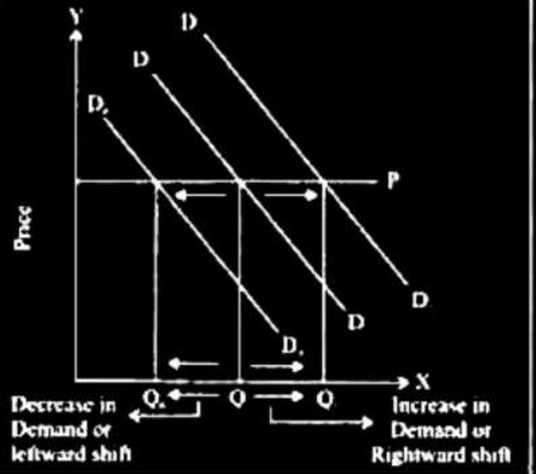
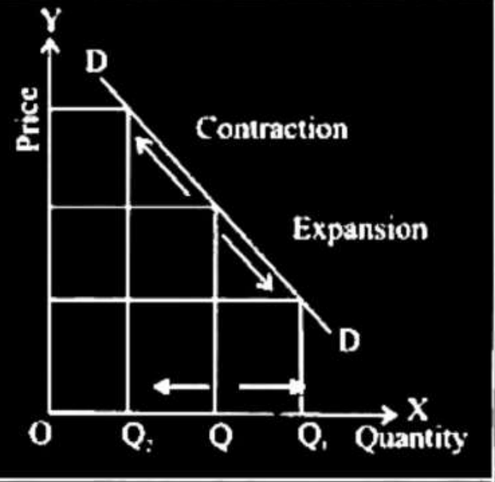
Income ↑
Population ↑

- A change in one of 'other factors' shifts the demand curve.
- When the demand of a commodity changes due to change in any factor other than the own price of the commodity, it is known as change in demand. It is expressed as a shift in the demand curve.
- Change in price of substitute goods;
- Change in price of complementary goods;
- Change in income of consumers;
- Change in tastes and preferences;
- Expectation of change in price in future;
- Change in population;
- Change in distribution of income;
- Change in season and weather.



- Other factor → Shift
- Price → Movement along the same curve

CHANGE IN QUANTITY DEMANDED VS CHANGE IN DEMAND

Basis	Change in Demand (Shift of demand curve)	Change in Quantity Demanded (Movement along the demand curves)
1. Factors responsible for rise or fall	It is increase or decrease in demand of a commodity due to the factors other than price of the commodity.	It is increase or decrease in quantity demanded due to price of the commodity while keeping other factors constant.
2. Price effect	No price effect i.e., At the same price demand is more	Price effect is negative i.e., At a lower price demand is more.
3. Shift of Demand curve	No price effect i.e., In case of increase in demand, demand curve shifts to the right and in case of decrease in demand, demand curve shift to the left.	Demand curve remains the same. However, in case of increase in quantity demanded there is a downward movement and in case of decrease in quantity demanded there is upward movement.
4. Diagram		
5. Demand Schedule	Price: 10, 10, 10 — Quantity demanded: 100, 50, 200	Price: 10, 15, 20 — Quantity demanded: 120, 100, 80

KINDS OF DEMAND

Price Demand

Price demand refers to a relationship between the price and demand of a commodity, assuming other factors constant.



Income Demand

Income demand refers to a relationship between the income of consumer and the quantity demanded of a commodity, assuming other factors constant.



Cross Demand

Cross demand refers to a relationship between the demand of a given commodity and the prices of related commodities, assuming other things remaining the same.



KINDS OF DEMAND

Joint Demand

When two or more goods are demanded simultaneously to satisfy a particular want, then such a demand is called joint demand.



Composite Demand

When a commodity can be put to several uses, its demand is known as composite demand.



Derived Demand

Demand for a commodity, which depends on the demand for other goods, is known as derived demand.



KINDS OF DEMAND

Direct Demand

When a commodity satisfies the wants directly, its demand is termed as direct demand.



Alternative Demand

Demand is known as alternative demand, when it can be satisfied by different alternatives.



Competitive Demand

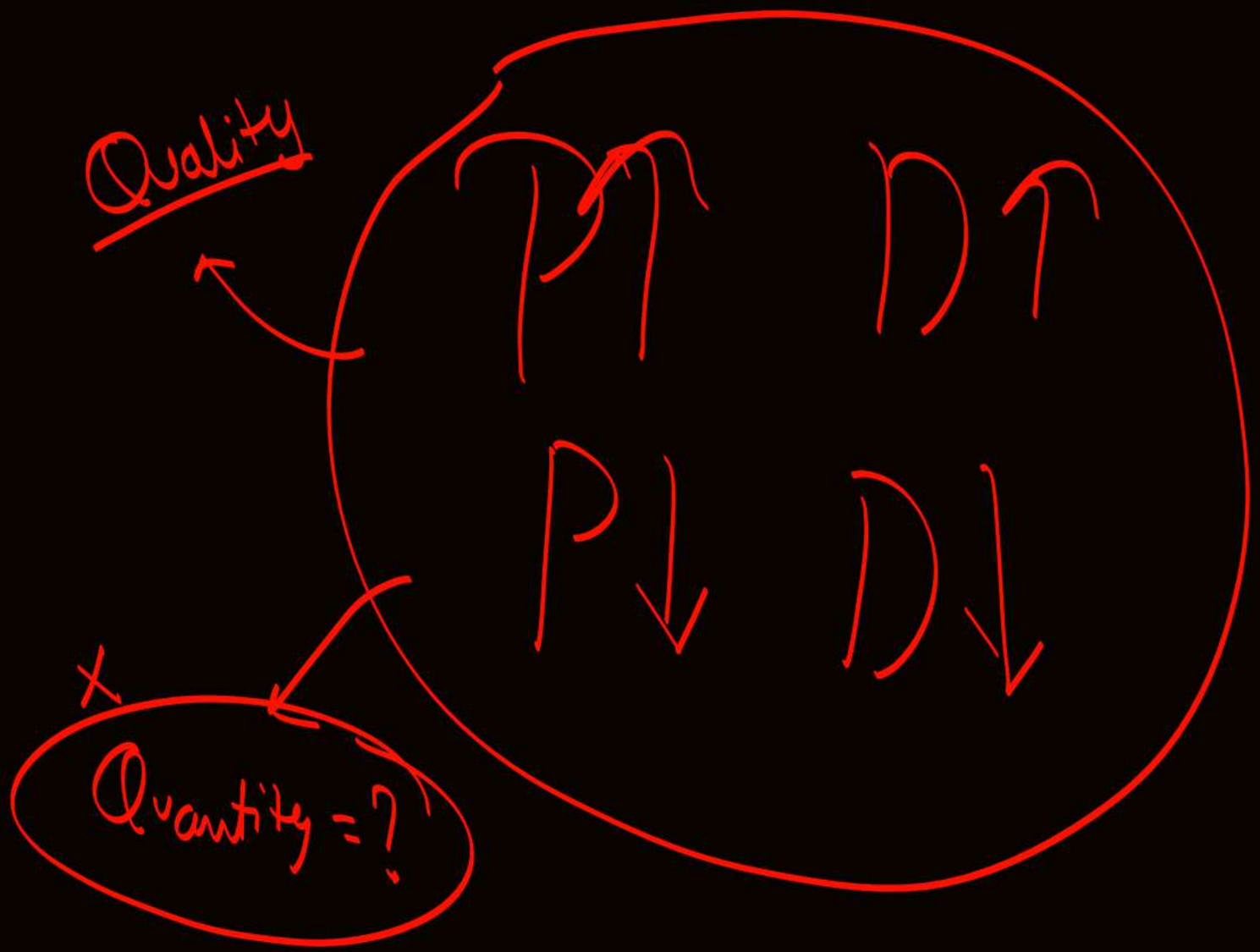
Two goods are close substitutes of each other and increase in demand for one of them will decrease the demand for the other, then the demand for any one is called Competitive demand.



15 Min → Break | 10:30 PM

CHAPTER - 4

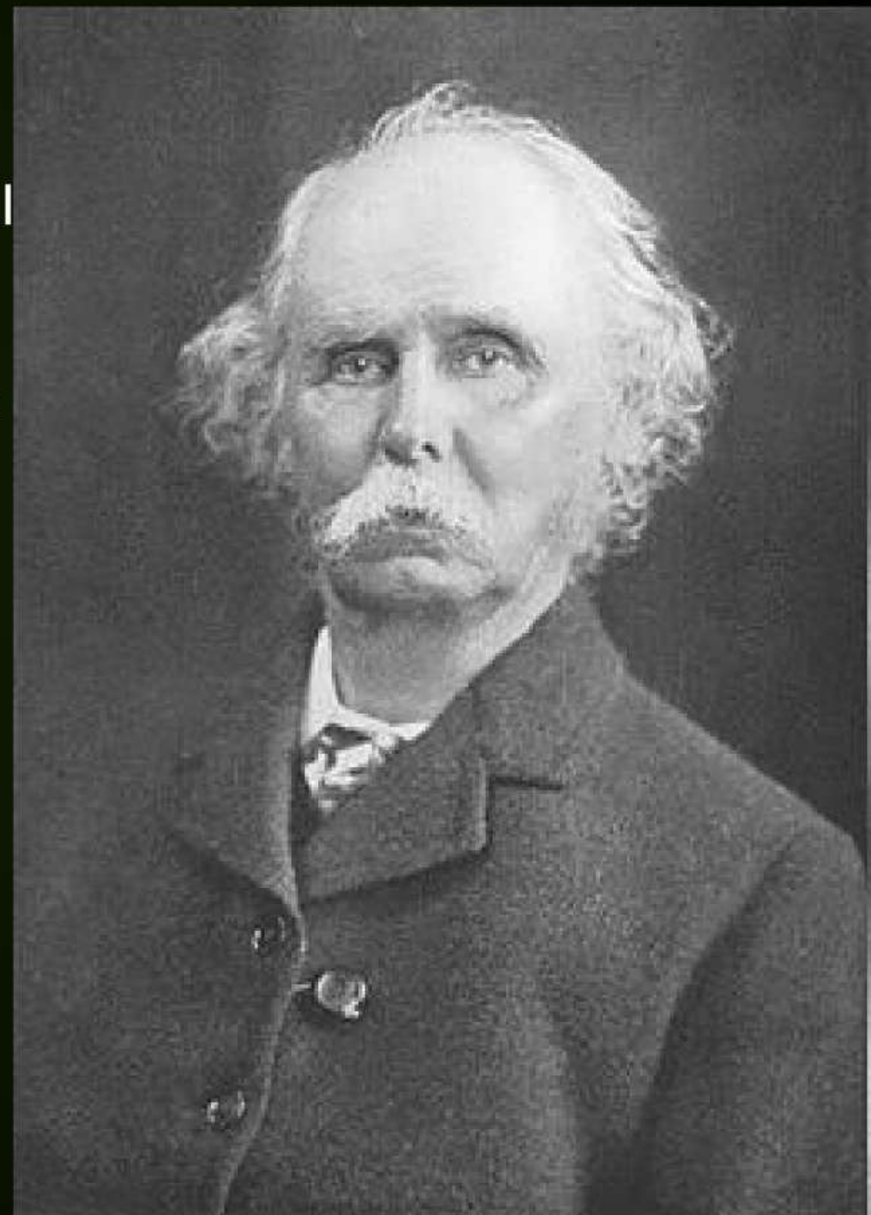
ELASTICITY OF DEMAND


Quality
PT DT
PL DL
x
Quantity = ?

INTRODUCTION

- In the previous chapter, we studied that according to 'Law of Demand', quantity demanded increases with fall in price and decreases with rise in price.
- But it does not specify the magnitude, amount or the extent by which the quantity demanded changes with a change in its price.
- In brief, it does not indicate, 'how much change'.

- Suppose, price of computer falls by 20%
- The concept of elasticity was developed by Prof. Marshall in his book ' Principles of Economics'.



CONCEPT OF ELASTICITY OF DEMAND

- Elasticity of demand refers to the percentage change in demand for a commodity with respect to percentage change in area of the factors affecting demand for that commodity.

Price elasticity of demand

It refers to the percentage change in demand for a commodity with respect to percentage change in the price of the given commodity.



Cross elasticity of demand

It refers to the percentage change in demand for a commodity with respect to percentage change in the price of a related good (substitute good or complementary goods).



Income elasticity of demand

It refers to the percentage change in demand for a commodity with respect to percentage change in the income of consumer.



