CHAPTER – 1

Nature & Scope of Business Economics

Unit – 1 (Introduction)

(1) Economics owes its origin to the greek word "Oikonomia" which means management of household.

(2) There are 2 Fundamental fact of Economy?

(i) Human wants are unlimited

(ii) Means to satisfy these unlimited wants are relatively scarce

(3) Business Economics : It is application of economic analysis to make decisions in business operations. This concept was given by Joel dean in 1951.

In Simple words :

Business Economics means decision making.

(i) Business economics means use the economic analysis to make decisions involving the best use of an organisation's scarce resources.

(ii) Business economics are also known as Managerial economics.

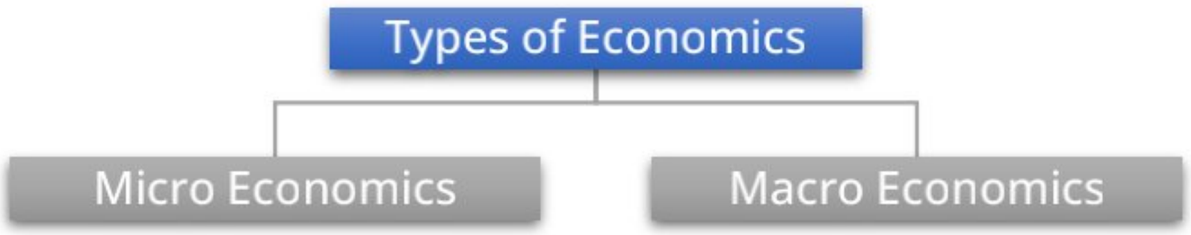
(iii) Business economics integrates economy theory with business practice.

(iv) Economics theory just provide the tools which explain the concept of demanet, supply, cost, production, price, marketing, competition etc.

(v) Business economics apply these tools in the process of decision making of business.

(vi) Business economics fill the gap between economic theory and business practice.

(vii) Business economics is also useful for NGO and Non-profit organisation as well.



Macro Economics

OR

Theory of Income & Employment

OR

General Equilibrium Analysis

OR

Theory of Lumping

Macro Economics

1. Study of Economy at its whole level
2. Aggregate study
3. We study mainly the following factors
   (a) Overall level of output (b) National Income
   (c) General price level (d) Interest rate
   (e) Balance of trade (f) Balance of payments
   (g) External value of currency (h) Overall level of savings
   (i) Overall level of investment (j) Level of employment
   (k) Rate of economic growth (l) Export, Import and foreign investment

Micro Economics/Price theory/slicing theory

1. Study at individual level
2. We focus on small number of groups
3. We mainly study the following factors
   (a) Product pricing
   (b) Consumer behaviour
   (c) Factor pricing
   (d) Economic condition of a section of people
   (e) Behaviour of Firm
   (f) Location of Industry.

Macro Economics Vs Macro Economics

Micro Economics	Macro Economics
(1) It is study of individual economic unit of an economy	It is the study of economy as a whole and its aggregates
(2) It deals with individual income, individual prices and individual output etc.	It deals with national income, general price rural and national output etc.
(3) Its central problem is price determination and allocation of resources	Its central problem is determination of rural income
(4) It main roots are demand and supply of particular commodity / factor	Its main roots are aggregate demand & aggregate supply of economy as a whole.
(5) It discusses how equilibrium of a consumer, a producer or an industry is attained.	It is concerned with determination of equilibrium level of income and employment.

Nature of Business Economics

(SPAM-MINT)- Love sir's way of learning

- Business Economics is a Science
  1. Science means Systemized body of knowledge which establishes cause and effect relationship.
  2. Economics provides tools like statistics, econometrics, mathematics etc.
  3. Business economics integrates the tools in to decision making
- Business economics is an art

  It involves practical application of rules and principles.
- Business Economics largely/heavily Based on Micro Economies
- Business Economics incorporates tools of Macro economics (doesn't operate in vacuum)
- Business Economics use the theory of markets and private enterprise
- Business Economics is inter-disciplinary in approach

  It uses multiple tools such as :
  (a) Mathematics
  (b) Operational Research
  (c) Management theory
  (d) According, marketing, finance
  (e) Statistics and econometrics
- Business Economics is Pragmatic in approach as it tackles practical problems which the firm faces in the real world.
- Business Economics is Normative in Nature

Positive Economics	Normative Economics
1. It refers to the economics studies "What is"	It refers to the economics studies "What should be" or "What ought to be"
2. Its statements can empirically verified	Its statements may or may not be verified
3. It depends upon scientific logics or facts	It depends on ethical logic or values.
4. It studies the cause & effect relationship.	It depends on ethical logic or values
5. It is objective and discriptive in nature.	It is subjective and prescriptive.
6. Example (i) India is over populated (ii) Demand falls when price rises	Example (i) Rich people should be more taxed (ii) Govt. should increase expenditure on health care.

Scope of Business Economics

(i) Internal Issues (Operational Issues)

(ii) External Issues (Environmental Issues)

- Internal Issues
  1. Also known as operational issues
  2. Issues arise within the organisation
  3. With in the control of management
  4. Internal in Nature
  5. Issues :
     - (a) Choice of Business
     - (b) Size of business
     - (c) Productive decision
     - (d) Technology
     - (e) Pricing
     - (f) Sales promotion
     - (g) Financial management of investment
     - (h) Management of inventory etc.
- Micro economics applied to Resolve internal issues:
  - (a) Demand analysis and forecasting
  - (b) Production and cost analysis
  - (c) Inventory management
  - (d) Market structure and pricing policies
  - (e) Resources allocation
  - (f) Theory of capital and investment decisions
  - (g) Profit analysis
  - (h) Risk and uncertainty analysis
- External Issues
  1. Also known as Environmental issues
  2. Environmental factors affect the performance of business
  3. Micro Economics applied to Resolve these issues
  4. Following macro theories deals with external issues.

Macro-economic theory is applied to solve external issues.

1. Types of Economic System
   - Capitalist
   - Socialist
   - Mixed
2. Stages of Business cycle
3. Government policies and Regulations
4. Banking policies and Regulations
5. Social and political environment
6. Trend in national income / employment / prices / savings etc.
7. Foreign Trade policies, fiscal policies

■ Recap lelo thoda sa jaldi – jaldi

- An economic environment exists because of two facts i.e., human wants are unlimited and Resources are limited.
- Economics is the study of process by which the scare resources are allocated to satisfy the maximum wants, gives maximum satisfaction.
  (i) Macro economics
  (ii) Micro economics
- Microeconomics examines how the individual firm make decision as to how to efficiently allocate their scarce Resources.
- Macroeconomics study the behaviour of the large economic aggregate such as level of output, investment, growth rate etc.
- Business economics integrates economic theory with business practice.
- Business economics concern with micro and macro also play important Role. Macro economics analyses the environment in which business has to function.
- Business issues has two category
  (i) Internal
  (ii) External

Unit – 2 : Basic Problems of An Economy

Central Economic Problems

What to produce?	Resources being limited, societies have to decide which goods & services to produce & it's quantity.
How to produce?	It refers to the problem of choice related to production technology. There are two types of production technology :- (1) Labour intensive technology (2) Capital intensive technology
Whom to produce ?	A society cannot satisfy each and every want of all the people. It has to decide the share of different people in the national cake of goods and services.
What Provisions are to be made for economic growth?	The society instead of using all the scarce resources for current consumption, makes provision for saving and investing the resources for future economic growth.

Types of Economies

(1) Capitalist Economy

(2) Socialist Economy

(3) Mixed Economy

Capitalist Economy

- An economy where all means of production are privately owned and run for individual profits.
- Government's role in the management of the economic affairs is limited.
- Other names- Free market economy, Laissez-Faire
- Eg- USA, Japan, Hong Kong, South Korea etc.

Features - Capitalist Economy

1. Right to private property – All the productive factors (land, machines etc) can be privately owned, and used as the owner desires.
2. Freedom of enterprise – Individuals (producers, consumers or resource owners) can engage in any business/economic activity.

3. Freedom of economic choices – Individuals are free to make economic choices about consumption, work, production etc.
4. Profit Motive – It's a driving force and directs all economic activities.
5. Consumer sovereignty – Consumer is uncrowned King i.e. they decide what to produce and in what quantities through there freedom to make purchase.
6. Competition – It brings out better and innovative products and helps in efficient use of resource.
7. Absence of Government Interference – In the absence of government, the economic activities are regulated by self-interest and price mechanism.

Capitalist Economies - Solving Central Problems

Deciding what to produce?	Producers produce for profit, thus they decide what to produce depending on consumer's preference, which is shown through there purchases.
Deciding how to produce?	Producers choose techniques with minimum cost of production thus, Relative prices of factors of production being a major determinant.
Deciding whom to produce for?	Goods are produced for those who have the buying capacity which depends on there income+ price of factors they owned+ property.
Deciding provisions for economic growth?	Consumers consume and save which depends on there income and interest rate whereas the entrepreneurs invest and it depends on the rate of return on the capital.

MERITS	DEMIRITS
Self-regulating Price mechanism	Economic inequalities Two Classes of Society (i) Haves & (ii) Have-Nots
Greater efficiency & incentive to work	Less Merit Goods like Education, health etc
Lower cost of production	Demand Pattern Does not represents real needs of society
Maximum consumer satisfaction	Consumer sovereignty is a myth
Encourages Innovation (Rewards men of initiative and punishes in efficient)	Property rights > human rights
Democratic framework	Formation of monopolies & No Security of Employment

Socialist Economy

- The concept of socialist economy was propounded by Karl Marx and Frederic Engels in their work 'The Communist Manifesto' published in 1848.
- The erstwhile U.S.S.R. was an example of socialist economy from 1917 to 1990. In today's world there is no country which is purely socialist. Other examples include Vietnam, China and Cuba. North Korea, the world's most totalitarian state, is another example of a socialist economy.
- All members get benefit from the production on the basis of equal rights.
- Other names - Command economy, Centrally planned economy, controlled economy.

Socialist Economy - Features

- Collective ownership – All means of production are collectively owned (except small farms, trading firms etc.)
- Economic planning – A centrally planning authority exists to set objectives and to take major economic decisions (what to produce etc.)
- Absence of consumer choices – Consumers are free from hunger but not free to make choices
- Relatively equal income distribution – The income is distributed relatively equally
- Minimum role of price mechanism – Price mechanism only has a secondary role (in disposal of accumulated stock) because of predetermined distribution of productive resources and the prices are administered (set by the govt.).
- Absence of competition – State being the sole entrepreneur, there is no competition.

MERITS	DEMIRITS
Equal distribution of wealth	State monopolies
No wastage of resources on advertisement	Inefficiency, Corruption, Red tapism etc.
Unemployment is reduced	less freedom of choice
labors are protected against exploitation	inefficient price administration i.e. Administered Prices
Absence of profit motive	not practicable
Comprehensive social security	No incentive for hard work in form of profit
balanced economic growth	Denies basic right of private ownership
Minimum standard of living	Absence of competition restricts innovation

Mixed Economy

- It is a system that depends on Government & markets for allocation of resources as it includes the best features and excludes the demerits of both controlled and market economies.
- The presence of profit motive doesn't promote the interest of a community, as a whole, Thus the government runs the important industries itself to eliminate the free play of profit motives.

Mixed Economy - Coexistance of Sectors

Private Sector	Production & distribution is managed by private individuals or groups to promote personal profit but the government may regulate them directly or indirectly.
Public Sector	Industries set up by state for the welfare of the community and not for profit
Combined Sector	Government and private enterprise come together to produce goods and services.

MERITS	DEMIRITS
Economic freedom & efficient decision making because of competition	excessive state control reduces efficiency
consumers' sovereignty & freedom of choice	
Appropriate Incentives for innovation & technological progress.	Difficult to maintain a proper balance between public sector & pvt. Sector
Absence of strong govt. initiative, pvt. Sector grows disproportionately	Absence of strong govt. initiative, pvt. Sector grows disproportionately

CHAPTER – 2 : Theory of Demand and Supply

Unit -1 Law of Demand and Elasticity of Demand

- **Definition of Demand**
  - Quantity of a good that buyers are willing and able to purchase at various prices during a given period.
  - More than just desire; it involves the ability to pay and the willingness to use that means for a purchase.

- **Elements of Effective Demand :**
  - Desire, means to purchase, and willingness to use those means.
  - Desire alone isn't enough; it must be backed by purchasing power.

- **Quantity Demanded :**
  - Quantity of a good that buyers are willing and able to purchase at a particular during a given period.
  - Always expressed at a given price.
  - It is a flow concept.

- **Factors Determining Demand :**

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1. **Price of the Commodity:**
   - Inverse relationship between price and demand.
   - Higher price reduces quantity demanded; lower price increases it.
   - Example: If the price of Samosa increases, people might buy fewer of them.
2. **Price of Related goods:**
   - Complementary goods (e.g., tea & sugar) and substitutes (e.g., pepsi & coca-cola) affects demand.
   - In case of Complementary goods' prices and demand affect each other inversely;
   - In case of substitutes' prices and demand have a direct relation.

3. Disposable Income:

- Increase in disposable income generally increases demand for goods.
- Normal goods' demand rises with income; inferior goods' demand falls.
- Example: As income rises, demand for luxury goods like high-end electronics increases.
- In case of Essential / Necessities like Food,water, Medicine etc. ↑ in Demand will be less than proportionate ↑ in income
- As people become richer, there is relative decline in importance of non-durable goods and increase in importance of durable goods.
- In case of Luxury / Prestige Goods --Demand increases beyond a certain level of income and keep rising as income increases.