Price elasticity of Demand

$$E_d = \frac{\%\ \Delta \text{ in Qty Demand}}{\%\ \Delta \text{ in Price}}$$

Income Elasticity of Demand

$$E_{cl} = \frac{\%\ \Delta \text{ in Qty Demanded}}{\%\ \Delta \text{ in Income}}$$

Cross elasticity of Demand

$$E_d = \frac{\%\ \Delta \text{ in Qty Demanded}}{\%\ \Delta \text{ in Subs/comp. Price}}$$

PRICE ELASTICITY OF DEMAND

- Price elasticity of demand means the degree of responsiveness of demand for a commodity with reference to change in the price of such commodity.
- It establishes a quantitative relationship between quantity demanded and its price.

PERCENTAGE METHOD FOR MEASURING PIRCE ELASTICITY OF DEMAND

- Elasticity is measured as the ratio of percentage change in the quantity demanded to percentage change in the price.
- This method was introduced by Prof. Marshall.
- Flux Method or Proportionate Method or Mathematical Method.



$$\text{Elasticity of Demand } (E_d) = \frac{\text{Percentage change in Quantity Demanded}}{\text{Percentage change in Price}}$$

Where:

1. $$\text{Percentage change in Quantity demanded} = \frac{\text{Change in Quantity } (\Delta Q)}{\text{Initial Quantity } (Q)} \times 100$$
2. $$\text{Change in Quantity } (\Delta Q) = Q_1 - Q$$
3. $$\text{Percentage change in Price} = \frac{\text{Change in Price } (\Delta P)}{\text{Original Price } (P)} \times 100$$
4. $$\text{Change in Price } (\Delta P) = P_1 - P$$

$$E_d = \frac{\frac{\Delta Q}{Q} \times 100}{\frac{\Delta P}{P} \times 100} = \frac{\frac{\Delta Q}{Q}}{\frac{\Delta P}{P}}$$

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

$$E_d = \frac{\Delta Q}{\Delta P} \times \frac{P\ (old)}{Q\ (old)}$$

Where,

- Q = Initial Quantity demanded
- ΔQ = Charge in the Quantity demanded
- P_1 = New Price
- Q_1 = New Quantity demanded
- ΔP = Initial Price
- P = Change in Price

QUESTIONS

Calculate price elasticity of demand if demand increases from 4 unit to 5 units due to fall in price from ₹ 10 to ₹ 8?

	Price	Qty
old	10	4
New	8	5
	P↓	D↑

$$Ed = \frac{\Delta Q}{\Delta P} \times \frac{P}{Q}\ (old)$$

$$= \frac{5-4}{8-10} \times \frac{10}{4} = \frac{1}{-2} \times \frac{5}{2} = -\frac{5}{4}$$

$$\Delta Q = New - old$$

$$\Delta P = New - old$$

$$Ed = -1.25$$

QUESTIONS

When prices rises from ₹ 8 to ₹ 10, the demand falls from 5 units to 4 units. Calculate price elasticity of demand.

	Price	Qty
Old	8	5
New	10	4
	P↑	D↓

$$E_d = \frac{\Delta Q}{\Delta P} \times \frac{P\,(old)}{Q\,(old)}$$

$$= \frac{4-5}{10-8} \times \frac{8}{5} = \frac{-1}{2} \times \frac{8}{5} = -\frac{4}{5}$$

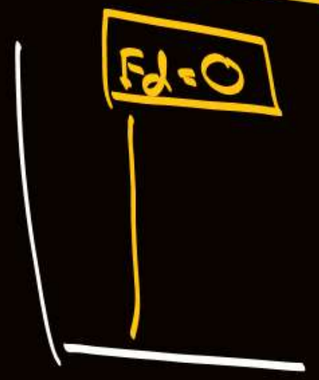
$$E_d = -0.8$$

Perfectly Inelastic Demand

$Ed = 0$

Price ke change ka zero asar

P↑ 100% D=0%



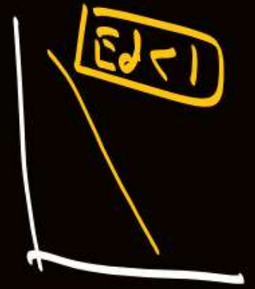
less elastic Demand

$Ed < 1$

Kam Asar

price change ka

P↑ 50%
D↓ 10%

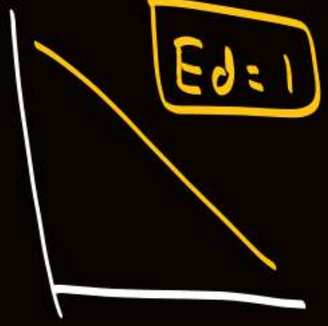


Unitary Elastic Demand

$Ed = 1$

Barabar Asar Price Change ka

P↑ 50% = D↓ 50%



Highly elastic Demand

$Ed > 1$

Zyada Asar Price ke change ka

P↑ 10%
D↓ 50%



Perfectly elastic Demand

$Ed = \infty$

Price = same

Demand = Anginat Asar

P↑ 0% D↓ ∞



Flatter the curve More elastic it is.

RELATIONSHIP BETWEEN PRICE ELASTICITY OF DEMAND & TOTAL EXPENDITURE

- Responsiveness of demand in relation to change in price (i.e. price elasticity of demand) determines the change in expenditure.

Elasticity is more than one ($E_d > 1$)

When demand is elastic, a fall in the price of a commodity results in increase in total expenditure on it. On the other hand, when price increases, total expenditure decreases. It means, in case of highly elastic demand, price and total expenditure move in the opposite directions.

Price (in ₹)	Quantity (in units)	Total expenditure (in ₹) (Price x Quantity)
5	100	500
4	140	560

P↓ Ex↑





Elasticity is less than one ($E_d < 1$)

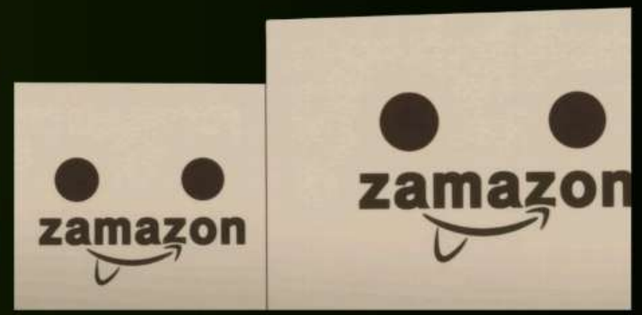
When demand is inelastic, a fall in the price of a commodity leads to fall in total expenditure on it. On the other hand, when price increases, total expenditure also increases. It means, in case of less elastic demand, price and total expenditure move in the same direction.

Price (in ₹)	Quantity (in units)	Total expenditure (in ₹) (Price x Quantity)
5	100	500
4	120	480

P↓
EX↓







Elasticity is Equal to one ($E_d = 1$)

When demand is unitary elastic, a fall or rise in price of the commodity does not change the total expenditure. It means, total expenditure will remain unchanged in case of unitary elastic demand.

Price (in ₹)	Quantity (in units)	Total expenditure (in ₹) (Price x Quantity)
5	100	500
4	125	500

P↓ 25%

Q↑ 25%

P↓ Exp = Same



Total Expenditure Method

- Price elasticity is measured by comparing Total Expenditure (TE) on the commodity before and after the change in price.
- This method is also known as 'Total Outlay Method' or “Total Revenue Method’.
- This method was suggested by Prof. Marshall.

($E_d > 1$) if TE is inversely related to the price.

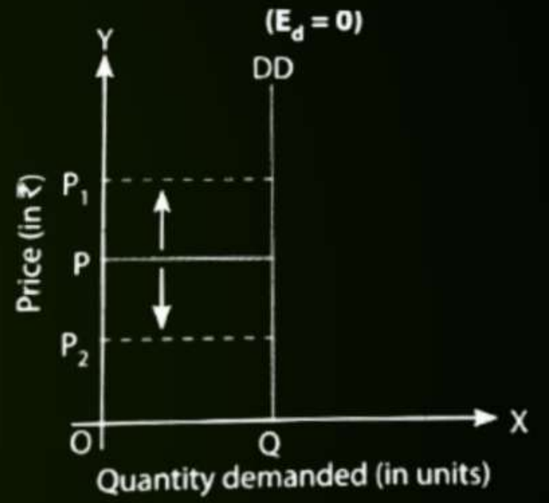
($E_d < 1$) if TE is directly related to the price.

($E_d = 1$) if TE does not change with change in price.

DEGREE OF PRICE ELASTICITES OF DEMAND

Perfectly Inelastic Demand

When there is no change in demand with change in price, then demand for such a commodity is said to be perfectly inelastic. In such case E = 0 and the demand curve DD is a vertical straight line parallel to Y-axis as shown in the Figure.



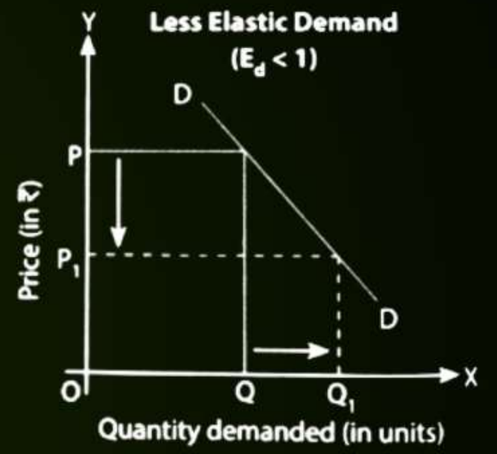
Price in (₹)	Demand (in units)
20	100
30	100
40	100



Less Elastic Demand

When percentage change in the quantity demanded is less than percentage change in price, then demand for such a commodity is said to be less elastic or inelastic.

Price in (₹)	Demand (in units)
20	100
10	120





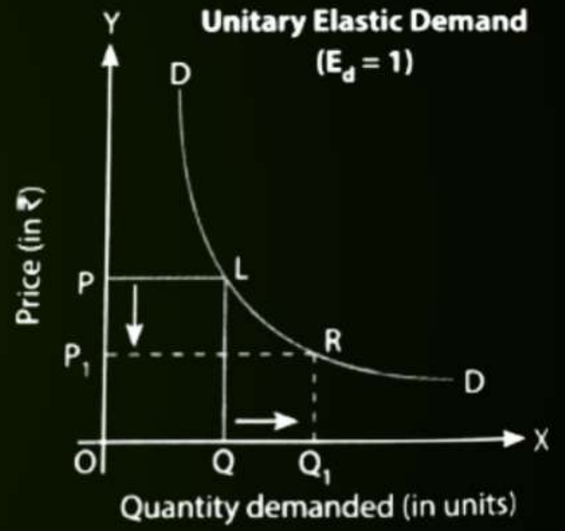


Unitary Elastic Demand

When percentage change in the quantity demanded is equal to percentage change in price, then demand for such a commodity is said to be unitary elastic.

Price in (₹)	Demand (in units)
20	100
10	150



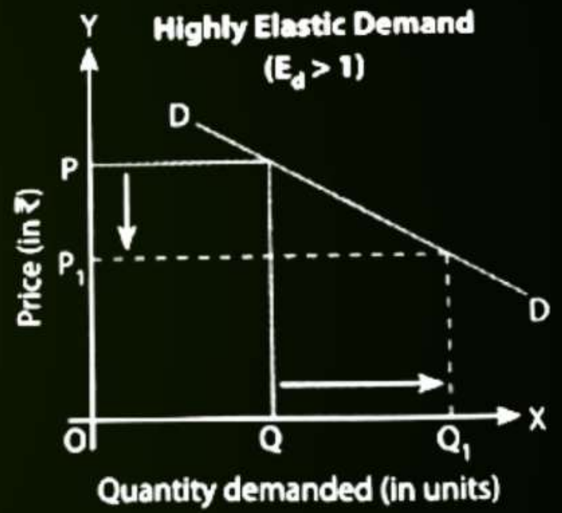


Highly Elastic Demand

When percentage change in the quantity demanded is more than percentage change in price, then demand for such a commodity is said to be highly elastic.

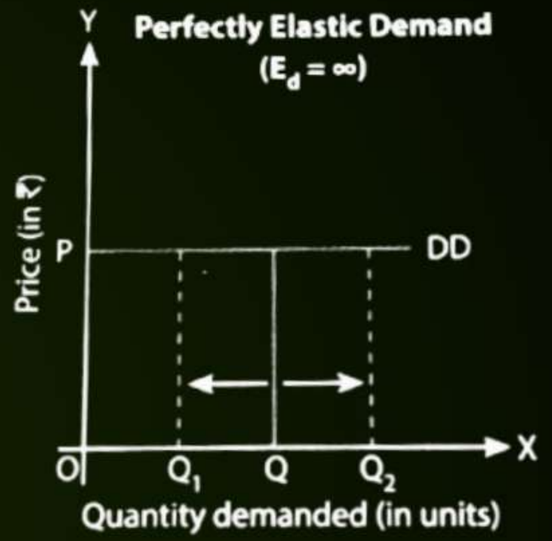
Price in (₹)	Demand (in units)
20	100
10	200





Perfectly Elastic Demand

When there is an infinite demand at a particular price and demand becomes zero with a slight rise in the price, then demand for such a commodity is said to be perfectly elastic.