4. Tastes and Preferences:

- Modern or fashionable goods have higher demand.
- External effects like demonstration, bandwagon, Veblen & snob effects influence demand.
- Example: People buying the latest gadgets due to a demonstration effect.

5. Consumers' Expectations:

- Expectations about future prices, income, and supply influence current demand.
- Positive expectations lead to higher demand; negative expectations reduce it.
- Example: Expecting increase in price of petrol tomorrow in the future may increase current demand of petrol.

Other Factors

- Population size, age distribution, national income, consumer-credit facilities, government policies, and various external factors play roles in influencing demand.

Demand Function:

1. It refers to the functional relationship between the demand for a product (the dependent variable) its determinants (the independent variables) is called demand function

$D_x = f(P_x, Y, P_y, T, \text{etc.})$

Where –

D_x = quantity demanded of product X

P_x = the price of the product X

Y = disposable income of the consumer

P_y = the price of its related goods

P_c = the price of its complementary goods

T = consumer's tastes and preferences

2. Law of Demand:

- Definition: States an inverse relationship between the price of a good and the quantity demanded, assuming other factors remain constant (ceteris paribus).
- Alfred Marshall's Definition: "The greater the amount to be sold, the smaller must be the price."
- Illustration: When the price increases, quantity demanded falls; when the price decreases, quantity demanded rises.
- Factors Held Constant: Prices of related goods, consumer income, tastes and preferences etc.

3. Demand Schedule:

- Definition: A table showing quantities of a good at different prices, assuming other factors are constant.

4. Demand Curve:

- Definition: A graphical representation of the demand schedule.
- Slope: Negative slope (downward) indicating the inverse relationship.

5. Market Demand Curve:

- Definition: Market demand shows the total quantity demanded by all buyers at different prices.
- Summation: Adding individual quantities demanded at each price to obtain market demand.
- Market Demand Curve: Horizontal/lateral summation of individual demand curves.

■ Rationale/reasons/ causes of the Law of Demand:

1. Price Effect of a Fall in Price:

- Substitution Effect: Consumers substitute cheaper goods for relatively expensive ones, increasing the demand for the cheaper good.
- Income Effect: As prices fall, real income increases, allowing consumers to buy more of the cheaper commodity.

2. Utility Maximizing Behaviour of Consumers:

- Consumers seek equilibrium by maximizing satisfaction, leading them to buy more when prices are lower due to diminishing marginal utility.

3. Arrival of New Consumers:
   - Lower prices attract new consumers who were previously unable to afford the commodity, expanding the consumer base and increasing demand.
4. Different Uses:
   - Lower prices often result in the commodity being used for various purposes, increasing its demand. Example: Electricity.

■ Exceptions to the Law of Demand:

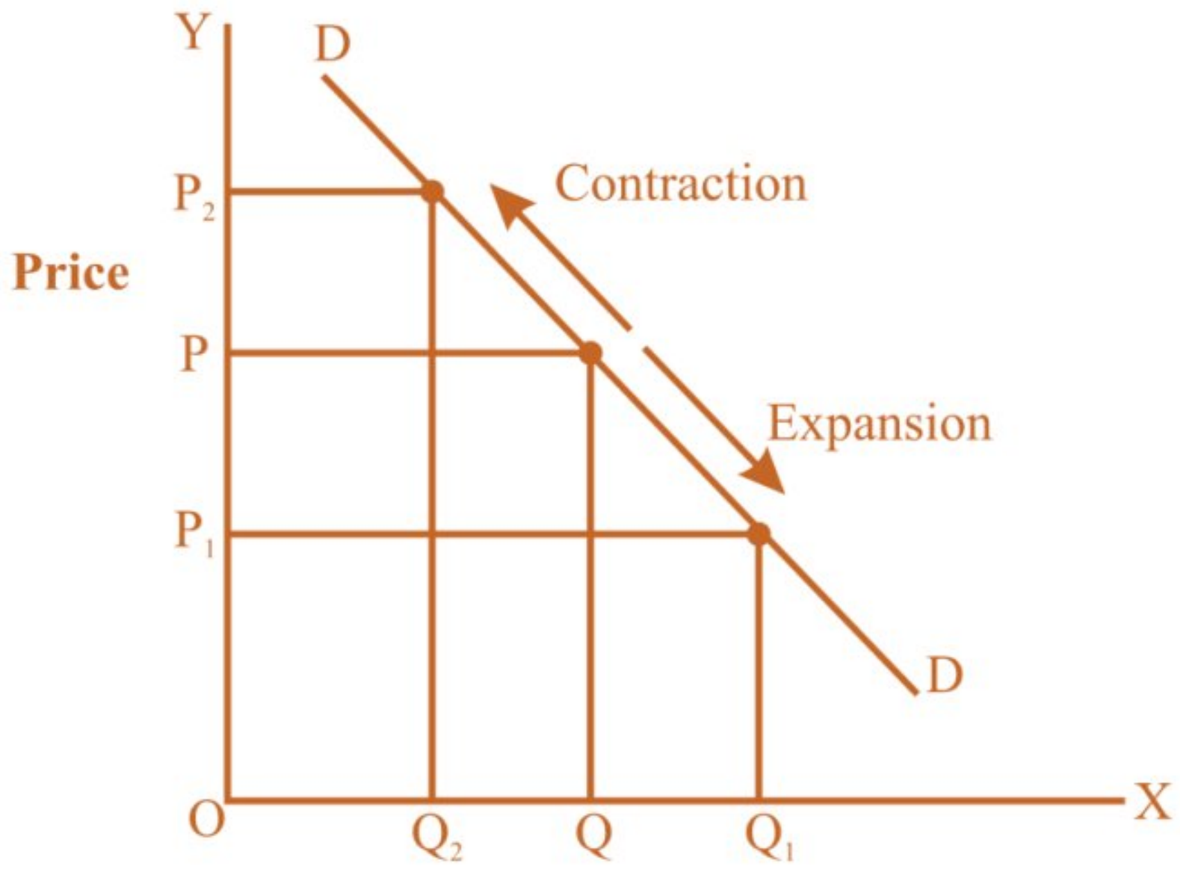
1. Conspicuous Goods (Veblen/snob/Prestige goods): Certain goods serve as status symbols or have snob appeal, and their demand increases with higher prices.

   Example: Diamonds, where higher prices enhance prestige value.
2. Giffen Goods: Such goods exhibit direct price-demand relationship. All Giffen goods are inferior goods; but all inferior goods are not Giffen goods. Giffen goods are low quality goods having no close substitutes taking a substantial portion of buyer's income.
3. Conspicuous Necessities : Certain goods, due to their constant usage and demonstration effect, become necessities and defy the usual law of demand.

   Example: Television sets, refrigerators, and air-conditioners.
4. Future Expectations about Prices: Anticipation of future price increases may lead to increased demand even as current prices rise, violating the traditional law of demand.