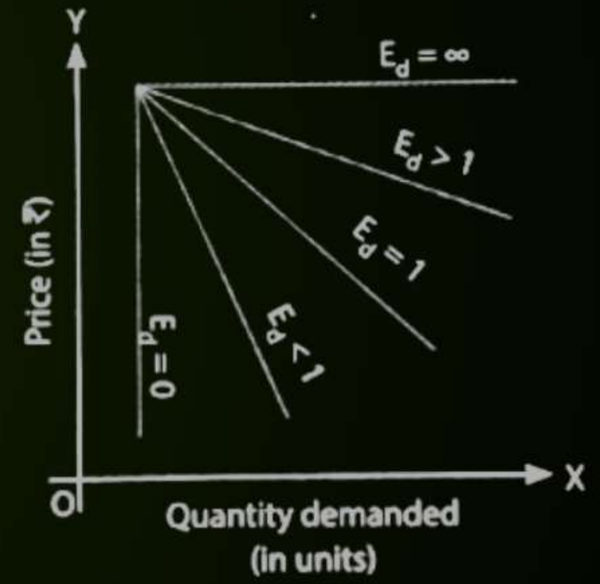
Price in (₹)	Demand (in units)
30	100
30	200
30	300



Next Toppers

Quick Recap - Coefficients of E_d

Type	Value	Description
Perfectly Inelastic	($E_d = 0$)	Same demand at all prices
Less Elastic	($E_d < 1$)	% △ in Demand < % △ in Price
Unitary Elastic	($E_d = 1$)	% △ in Demand = % △ in Price
Highly Elastic	($E_d > 1$)	% △ in Demand > % △ in Price
Perfectly Elastic	($E_d = \infty$)	Infinite demand at same price



FACTORS AFFECTING PRICE ELASTICITY OF DEMAND

- A change in price does not always lead to the same proportionate change in demand.
- Elasticity of demand is different for different goods.

Highly Elastic Inelastic

- Various factors which affect the elasticity of demand of a commodity are:

Nature of Commodity

Necessity

Its demand is generally inelastic as it is required for human survival and its demand does not fluctuate much with change in price.



Comfort

Its demand is generally elastic as consumer can postpone its consumption.



Luxury

Its demand is generally more elastic as compared to demand for comforts.



2 Availability of substitutes

Demand for a commodity with large number of substitutes will be more elastic. The reason is that even a small rise in its prices will induce the buyers to go for its substitutes.
On the other hand, commodities with few or no substitutes like wheat and salt have less price elasticity of demand.



₹10K → 15K

Highly elastic



₹10K

Salt ↑ Inelastic



Next Toppers

3 Income Level

Poor → Elastic

Inelastic

X Rice → Inflation?

Rich people are not influenced much by changes in the price of goods as Elasticity of demand for any commodity is generally less for them.

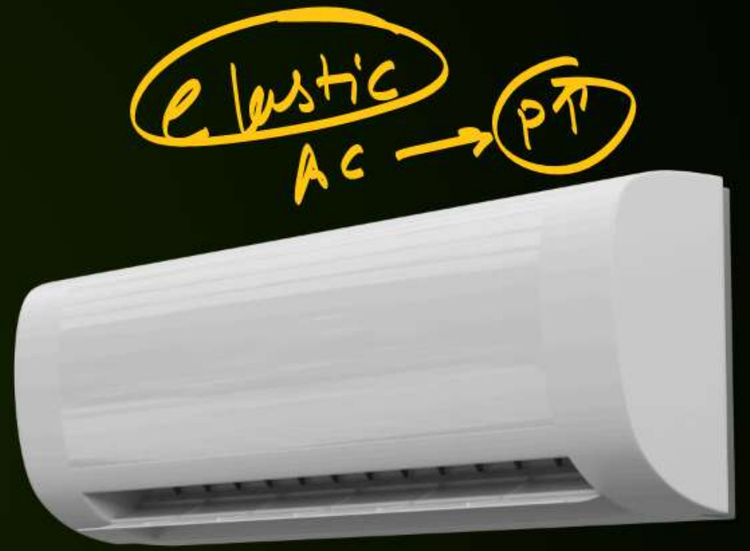
Poor people are highly affected by increase or decrease in the price of goods. As a result, demand for lower income group is highly elastic.

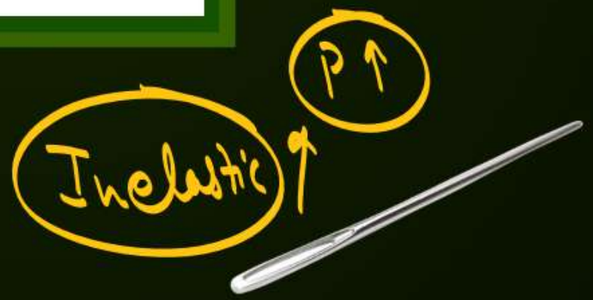


4 Level of price

Costly goods like laptop, AC, etc. have highly elastic demand as their demand is very sensitive to changes in their prices.

Demand for inexpensive goods like needle, match box, etc. is inelastic as change in prices of such goods do not change their demand by a considerable amount.







5 Postponement of Consumption

Highly elastic

Commodities like biscuits, soft drinks, etc. whose demand is not urgent, have highly elastic demand as their consumption can be postponed in case of an increase in their prices.

However, commodities with urgent demand like life saving drugs, have inelastic demand because of their immediate requirement.



Inelastic



6 Number of Uses

Milk → P↓ elastic

If the commodity under consideration has several uses, then its demand will be elastic.

On the other hand, a commodity with no or few alternative uses has less elastic demand.







7 Share in Total Expenditure

Greater the proportion of income spent on the commodity, more is the elasticity of demand for it and vice versa.

However, if the proportion of income spent on a commodity is large, then demand for such a commodity will be elastic.







8 Time Period

Elasticity of demand varies directly with the time period. It can be a day, a week, a month, a year or a period of several years.

However, demand is more elastic in long run as it is comparatively easier to shift to other substitutes, if the price of the given commodity rises.

Short Time = Inelastic

Long Time = Elastic







9 Habits

Inelastic

Commodities, which have become habitual necessities for the consumers, have less elastic demand.

He continues to purchase it even if its price rises. Alcohol, tobacco, cigarettes, etc. are some examples of habit forming commodities.







Limitation of this Method

Total Expenditure method suffers from one defect. It fails to give the exact magnitude of elasticity. By this method, we can only know whether the elasticity is equal to one, greater than one or less than one. Hence, this method is restrictive and provides only a rough measure of elasticity.

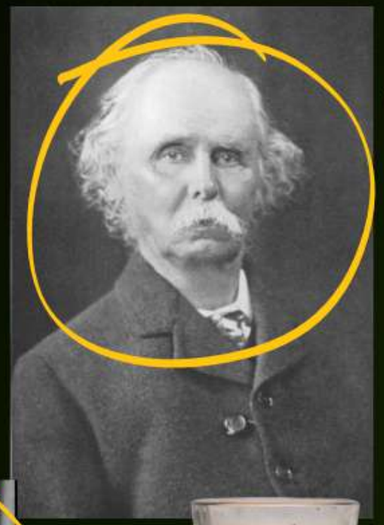
CHAPTER - 5

ECONOMICS: AN INTRODUCTION

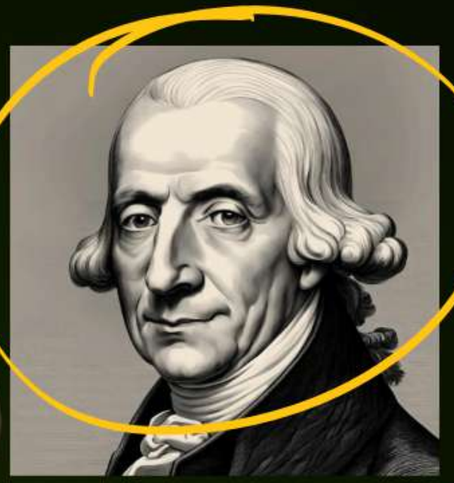
INTRODUCTION

The word 'Economics' has been derived from two Greek words 'Oikos' (a house) and 'nemein' (to manage). Thus, economics means Household Management. Earlier, it used to be called as Political Economy.