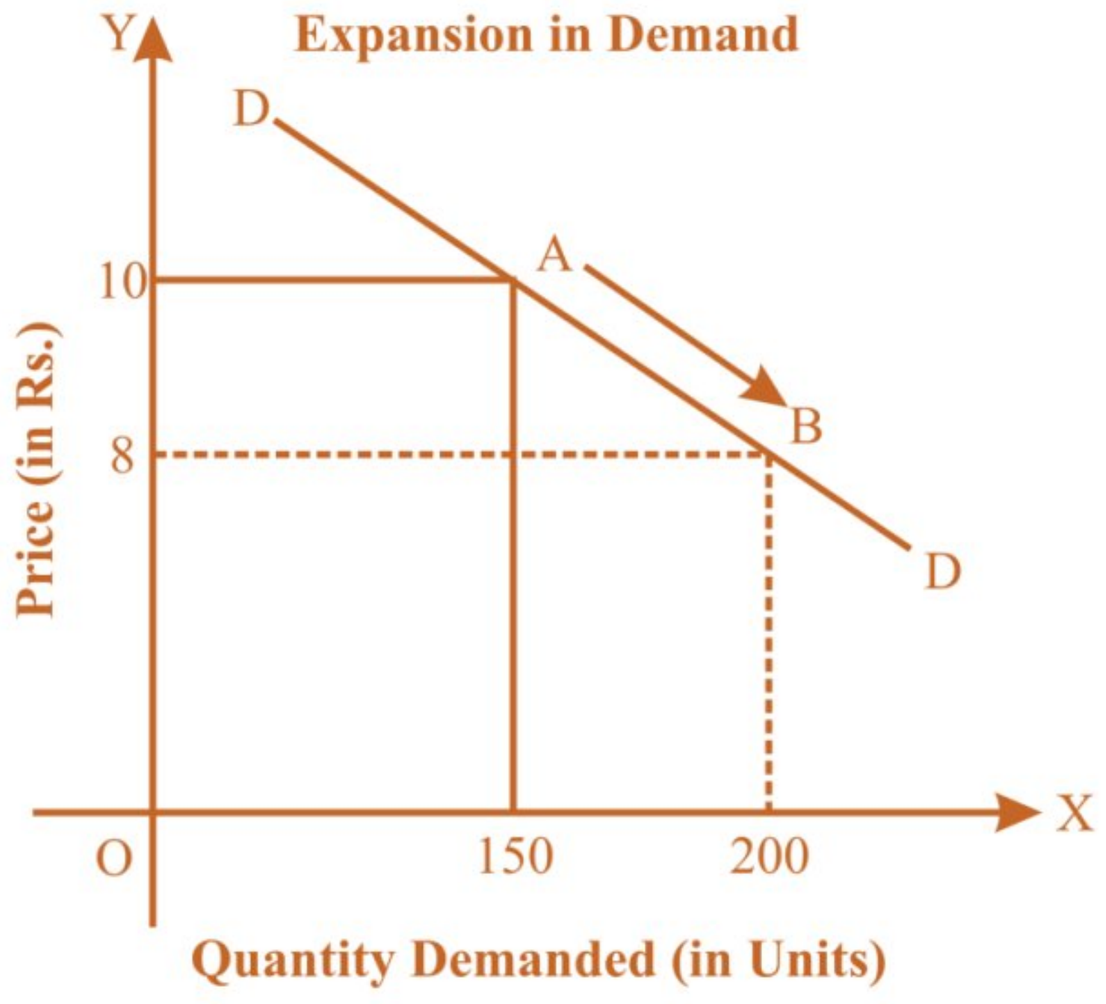
   Example: when there is wide-spread drought, people expect that prices of food grains would rise in future. They demand greater quantities of food grains even at the higher price.
5. Incomplete Information and Irrational Behaviour: Consumers with incomplete information or irrational behaviour may make inconsistent purchasing decisions, deviating from the expected demand-price relationship.
6. Demand for Necessaries: In the case of necessary goods, demand may remain relatively constant regardless of price changes, as people need to consume minimum quantities.
7. Speculative Goods: In speculative markets like stock market, demand may rise with increasing prices and fall with declining prices, challenging the conventional law of demand.
8. Other Significant Changes: Changes in factors like income, prices of related goods, tastes, and fashion can invalidate the inverse demand-price relationship.

- Expansion of Demand & Contraction of Demand Both are the types of Movement Along Demand Curve:



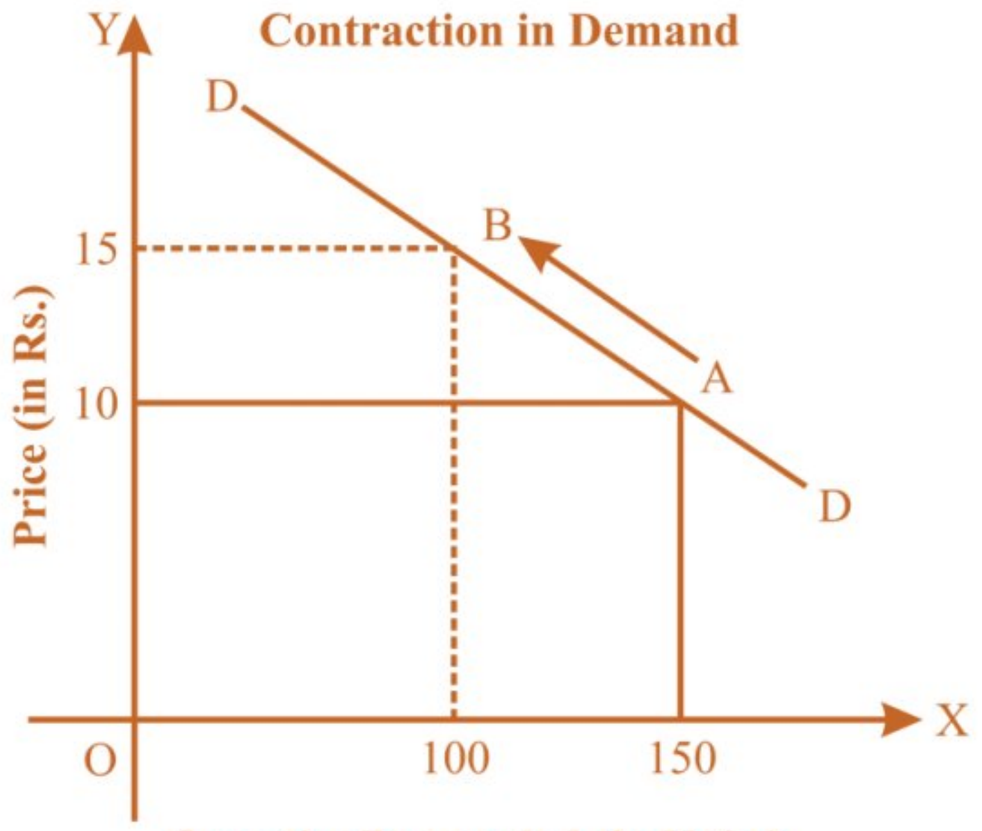
1. Expansion of Demand – It is rise in demand due to fall in price. Also, known as increase in quantity demanded. It shows downward movement along the demand curve.