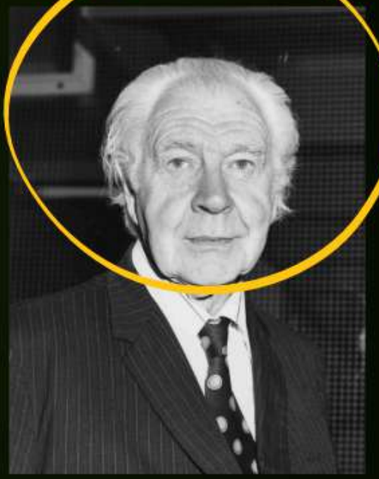
















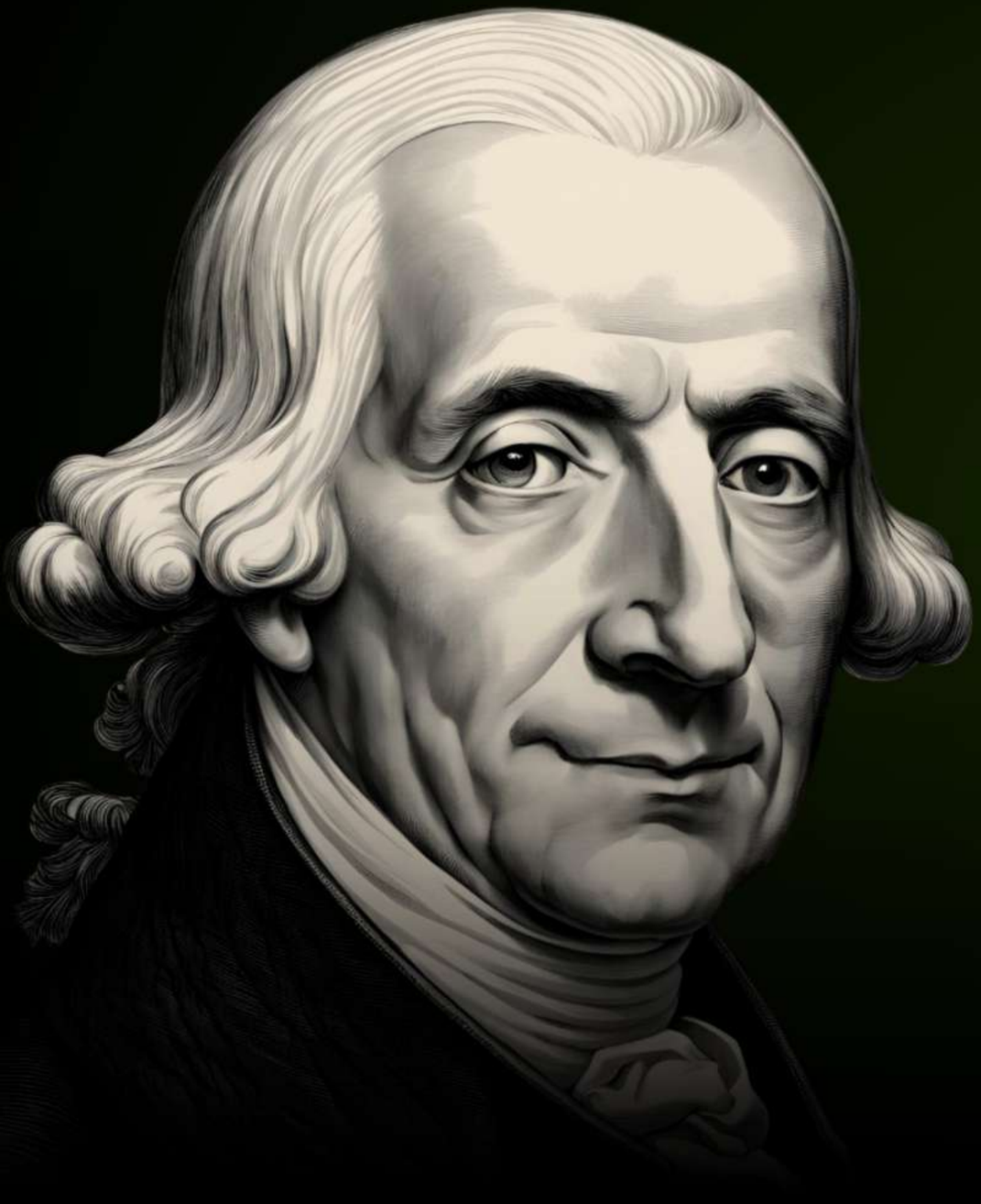






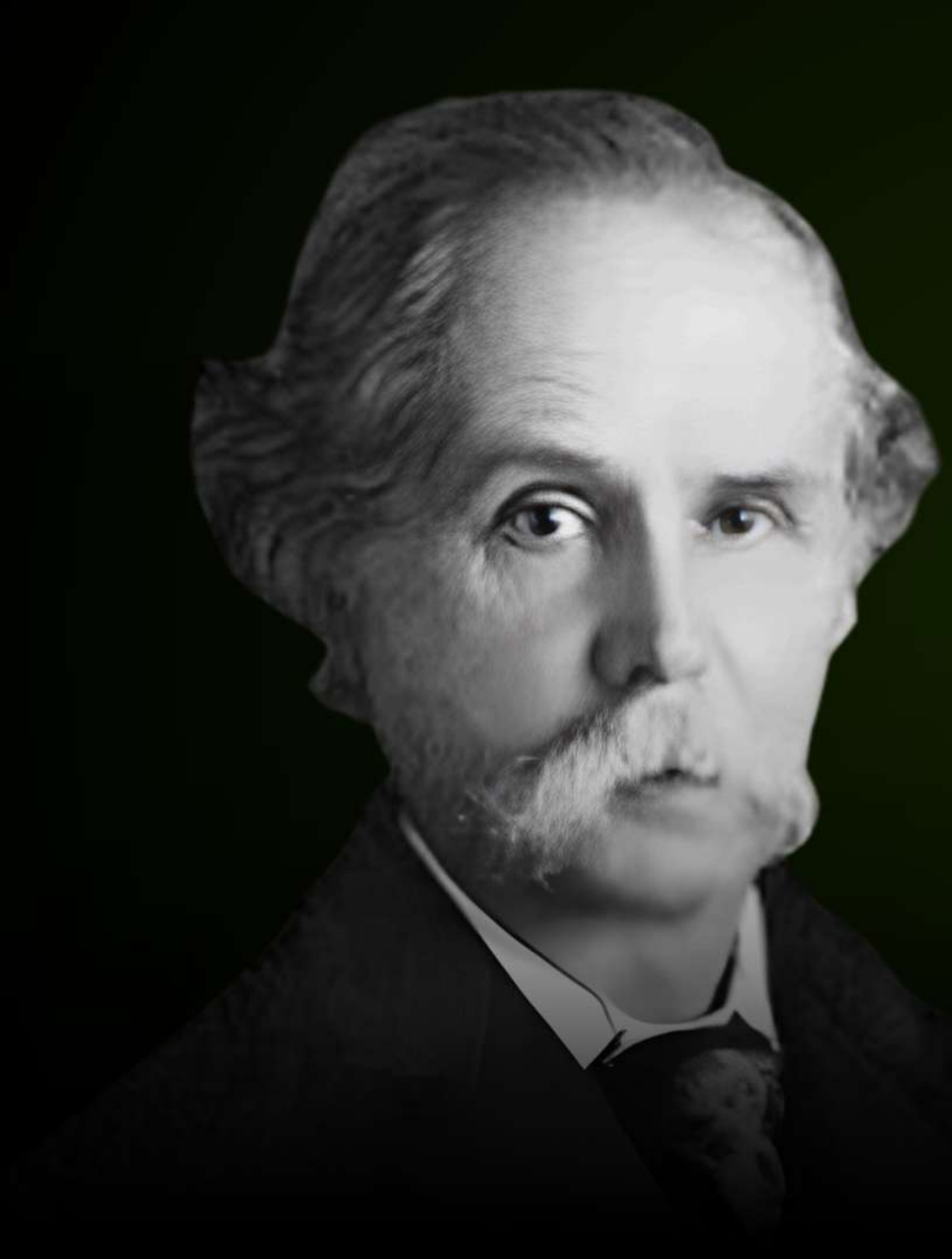
MEANING OF ECONOMICS

- Wealth Definition by Adam Smith
- Welfare Definition by Alfred Marshall
- Scarcity Definition by Lionel Robbins
- Growth Oriented Definition by Samuelson



Wealth Definition

According to **Adam Smith**,
'Economics is the science of wealth'.



Welfare Definition

According to **Alfred Marshall**, 'Economics is a study of man in the ordinary business of life. It enquires how he gets his income and how he uses it'.



Scarcity Definition

According to Prof. Lionel Robbins, 'Economics is the science which studies human behaviour as a relationship between ends and scarce means which have alternative uses'.

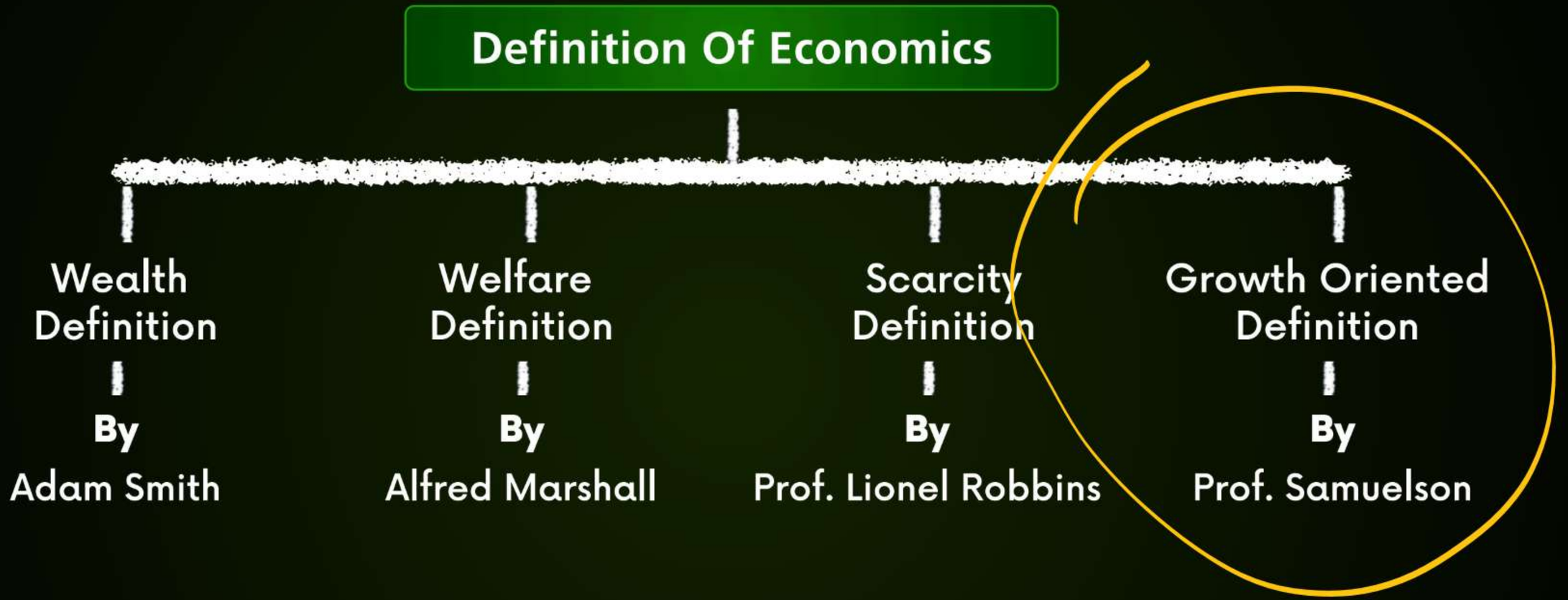
- Scarcity is the root of all economic problems.
- Scarcity affects our daily life.



Growth Oriented Definition

According to Prof. Samuelson, 'Economics is the study of how man and society choose, with or without the use of money, to employ scarce productive resources, which could have alternative uses, to produce various commodities over time and distribute them for consumption now and in the future among various people and groups of society."

Next Toppers



Conclusion

"Economics is the study of how people and society choose to employ scarce resources that could have alternative uses in order to produce various commodities that satisfy their wants and to distribute them for consumption among various persons and groups in society".

NATURE OF ECONOMICS

Economics as a Science

Science is a systematised body of knowledge, which analysis cause and effect relationship and scientific principles have universal validity.

Positive Economics (or Science)

Positive Economics deals with what are the economic problems and how are they actually solved



Normative Economics (or Science)

Normative Economics deals with what ought to be or how the economic problems should be solved.



Economics as an Art



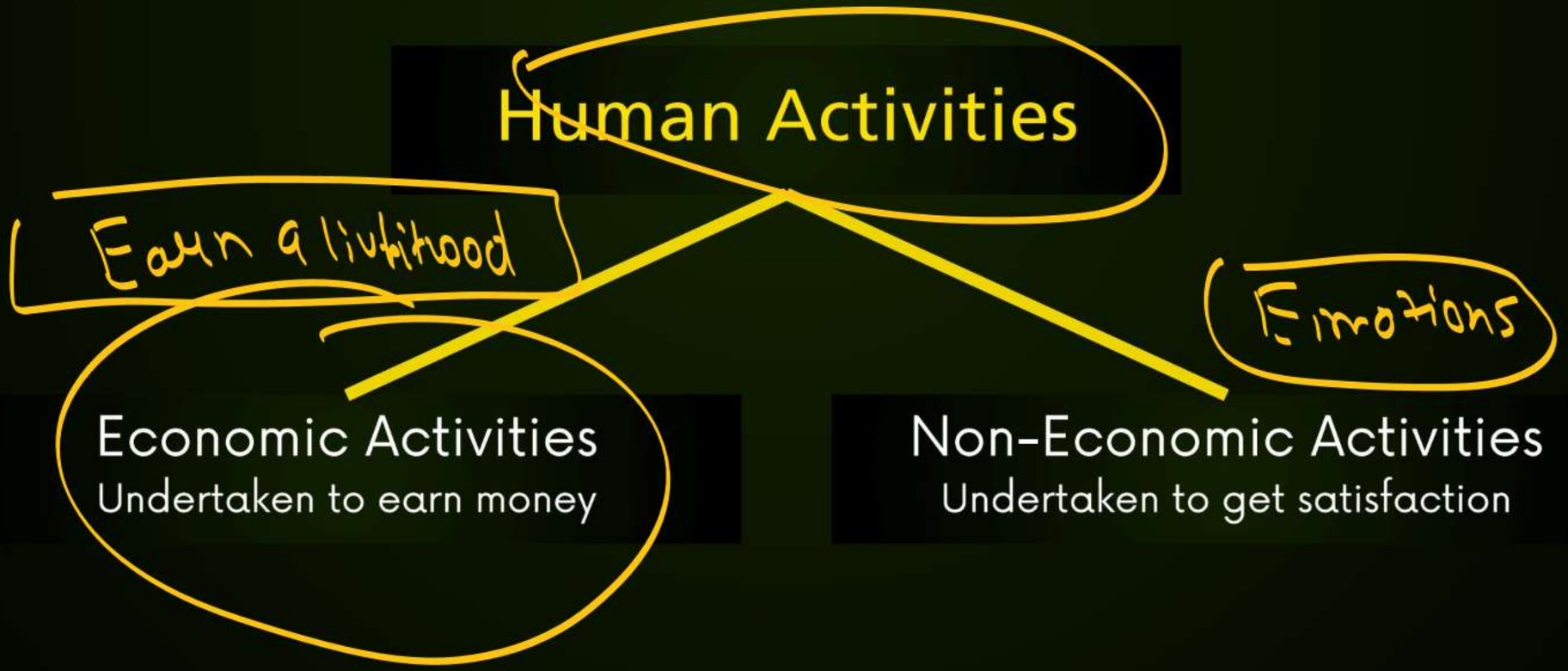
Art refers to skillful and personal application of systematic knowledge to bring desired results. It can be acquired through study, observation and experience. Similarly, economics also requires human imagination for the practical application of laws, principles and theories



ECONOMIC AND NON-ECONOMIC ACTIVITIES

Introduction

All human beings are engaged in some activity or the other in order to satisfy their wants and desires.



Economic Activities

Economic activities refer to those activities, which are undertaken to earn a living.



Consumption

Consumption is an economic activity which deals with the use of goods and services for the satisfaction of human wants.

Production

It is the process of converting raw material into finished products

Distribution

Distribution is that economic activity which studies how income generated is distributed among these factors of production.

Non-Economic Activities

- Charitable activities like blood donation camps, free education to needy students;
- Social activities like get-together, attending parties;
- Political activities performed by different political parties;
- Religious activities like praying to God.






“कोई भी गार्डन में
घूमेगा तो....."





CHAPTER - 6

MEANING, SCOPE AND IMPORTANCE OF STATISTICS

MEANING OF STATISTICS

The word Statistics seems to have been derived from the Latin word 'Status' or the Italian word 'Statista' or the German word 'Statistik' or the Greek word 'Statistique', each of which means a political state.

In Plural Sense

It means a collection of numerical facts.

(Numerical information)

In Singular Sense

Statistics deal with the collection, presentation, analysis and interpretation of the quantitative information.

(Methods of dealing with information)

Statistics as Numerical Set of Data (Plural Sense)

- In the plural sense, Statistics refers to aggregates of facts, affected to a marked extent by multiplicity of causes, numerically expressed, enumerated or estimated according to reasonable standards of accuracy, collected in a systematic manner for predetermined purpose and placed in relation to each other.



Statistics as Numerical Set of Data (Plural Sense)

- Aggregates of Facts - Statistics are a number of facts. Single and isolated figures are no statistics as such figures cannot be compared and no conclusions can be drawn from them.

- Affected by multiplicity of causes - Numerical figures (data) are influenced by a variety of factors. It is not an easy job to study the effects of any one factor separately by ignoring other factors.









Statistics as Numerical Set of Data (Plural Sense)

- Statistics are collected for a pre-determined purpose - The purpose of collecting statistical data must be decided in advance, otherwise usefulness of the data collected would be negligible. Data collected in an unsystematic manner and without complete awareness of the purpose will be confusing and cannot be made on the basis of valid conclusions.

- Statistics are collected in a Systematic Manner - For accuracy or reliability of data, the figures should be collected in a systematic manner. If the figures are collected in a haphazard manner, the reliability of such data will deteriorate. So, before collecting data, suitable plan for their collection should be prepared.

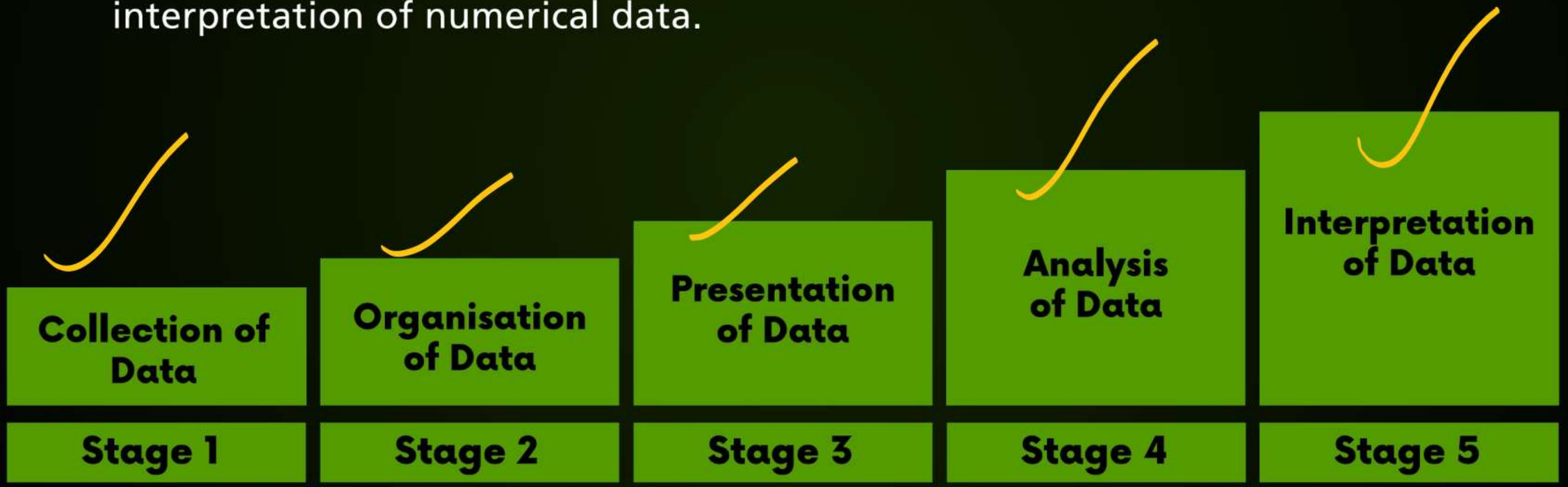
Statistics as Numerical Set of Data (Plural Sense)

- Statistics should be placed in relation to each other - Collection of statistical data is generally done with the motive to compare.



Statistics as a Method (Singular Sense)

- Statistics in singular sense may be defined as the collection, organisation, presentation, analysis and interpretation of numerical data.



Plural Sense Vs Singular Sense

SR.NO.	PLURAL SENSE	SINGULAR SENSE
1.	Statistics in plural sense deals with numerical information.	In singular sense, statistics is a body of various methods & tools.
2.	Statistics in plural sense is descriptive in nature.	In singular sense it is basically a tool of analysis.
3.	Statistics in plural sense is often in the raw state.	In the singular sense it helps in processing the raw data.
4.	Statistics in plural sense is quantitative.	In singular sense it is an operational technique.

FUNCTIONS OF STATISTICS

- To simplify complex facts- It is very difficult for an individual to understand and conclude from huge numerical data. Statistical methods try to present the great mass of complex data into simple and understandable form.

- To present facts in definite form- Quantitative facts can easily be believed and trusted in comparison to abstract and qualitative facts. Statistics summarizes the generalized facts and presents them in a definite form. For ex: inflation rate 10% rather than price rising.





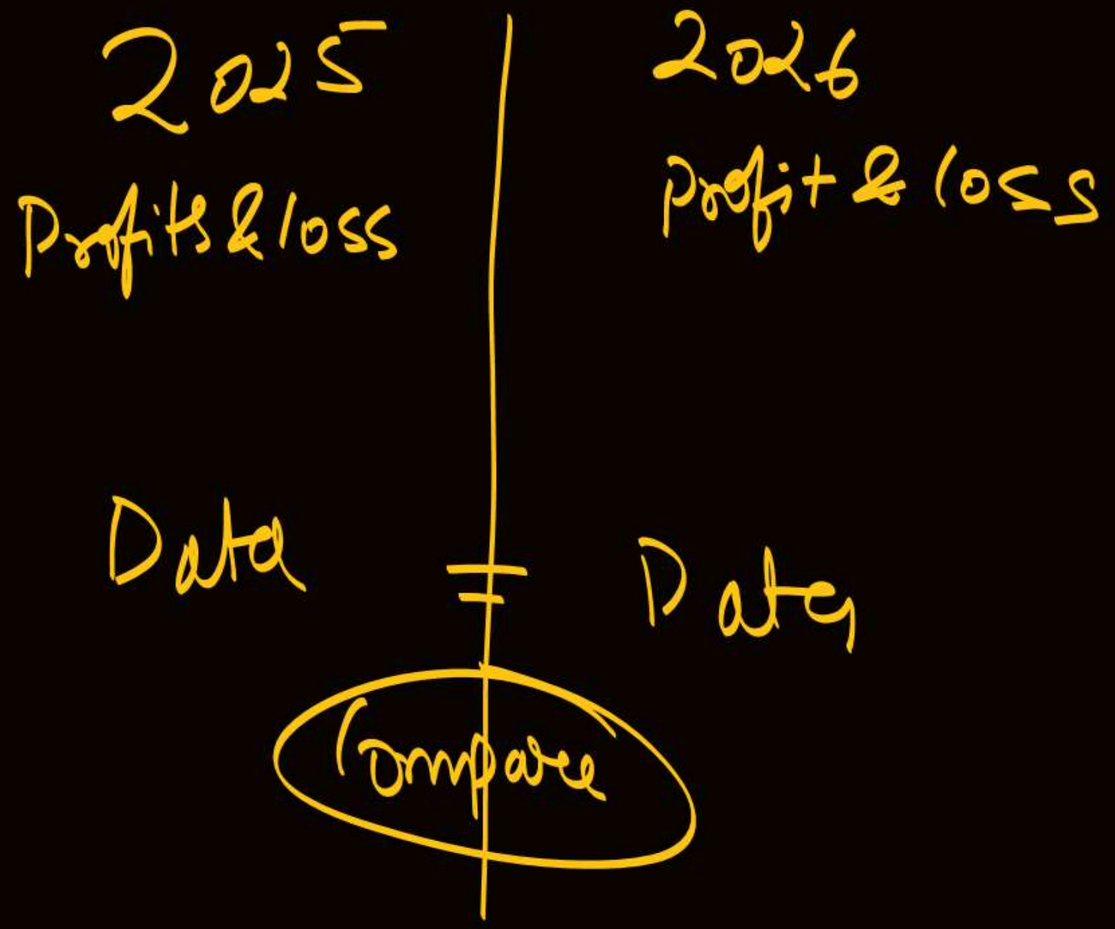
- To make comparison of facts- Comparison is one of the main functions of statistics as the absolute figures convey a less concrete meaning. For ex: per capita.

- To facilitate planning and policy formulation- Statistics help in analysis of causes of an economic problem and facilitates formulation of policies for solving them. On the basis of numerical data and their analysis, businessmen and administrators can plan future activities and shape their policies.

- To help in forecasting- As business is full of risks and uncertainties, correct forecasting is essential to reduce the uncertainties of business. Statistical tools (like interpolation, time series analysis, etc.) help in making projections for future.






2025
Profits & loss
2026
Profit & loss
Data
Data
Compare

- Formulation and Testing of Hypothesis- Statistics methods are extremely useful in formulating and testing hypothesis.



will it affect people or not?

- To enlarge individual knowledge and experience- Statistics enable people to enlarge their horizon. It sharpens the faculty of rational thinking and reasoning, and is helpful in propounding new theories and concepts.

IMPORTANCE OF STATISTICS

Importance of Statistics to the Government

- The role of government has increased and requires much greater information in the form of numerical figures, to fulfill the welfare objectives in addition to the efficient running of their administration.
- Popular statistical methods such as time-series analysis, index numbers, forecasting and demand analysis are extensively used in formulating economic policies.
- In a democratic country like India, various political groups are also guided by the statistical analysis regarding their popularity in the masses.

Vote

Importance of Statistics in Economics

- Formulation of Economic Laws - The famous 'Law of Demand' and the concept of 'Elasticity of Demand' have been developed by the Inductive method of generalisation, which is also based on statistical principles.
- Helps in understanding and solving an economic problem - Statistical data and statistical methods play a vital role in understanding and solving economic problems such as poverty, unemployment, disparities in the distribution of income and wealth, etc.
- Study of market structures - Study of perfect competition, oligopoly, monopoly, etc. requires statistical comparison of market prices, cost and profits of individual firms. Statistics also facilitates inter-sectoral and inter-temporal comparison.

14-15 lakh

530 million

Importance of Statistics in Economics

- Helps in understanding and solving an economic problem - Statistical methods can also be used to estimate mathematical relation and cause and effect relationship between various economic variables. For example, effect of change in prices on quantities demanded of a commodity, shows the mathematical form of demand relationship between the two variables.
- Useful to study behaviour of different economic concepts- Trend-series analysis is used to study the behaviour of prices, production and consumption of commodities, money in circulation, and bank deposits and clearings.
- Price Analysis- Statistical surveys of prices help in studying the theories of prices, pricing policy and price trends as well as their relationship to the general problem of inflation.

Importance of Statistics in Economic Planning

- At every stage of economic planning, there is a need for figures and statistical methods.
- Using statistical techniques, it is possible to assess the amounts of various resources available in the economy and accordingly determine whether the specified rate of growth is sustainable or not.
- Statistical analysis of data regarding an economy may reveal certain crucial areas, like increasing rate of inflation, which may require immediate attention.

5 year, 10 year, 20 year Plan

Importance of Statistics in Business

- For Establishing a Business Unit - Before starting a business, it is necessary to know its feasibility. It involves detailed information about location, size of output, availability of inputs, taxes, size of market share, turnover, etc. Statistics provide guidelines, which may prove to be helpful in making key decisions.
- For Making Marketing Strategy - Before a product is launched, market research team makes use of various statistical techniques like pilot survey), to analyse data on population, purchasing power, habits of the consumers, competitors, pricing, etc. Such studies reveal the possible market potential for the product.

Importance of Statistics in Business

- For Estimating the demand of product - After launching of the business, the next step is to estimate the present as well as the future demand of the product. Statistical methods are extremely helpful in preparing trend lines leading to reliable forecasting.
- Statistics does not study qualitative phenomena - Statistics can be applied in studying only those problems which can be stated and expressed quantitatively. Qualitative characteristics such as honesty, poverty, welfare, beauty, health, etc. cannot directly be measured quantitatively.