Price (₹)	Quantity (Units)
10	150
8	200



2. **Contraction of Demand –** It is fall in demand due to rise in price. Also, known as decrease in quantity demanded. It shows upward movement along the demand curve.

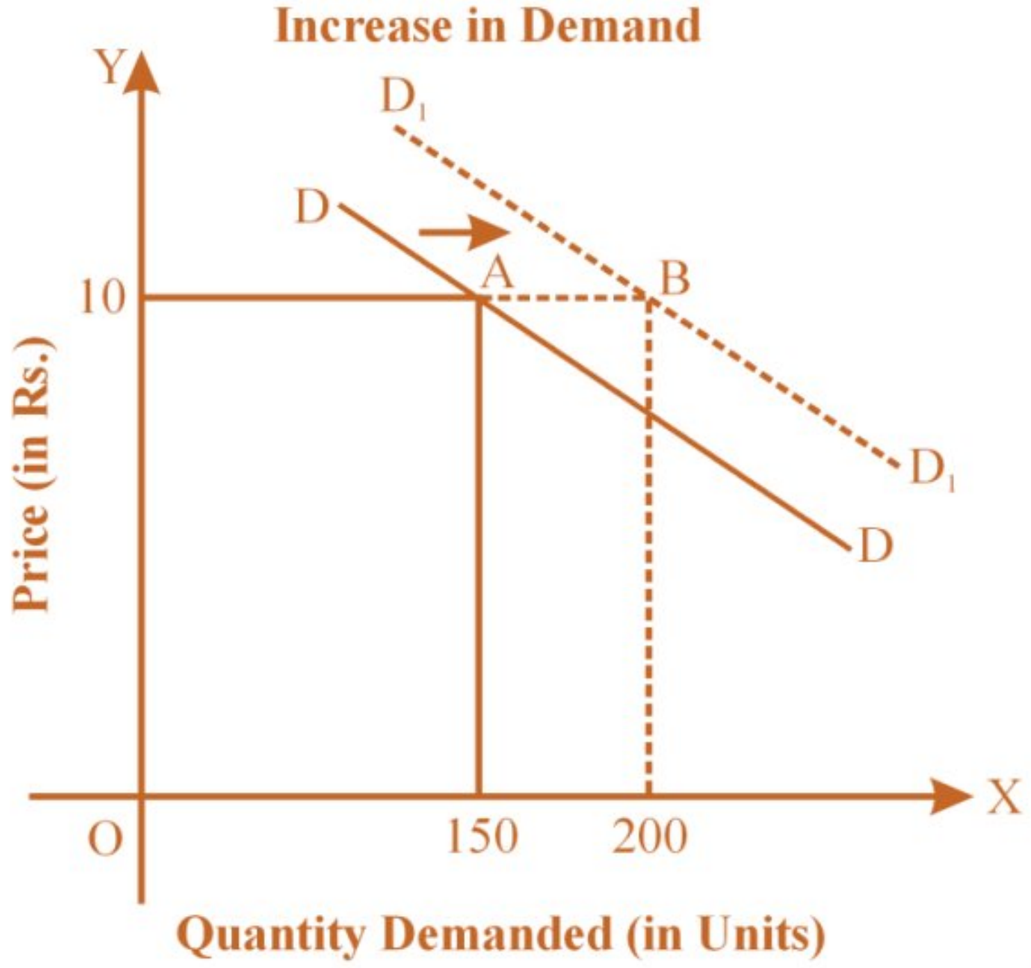
Price (₹)	Quantity (Units)
10	150
15	100



Increase and Decrease in Demand both are the types of shift in demand curve.

1. **Increase in demand –** it is increase in demand due to change in the factors other than price of own good. It leads to rightward shift in demand curve.

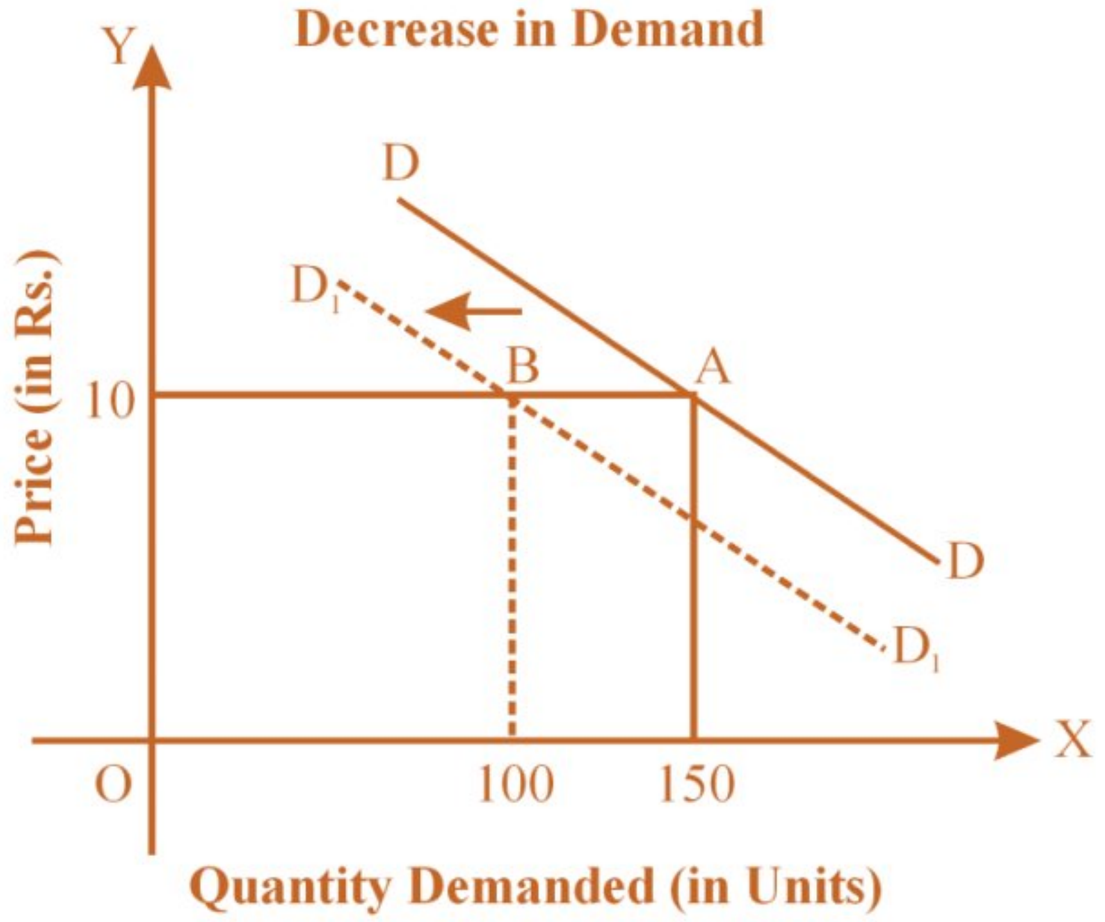
Price (₹)	Quantity (Units)
10	150
10	200



Captain Love Kaushik

2. Decrease in demand – it is decrease in demand due to change in the factors other than price of own good. It leads to leftward shift in demand curve.

Price (₹)	Quantity (Units)
10	150
10	100



ELASTICITY OF DEMAND

- Elasticity of demand measures how much people change their buying habits in response to changes in certain factors. It's calculated by dividing the percentage change in quantity demanded by the percentage change in a relevant factor.

Types of Elasticity:

1. Price Elasticity: Measures sensitivity to changes in the product's own price.
2. Cross Elasticity: Measures response to changes in other product prices.
3. Income Elasticity: Measures response to changes in income.
4. Advertisement Elasticity: Measures response to changes in expenditure on advertising.

Price Elasticity of Demand :

- Importance: Crucial for firms to predict sales impact and make profit-maximizing pricing decisions.
- Calculation:

$$E_p = \frac{\text{Percentagechangeinquantitydemanded}}{\text{Percentagechangeinprice}} = \frac{\frac{\text{ChangeinQuantity}}{\text{OriginalQuantity}} \times 100}{\frac{\text{ChangeinPrice}}{\text{OriginalPrice}} \times 100}$$

$$E_P = \frac{\Delta q}{q} \times \frac{p}{\Delta p} = \frac{\Delta q}{\Delta p} \times \frac{p}{q}$$

Where –

q = Original quantity demanded

p = Original price

Δ = Indicates change

E = Price elasticity

Understanding Price Elasticity:

- Negative Sign: it shows the law of demand - as price rises, quantity demanded decreases.
- Magnitude Focus: Only absolute value matters; ignore the negative sign.

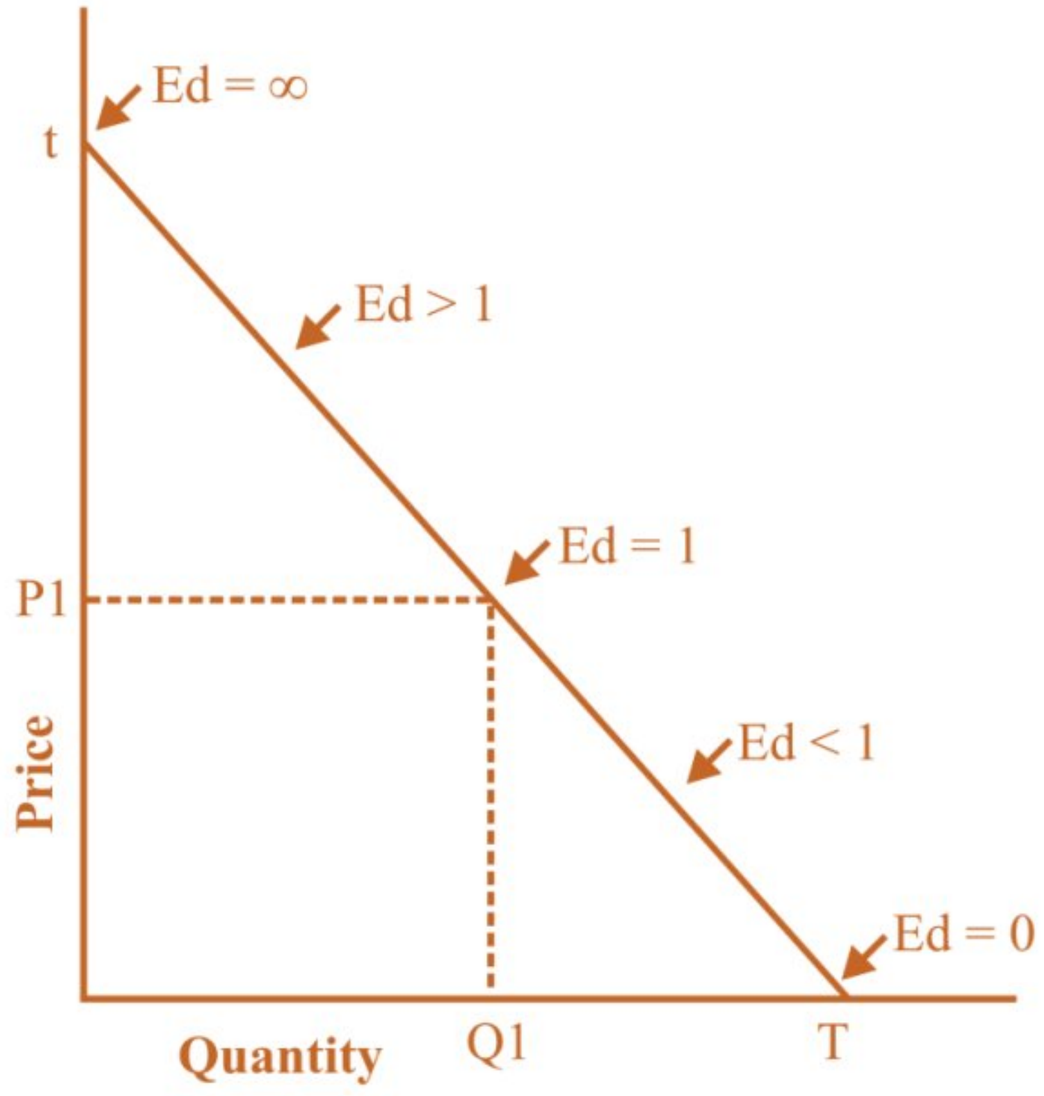
POINT ELASTICITY

The point elasticity of demand is the price elasticity of demand at a particular point on the demand curve. The concept of point elasticity is used for measuring price elasticity where the change in price is infinitesimal (negligible or very small).