LIMITATION OF STATISTICS

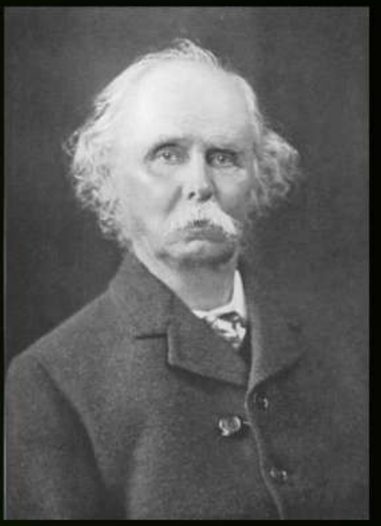
- Statistics does not deal with individuals - Statistics deals only with aggregates of facts and no importance is attached to individual items.
- Statistics can be Misused - Statistics can be misused by ignorant or wrongly motivated persons. Any person can misuse statistics and draw any type of conclusion he likes.
- Statistical results are true only on average - Statistical results are true on an average as the results are affected by a large number of causes. In other words, statistical laws are not universally true.





lady 105 yrs old
India life expectancy 67 yrs old

- Statistical laws are not exact - As statistical laws are probabilistic in nature, inferences based on them are only approximate and not exact like inferences based on mathematical or scientific laws.
- Only Experts can make the Best Possible use of Statistics - The techniques of Statistics are not so simple to be used by any layman. These techniques can only be used by the experts as they are complicated in nature.
- Statistical data should be uniform and homogeneous - It is essential that data must be uniform and homogeneous. Heterogeneous data are not comparable. For example, it would be of no use to compare the heights of trees with the heights of men because these data are of heterogeneous nature.



Alfred Marshall



- Statistics is only one of the methods of studying a problem - Statistical methods are only a means to understand any given problem rather than a method to solve any problem.

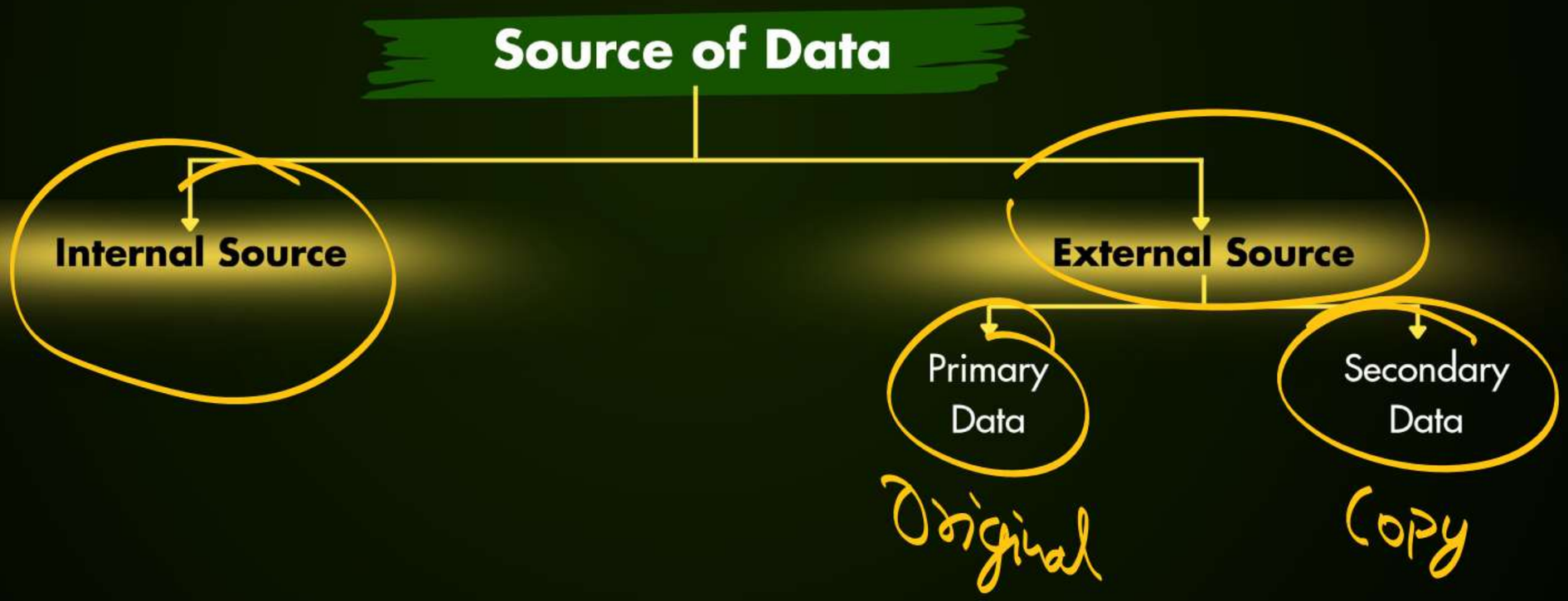


CHAPTER - 7

COLLECTION OF DATA

INTRODUCTION

The purpose of collection of data is to collect evidence for reaching a sound and clear solution to a problem.



Internal Source

In an organisation, when the data is collected from its own reports and records, it is known as internal sources of data.



Employees details
name: Rakesh
age: 80 yrs
gender: female

External Source

External sources refer to the data collected from outside the organisation.



Tour & Travel gathering data on UP TOURISM

PRIMARY AND SECONDARY DATA

Primary Data

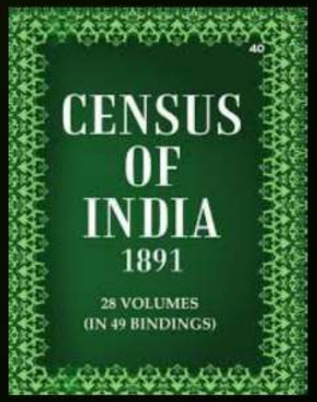
It is the data which is originally collected by an investigator or agency from its source of origin for the first time for some specific purpose.



Secondary Data

The data which is not directly collected but rather obtained from the published or unpublished sources, is known as Secondary Data.
It is also known as Second Hand Data.





DIFFERENCE BETWEEN PRIMARY DATA AND SECONDARY DATA

H.W

Basis	Primary Data	Secondary Data
Originality	Primary data is original because it is collected by the investigator himself.	Secondary data is not original since investigator makes use of data collected by other agencies.
Source	Primary data is collected by some agency or person by using the method of data collection.	Secondary data is already collected and a processed by some person or agency and is ready for use.
Time Factor	It requires longer time for data collection.	Secondary data requires less time.
Cost Factor	The collection of primary data requires a considerable amount of money & personals as whole plan of investigation is initiated.	The collection of secondary data is cheaper as it is taken from published or unpublished material.

Basis	Primary Data	Secondary Data
Reliability & Suitability	Primary data is more reliable and suitable to the enquiry as the investigator himself collects it.	Secondary data is less reliable and less suitable as someone else has collected the data which may not serve the purpose.
Precaution	There is no great need for precautions while using primary data.	Secondary data should be used with great care and caution.
Organisation Factor	Collection of primary data requires elaborate organisation set up.	There is no need for organisational set up in case of secondary data.

METHODS OF COLLECTING PRIMARY DATA



Direct Personal Investigation (Personal Interview)

Under this method, the investigator collects data by having direct contact with the informant and conducts on-the-spot enquiry.



Suitability of this Method

- When detailed information has to be collected.
- When area of investigation is limited.
- When nature of enquiry is confidential.
- When maximum degree of accuracy is needed.
- When importance is given to originality.

Merits

- Originality
- Reliable and Accurate
- Flexibility
- Uniformity
- Other Information
- Suitable for all types of Questions

Demerits

- Not Suitable for Wide Areas
- Expensive and time consuming
- Personal Prejudice
- Trained Personal

Indirect Oral Investigation

Under this method, the investigator approaches third parties, who are in the possession of information about the subject of enquiry.



Suitability of this Method

- When concerned informants are unable to give information due to their ignorance or they are not prepared to part with the information;
- When the area of investigation is very large;
- When secret or sensitive information about the informant has to be gathered
- When the problem of investigation is complex and needs expert's opinion.

Merits

- Wide Coverage
- Economical
- Free from Bias
- Expert Opinion

Demerits

- Indirect information
- Lack of Accuracy
- Partiality of Witness
- Lack of Interest of Informants
- Lack of Uniformity

Direct Personal Investigation Vs Indirect Oral Investigation

Basis	Direct Personal Investigation	Indirect Oral Investigation
Coverage	This method is suitable for limited area.	This method can be used to cover a wide area of investigation.
Originality	The data collected is original in character.	This method lacks originality as data is collected from the witnesses.
Reliability and accuracy	Information collected by the investigator is more reliable and accurate.	There is a possibility of unreliable and inaccurate information due to indirect collection of data.
Cost	This method is more expensive.	It is an economical method.

Information from Correspondents

Under this method, local agents or correspondents are appointed and trained to collect the information from the respondents.



Suitability of this Method

- When regular and continuous information is required;
- When the area of investigation is very large;
- When high degree of accuracy is not required.

Merits

- Wide Coverage
- Economical
- Suitable for Special Purpose
- Continuity

Demerits

- Lack of Originality
- Lack of Uniformity
- Danger of Partiality
- Lack of Accuracy of High Degree
- Time Consuming

Telephonic Interviews

Under this method, data is collected through an interview over the telephone with the interviewer.



Suitability of this Method

- When the respondents have a telephone connection.
- When the data is to be collected in shorter duration.

Merits

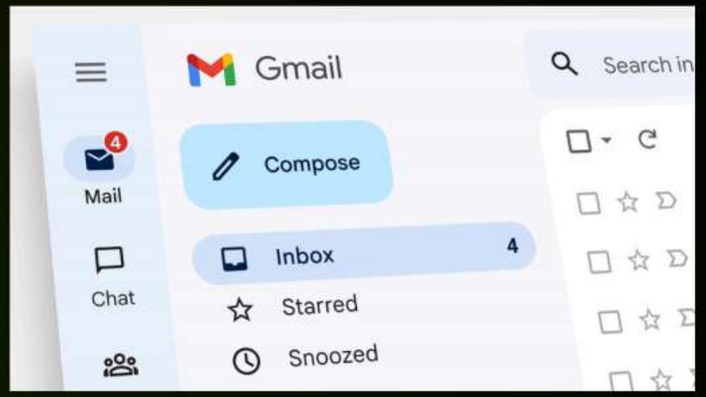
- Wide Coverage
- Economical
- Clarify doubts

Demerits

- Limited use
- Visual feedback is not possible

Mailed Questionnaire Method

Under this method, the investigator makes a questionnaire pertaining to the field of investigation and send it to the respondents, along with a covering letter, to collect information from them.



Suitability of this Method

- When the field of investigation is very large.
- When respondents are literate and are likely to co-operate with the investigation.

Merits

- Wide Coverage
- Economical
- Originality
- Free from bias
- Maintains secrecy

Demerits

- Limited Scope
- Less Accuracy and Precision
- Lack of Interest
- Chances of Misinterpretation
- Time Consuming



Questionnaires Filled by Enumerators

Under this method, the enumerator personally visits informants along with a questionnaire, questionnaire asks questions and note down their replies in the questionnaire in his own language.

Suitability of this Method

This method is most suitable where adequate finance and trained enumerators are available to cover a wide field and some significance is attached to the accuracy of the results obtained.

Merits

- Wide Coverage
- Accurate and reliable information
- Better Response
- Limited Chance of Partiality
- Useful in case of illiterate respondents

Demerits

- Costly Method
- Time Consuming
- Partiality
- Inability of Enumerator



CONSTRUCTION OF QUESTIONNAIRE OR SCHEDULE

- Covering Letter
- Decision regarding Questions
- Number of Questions
- Simple and short Questions
- Avoid Question requiring calculations
- Avoid Questions using double negatives
- No Personal Questions
- Avoid leading Questions
- Questions should be Logically Arranged
- Instructions to the Informants
- Proper division and sub-division of Questions
- Cross Examination
- Questionnaire should look attractive
- Pre-testing the Questionnaire

CONSTRUCTION OF QUESTIONNAIRE OR SCHEDULE

Name _____

Age _____

Address _____

Sex ☐ Male ☐ Female

Phone Landline _____ Mobile _____

Monthly Family Income

☐ Less than ₹ 50,000 ☐ ₹ 50,000 to ₹ 70,000

☐ ₹ 70,000 to ₹ 1,00,000 ☐ More than ₹ 1,00,000

What kind of food do you normally eat at home?

☐ North Indian ☐ South Indian ☐ Mughlai

☐ Chinese ☐ Continental ☐ Italian

☐ Fast Food ☐ Others _____

How frequently do you eat out?

In a week	☐	Once	☐	Twice	☐	Thrice	☐	More than thrice
In a fortnight	☐	Once	☐	Twice	☐	Thrice	☐	More than thrice
In a month	☐	Once	☐	Twice	☐	Thrice	☐	More than thrice

You usually go out with:

☐ Family ☐ Friends ☐ Colleagues ☐ Others _____

Any specific days when you go out:

☐ Weekdays ☐ Weekends ☐ Dinner

☐ Special Occasions ☐ No specific days

How much do you spend on eating out (one time):

☐ Below 300 ☐ 300-500 ☐ 500-800

☐ More than 800

Which is your favourite eating point:

☐ Nirula's ☐ Haldiram's ☐ McDonalds

☐ Bercos ☐ Pizza Hut ☐ Dominos

☐ Others _____

What are the distinguishing factors you look for, while eating out: (Rank from 1 to 8, 8-highest score)

☐ Quality ☐ Service ☐ Location

☐ Wide Menu Range ☐ Price ☐ Taste

☐ Home Delivery ☐ Others _____

CENSUS AND SAMPLING INVESTIGATION TECHNIQUES

A survey may be conducted by either of the two methods

Census Method or Census Survey

Under Census Method, we will collect data from each worker about his wages and then total of monthly wages of all the 600 workers will be divided by 600 to get average monthly wages.