$E_D = \frac{-dq}{dp} \times \frac{p}{q}$ (derivative method of point elasticity)

- **Measurement of Elasticity on a Linear Demand Curve– Geometric Method :**

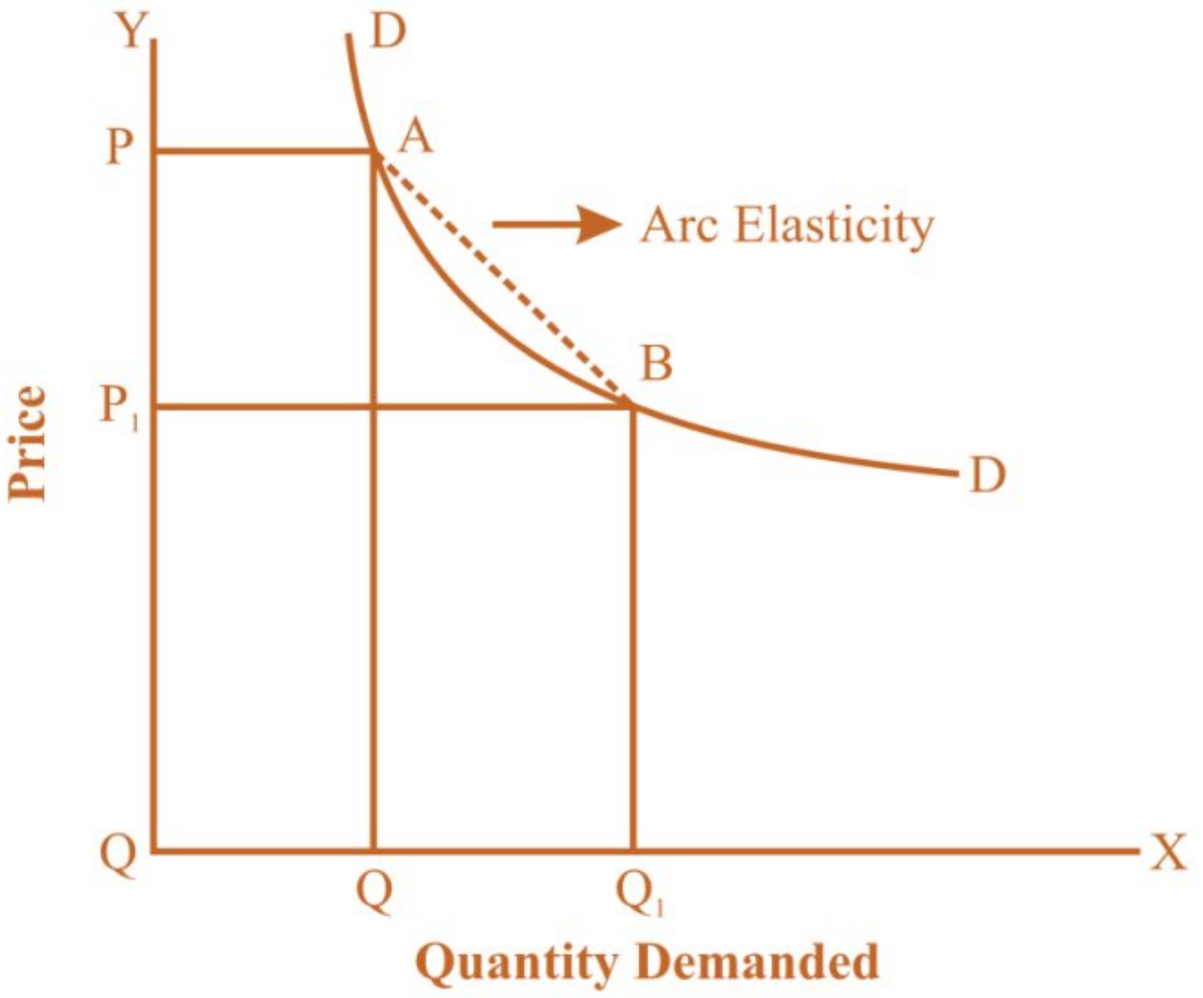
$E_p = \frac{\text{LowerSegmentoftheDemandCurve}}{\text{UpperSegmentofDemandCurve}}$



- Arc-Elasticity (mid-point method)

$$Ep = \frac{\frac{Q_2 - Q_1}{(Q_2 + Q_1)/2}}{\frac{P_2 - P_1}{(P_2 + P_1)/2}}$$

$$Ep = \frac{Q_2 - Q_1}{Q_2 + Q_1} V \frac{P_2 + P_1}{P_2 - P_1}$$



$$E_d = \frac{\Delta Q}{\Delta P} \times \frac{P + P_1}{Q + Q_1}$$

Total Outlay (Expenditure) Method of Calculating Price Elasticity.

If Price and Total Expenditure are :–

(I) Indirectly related $\Rightarrow E_P > 1$

P↑TE↓ P↓TE↑

(II) Directly Related $\Rightarrow E_P < 1$

P↑TE↑ P↓TE↓

(III) Not related $\Rightarrow$ TE $\rightarrow$ Constant $\Rightarrow E_p = 1$

Total Revenue

Total revenue (TR) = Price × Quantity sold

Except in the rare case of a good with perfectly elastic or perfectly inelastic demand, when a seller raises the price of a good, there are two effects which act in opposite directions on revenue.

- Price effect: After a price increase (decrease), each unit sold sells at a higher (lower) price, which tends to raise (lower) the revenue.
- Quantity effect: After a price increase (decrease), fewer (more) units are sold, which tends to lower (increase) the revenue.

Determinants of Price Elasticity of Demand :

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Factors influencing whether demand for a product is elastic or inelastic.

1. Availability of Substitutes:

   Example: Butter, cars, soft drinks have substitutes. Price changes lead to substantial substitution. More substitutes, greater elasticity.

2. Position in Consumer's Budget:

   Example: Goods like salt have inelastic demand; spend a small fraction of income. Elastic goods like clothing absorb a significant part of income.

3. Nature of the commodity:

   Example: Luxury goods (e.g., home theatre) are elastic, necessities (e.g., food, housing) are inelastic.

4. Number of Uses:

   Example: Milk has multiple uses. Price drop extends consumption; price rise limits use to essential purposes. More uses, greater elasticity.

5. Time Period:

   Example: Longer time allows adjustments as compared with Short-term. Long-term: changes habits. Hence, elastic demand in long run and inelastic demand in the short run.

6. Consumer Habits:

   Example: Habitual consumers show inelastic demand. Rigid preferences make demand less price elastic.

7. Tied Demand:

   Example: Goods tied to others (e.g., printers and ink cartridges) have inelastic demand.

8. Price Range:

Example: Very high or low-priced goods have inelastic demand. Middle-range goods have elastic demand.

9. Minor Complementary Items:

Example: Demand for cheap complementary items for costlier products tends to be inelastic.

Income Elasticity of Demand :

- The income elasticity of demand measures the degree of responsiveness of quantity demanded to changes in income of the consumers
- The income elasticity is defined as a ratio of percentage change in the quantity demanded to the percentage change in income

$$\text{Income Elasticity} = \frac{\%\text{ChangeinQuantityDemanded}}{\%\text{ChanceinIncome}}$$

$$\text{Symbolically} - E_y = \frac{\Delta Q}{\Delta Y} \times \frac{Y}{Q}$$

The income elasticity of demand is Positive for all normal or luxury goods and the income elasticity of demand is Negative for inferior goods. Income elasticity can be classified under five heads:

1. Zero Income Elasticity:

- It means that a given increase in income does not at all lead to any increase in quantity demanded of the commodity.
- In other words, demand for the commodity is completely income inelastic or Ey < 0.
- Commodities having zero income elasticity are called Neutral Goods.
- Example – Demand in case of Salt, Match Box, Kerosene Oil, Post Cards, etc.