Sampling Method or Sampling Survey

Under Sampling Method, only few workers are selected say, 60 (This 60 is the sample) and total of monthly wages of these 60 workers is divided by 60. The average monthly wages so obtained (of 60 workers) can reasonably be representative of average monthly wages of 600 workers.



CENSUS AND SAMPLING INVESTIGATION TECHNIQUES

Census Method

When a statistical investigation is conducted wherein, the data is collected from each and every element of the population, it is known as census method.



- Demographic data on birth and death rates, literacy, workforce, life expectancy, size and composition of population, etc. are collected & published by the Registrar General of India.
- The famous example of this method is the Census of India conducted after every 10 years. The last Census of India was held in 2011.
- Census method is also known as 'Complete Enumeration or 100% Enumeration' or 'Complete Survey'.

Merits

- Intensive study of population: It provides intensive and in-depth information covering many facets of the problems.
- High degree of accuracy and reliability: Since every item of the population is observed personally, it is possible to collect highly accurate and reliable information.
- Suitability of the method: This method is suitable when different items of the population are not homogeneous.

Demerits

- Expensive: Since the data are obtained by observing every item of the population, it is a very expensive method of investigation, especially in case of a large population.
- Needs more time and manpower: Since a large volume of data are to be collected under census investigation, more time and manpower are needed for its collection, analysis and interpretation.
- Inapplicability: Census method cannot be applied in case of infinite population. If the study involves destruction, as in case of testing of tyres on road, census cannot be conducted.

Sampling Method

When only some representative items of a population are selected and data collected from these items are used for the analysis, the method is known as Sampling Method.
The first task in selecting a sample is to identify the population.

A good sample is generally smaller than the population and is capable of providing reasonably accurate information about the population at a much lower cost and shorter time.

Factors Affecting Size of Sample

- Size of Population: In case of large size of population, sample size would be bigger and vice-versa.
- Degree of Accuracy Desired: If greater degree of accuracy is desired, the size of sample should be larger. However, if samples are selected by an experienced person on the basis of scientific method, better results can be ensured, even in case of small size of sample.
- Homogeneity or Heterogeneity of the Population: In case, the population consists of homogeneous units, a small sample will serve the purpose. On the other hand, if the population consists of heterogeneous units, a large sample is required.)
- Nature of the Study: In case of intensive and continuous study, a small sample is quite appropriate. On the contrary in case of unrepeated and extensive study, it may be necessary to take a larger sample size.
- Respondents' Nature: If it is seen that a large number of respondents will not co-operate, then a larger sample should be selected.



Requisites of a Good Sample

- Representative: Sample should be randomly selected so that each unit has equal chance of being selected. So, a trained and experienced person should select the sample. The aim is that selected sample should be representative of the characteristics of the population.
- Adequacy: To ensure that all the characteristics of a population are represented by the sample, its size must be adequate.
- Homogeneity: As far as possible, the population from which a sample is to be obtained, should be homogeneous.
- Independence of selected sampling units: The selection of various items of the population in the sample should be done independently of each other.
- Matches with objective of investigation: To have correct picture of the problem under investigation, it is important to draw a sample keeping in view the objective of investigation.

CONSTRUCTION OF QUESTIONNAIRE OR SCHEDULE

Merits

- Reduced Cost: It is more economical than the census technique as the task of collection and analysis of data is confined only to a fraction of the population.
- Greater speed: In this method, only representative units are approached. Smaller volume of data saves time not only in collecting the information, but also in the processing, editing and analysing the data.
- Greater accuracy: When sampling is conducted scientifically and carefully, it gives more accuracy as compared to the census procedure.
- Greater scope: There can be investigations where highly trained investigators or specialized equipments are needed to collect the information.
- Detailed Enquiry: Under sampling method, the number of units and the area of study are small. So, it is possible to collect detail and in-depth information about the population under study.

Demerits

- Difficult to achieve cent percent accuracy: The conclusions of sampling method are based only on the results of a sample taken from the whole population. Therefore, achieving a hundred percent degree of accuracy is not possible.
- Lack of Representativeness of the Sample: The accuracy of conclusions of sampling method depends upon whether the sample is representative of the characteristics of the population.
- Bias in the selection of sample: If the investigator is biased, then he might select sample deliberately. In such cases, selected sample cannot be a representative of the characteristics of population.
- Lack of Specific or Specialized Knowledge: If the services of experts are not used in the collection and analysis of sample data, the results of investigation are likely to be unsatisfactory.
- Not possible in case of heterogeneous population: In case of heterogeneous population, any sample may not correctly reflect the characteristics of the population. In this case, sampling is not advisable.

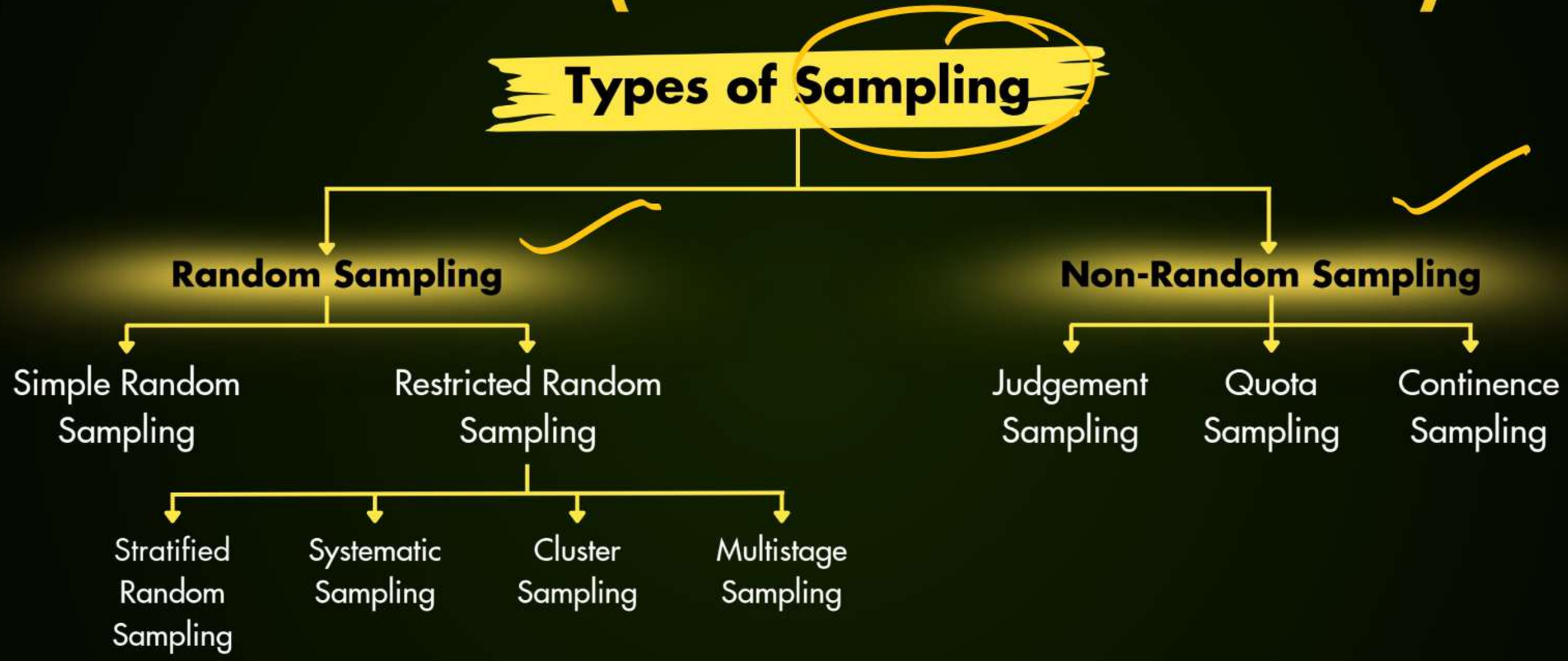
METHODS OF COLLECTING PRIMARY DATA

H.W

Difference between Census Method and Sampling Method

Basis	Census Method	Sampling Method
Nature of Enquiry	Extensive enquiry is conducted as each and every unit of the population is studied.	Limited enquiry is conducted as only few -units of the population are studied.
Economy	It requires large amount of money, time and labour.	Relatively less money, time, and labour is required.
Suitability	It is more suitable if population is heterogeneous in nature.	It is more suitable if population is homogeneous in nature.
Reliability & Accuracy	Results are quite reliable and accurate under Census method.	Under sampling method, results are less reliable and accurate.
Nature of error	In census method, the only error that may arise in the collection of data is error of bias.	Sampling method gives rise to error of 5. sampling apart from error of bias.
Organisation & Supervision	It is very difficult to organise and supervise census method.	Sampling method is comparatively easy to organise and supervise.

TYPES OF SAMPLING (METHODS OF SAMPLING)



RANDOM SAMPLING

Random sampling method refers to a method in which every item in the universe has a known chance of being chosen for the sample.
It is also known as 'Probability Sampling'.
There is no room for discrimination in random sampling.



TYPES OF RANDOM SAMPLING METHOD

Simple Random Sampling

(Every item of population has an equal chance of being selected)

Restricted Random Sampling

(Random Sample is selected under certain restrictions)

RANDOM SAMPLING

Simple Random Sampling (Unrestricted Random Sampling)

A simple random sample is one in which every item of the population has an equal chance of being selected.

Lottery Method

This is the simplest method of selecting a random sample.



Use of Random Number Table

Random selection of the sample can be made by the use of random number tables.

Merits

- No Personal Bias
- Based on Probability
- Accuracy can be assessed
- Increasingly Representative of the Population

Demerits

- Unsuitable for small sampling
- Difficult to prepare sampling frame
- Time Consuming

RANDOM SAMPLING

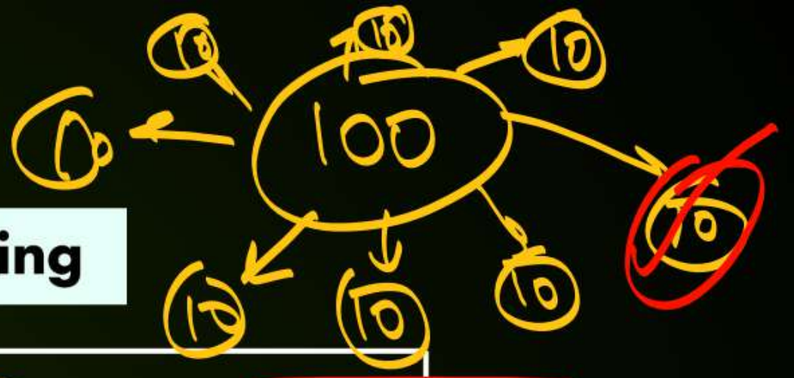
Restricted Random Sampling

It becomes necessary to select a random sample under certain restrictions. Such samples are known as 'Restricted Random Samples".

Important Methods under this category are:

- Stratified Random Sampling
- Systematic Sampling
- Cluster Sampling
- Multistage Sampling

Types of Restricted Random Sampling



Stratified Random Sampling

(Entire population is divided into a number of groups and certain items are taken from each group at random)



Each from 1 country

5-20

Systematic Sampling

(Out of complete list of available population, sample is selected by taking every nth item from this list)



all numbers divisible by 5

Cluster Sampling

(Total Population is divided into some recognizable clusters and given number of clusters are chosen at random)



100 Schools/ cluster
10 clusters taken

Multistage Sampling

(Extension of cluster sample, which is carried out in multiple stages say, two, three or four stages)

Country
3 states
2 cities
10 localities

NON-RANDOM SAMPLING

Under non-random sampling method, the selection of a sample depends on the judgement and convenience of the investigator rather than on chance.

The main methods of non-random sampling are:

- Judgement Sampling
- Quota Sampling
- Connivence Sampling

Judgement Sampling

The choice of sample items depends exclusively on the judgement of investigator. Therefore, investigator should be fully trained and should have a good knowledge of the population.

Merits

- Simple and easy: This method is simple and easy to adapt as it does not require complicated procedures to draw a sample.
- Proper Representation: This method enables the sample to be true representative of the population when the investigator has full knowledge of the composition of the universe and is free from bias.
- Avoid Irrelevant items: This method helps to choose those items in a sample which are of prime importance.

Demerits

- Personal Prejudice: The personal prejudice or bias of the investigator may lead to a sample, which may not represent the population.
- Error of Judgement: The investigator should have the knowledge of the complete constitution of the population, which may not be possible in many cases. So, there is a for the error of judgement in selection of the sample.
- Not an objective method: It may be noted that even if a judgement sample is reasonably representative, there is no objective method for determining the size or likelihood of sampling error.

Quota Sampling



Under this method, the items of the population are subdivided into various groups and then a quota (number of items to be selected from each subgroup) is fixed. But, within the given quota, the selection of sample units depends upon the personal judgement of the investigator.

Merits

- Reliable Results: If the investigators are skilled and experienced, it gives more reliable and dependable results.
- Economical: The cost of preparing sample and field work is very low.

Demerits

- Personal Prejudice: There is considerable risk that a biased sample may be selected according to the personal prejudice of the investigator.
- Not Possible to estimate Sample Error: It is not possible to estimate the sampling error and the degree of accuracy achieved.

Convenience Sampling

Under this method, while selecting the sample units, the investigator gives special attention to his convenience.

Merits

- Economical: It is less expensive and less time consuming.
- Easy Command: The units of the sample are easily located and contacted by the investigators.
- Suitable for Pilot Surveys: It is often used for making pilot studies in which questions are pre-tested and preliminary information is obtained before finalizing the sample design.

Demerits

- Lack of representation: The units of the sample selected under this method hardly represent the universe.
- Personal Prejudice: Convenience samples are prone to bias by their nature.
- Unsatisfactory Results: The results obtained under this method are found to be unsatisfactory and misleading.

PRINCIPLES OF SAMPLING

There are two important principles on which the theory of sampling is based

The Law of Statistical Regularity

According to this law, if a random sample of adequate size is selected from a large population, it tends to possess the same characteristics as those of the population.

The Law of Inertia of Large Numbers

The aggregates or averages obtained from a large group are more stable than the aggregates or averages obtained from small group, i.e., larger the size of the sample, more accurate the results are likely to be.

Sample Big
Better Result

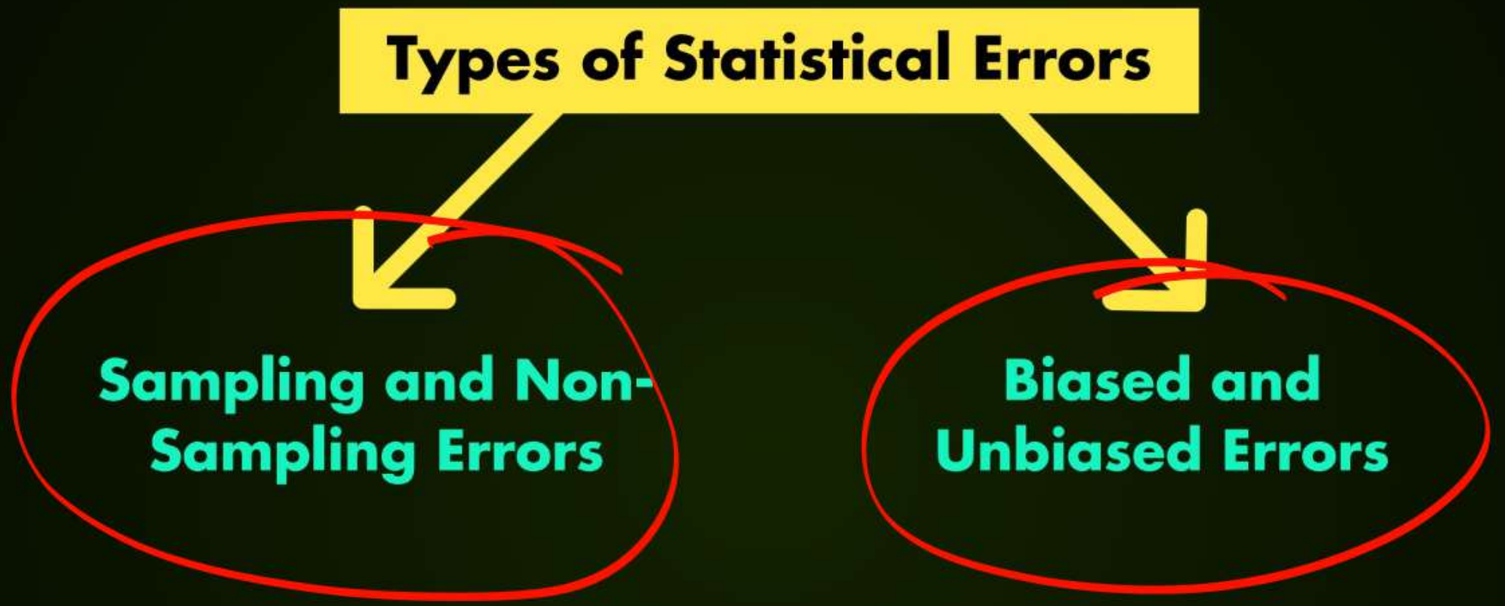
STATISTICAL ERRORS

- Mistake means wrong calculation or use of inappropriate method.
- Statistical Errors refer to difference between the collected data and actual value of facts.
- Such errors may arise due to the following reasons:
  - Selection of wrong samples.
  - Incorrect information given by the respondents.
  - Collection of data by estimates.
  - Personal prejudice of investigators

Sources of Statistical Errors

The statistical errors may arise from the following sources:

- **Errors of Origin:** Error of origin arises due to lack of proper definition of the subject- matter, bias of investigator, defective questionnaire, improper sampling, or the inherent instability of collected data.
- **Error of Manipulation:** These errors arise due to manipulation in counting, measurement, description and approximation of the various figures.
- **Error of Inadequacy:** It may arise due to use of incomplete or unrepresentative data or due to irresponsible/careless/ unqualified investigators.
- **Error of Interpretation:** Such errors can be made when data is misinterpreted.


Types of Statistical Errors
Sampling and Non-Sampling Errors
Biased and Unbiased Errors

Measures of Statistical Errors

Absolute Error

An absolute error is the difference between the actual or true value and its estimated or approximated value.

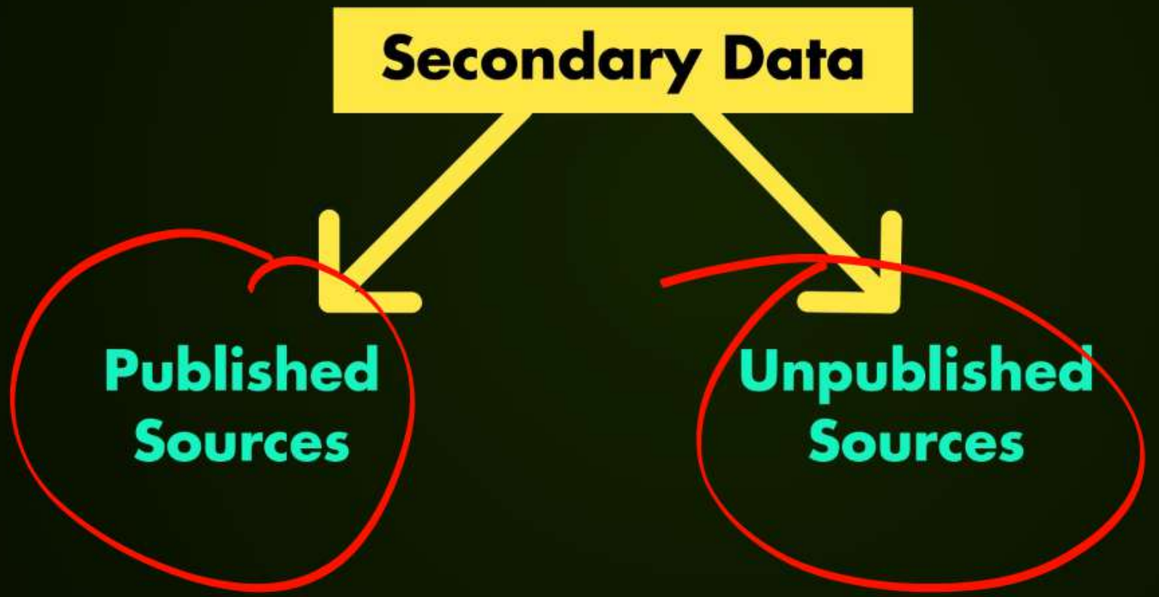
Relative Error

Relative Error is defined as the ratio of the absolute error to the actual value.



SOURCES OF SECONDARY DATA

Secondary Data is the data collected by other agencies and is used for further studies.



Important Published

- Official Publications of Central and State Governments: The publications by Indian Government are Annual Economic Survey, Documents of Five-Year Plans, India-Annual Book, Census, etc. regarding important economic variables like national income, saving, investment, employment, etc.
- Semi-Government Publications: Semi-Government organisations like municipalities, District Boards and others also publish reports in respect of birth, death, education, sanitation and many other related fields.
- International Publications: Certain International institutions publish reports from time to time regarding economic matters which are of great significance. These reports are regularly published by the agencies like United Nations Organisation (UNO), World Health Organisation (WHO), International Monetary Fund (IMF), etc.
- Publications of Trade Associations: Some big trade associations like Institute of Chartered Accountants, Trade Unions, etc. publish data collected through their statistical and research divisions.
- Newspapers and Magazines: Various newspapers as well as magazines also collect data in respect of many social and economic aspects. Some of them are Economic Times, Financial Express, Outlook Money, Business Today, etc.

Unpublished Sources

When data collected by someone is not published and is taken by other persons for the purpose of investigation, then such data is known as “Unpublished Secondary Data”.

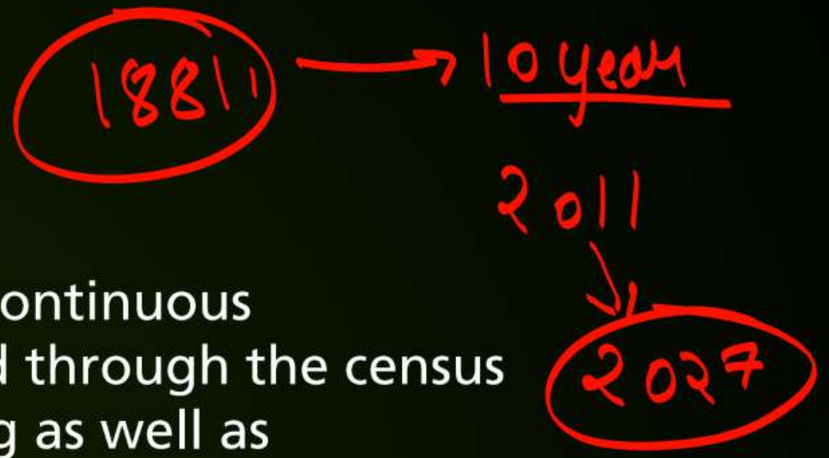
Limitations

- No proper procedure is adopted to collect the data.
- Secondary data may be influenced by the prejudices of the investigator.
- Secondary data sometimes lacks standard of accuracy.
- Secondary data may not cover the full period of investigation.

PRECAUTIONS IN THE USE OF SECONDARY DATA

- Reliability of the Data
- Suitability for the Purpose
- Census and Sampling Method
- Adequacy and Accuracy

CENSUS OF INDIA



The Census of India provides the most complete and continuous demographic record of population. The data collected through the census is used for administration, planning and policy making as well as management and evaluation of various programmes by the Government.

- The Census is being regularly conducted every 10 years since 1881. The first Census after Independence was held in 1951.
- The responsibility of conducting the Census rests with the Office of the Registrar General and Census Commissioner, India, under Ministry of Home Affairs, Government of India.
- The Census collects information on various aspects of population such as the size, density, sex ratio, literacy, migration, rural-urban distribution, etc.
- The most recent census of India was performed in 2011. It was the 15th census in an unbroken series and the 7th after independence in 1947.

NATIONAL SAMPLE SURVEY ORGANISATION

National Sample Survey (NSS) was set up in 1950 on the recommendations of National Income Committee, chaired by late Prof. P. C. Mahalanobis.

- The basic aim of setting up NSS was to fill up large gaps in statistical data for computation of national income aggregates, especially in respect of unorganised/household sector of the economy.
- NSS was reorganised as National Sample Survey Organisation (NSSO) in March, 1970.
- NSSO is involved in three types of surveys:
  - Socio-economic surveys;
  - Annual Survey of Industries; and
  - Agricultural surveys.



- NSSO organisation has four divisions:
  - Survey Design and Research Division (SDRD)
  - Field Operations Division (FOD)
  - Data Processing Division (DPD)
  - Co-ordination and Publication Division (CPD)



Activities of NSSO

- Carries out multi-subject integrated socio-economic surveys;
- Undertakes field work for the Annual Survey of Industries and follow-up surveys of Economic Census;
- Conducts sample checks on area enumeration and crop estimation surveys of State Statistical agencies;
- Prepares the urban frames useful in drawing of urban samples;
- Collects price data from rural and urban sectors;
- Conducts ad-hoc surveys and pilot enquiries for methodological studies.

THANK YOU

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