2. Negative Income Elasticity;

- It means that an increase in income results in fall in the quantity demanded of the commodity or E_y <0.
- Commodities having negative income elasticity are called Inferior Goods. Example – Jawar, Bajra, etc.

3. Unitary Income Elasticity:

- It means that the proportion of consumer's income spent on the commodity remains unchanged before and after the increase in income or E_y = 1. This represents a useful dividing line.

4. Income Elasticity Greater Than Unity:
   - It refers to a situation where the consumers spends Greater proportion of his income on a commodity when he becomes richer. $E_y > 1$,
   - Example – In the case of Luxuries like cars, T.V. sets, music system, etc.
5. Income Elasticity Less Than Unity:
   - It refers to a situation where the consumer spends a Smaller proportion of his income on a commodity when he becomes richer. $E_y < 1$,

There is a useful relationship between income elasticity for a good and the proportion of income spent on it. The relationship between the two is described in the following three propositions:

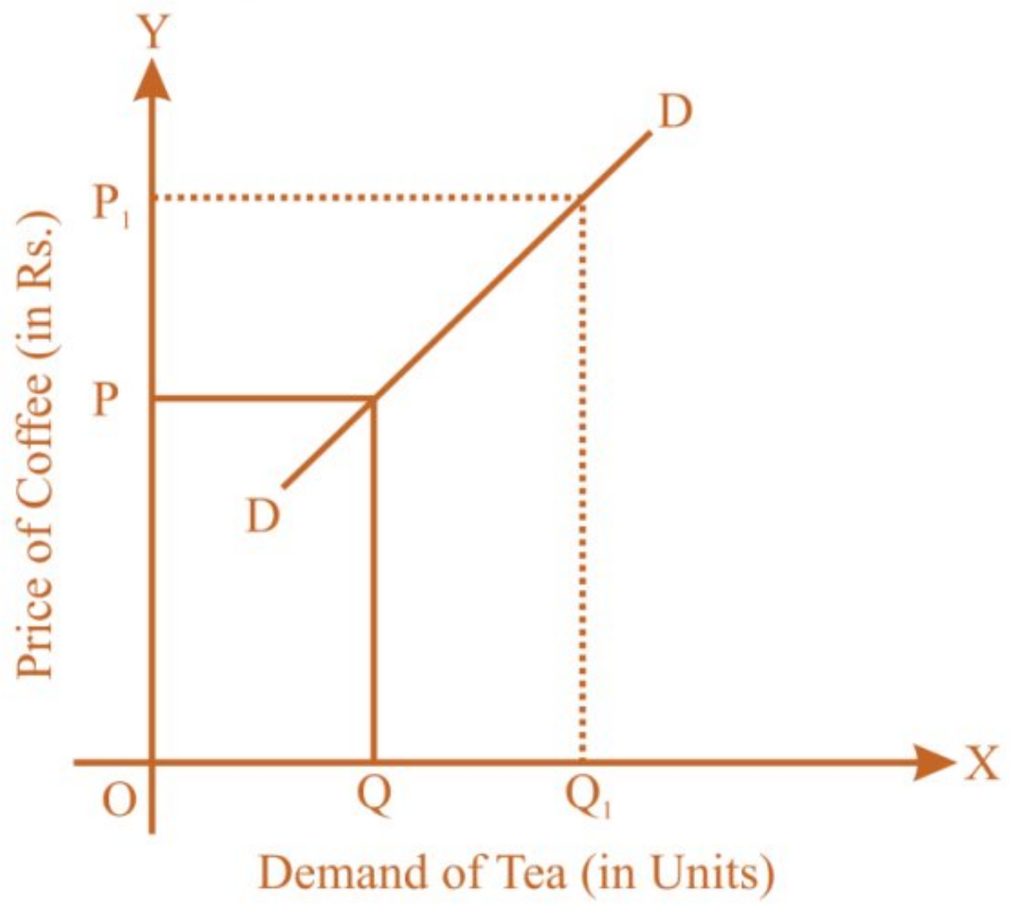
1. If the proportion of income spent on a good remains the same as income increases, then income elasticity for the good is equal to one.
2. If the proportion of income spent on a good increase as income increases, then the income elasticity for the good is greater than one.
3. If the proportion of income spent on a good decrease as income rises, then income elasticity for the good is less than one.

Cross-Price Elasticity of Demand

Cross Demand Definition: Examines how changes in the prices of related goods impact the demand for a specific commodity. Focuses on complementary and substitute goods.

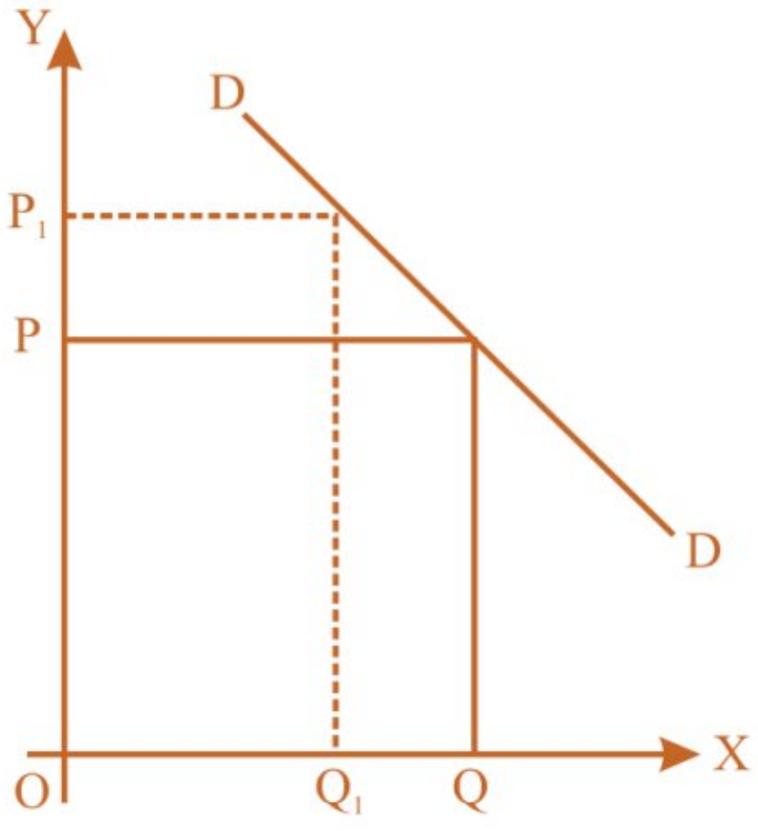
1. Substitute Products and Demand: If two goods are substitutes, an increase in the price of one leads to an increase in the demand for the other.

   Example: If the price of tea (X-axis) rises, people buy more coffee (Y-axis), a substitute. The cross-demand curve slopes upwards.



2. Complementary Goods : For complementary goods, a change in the price of one affects the demand for the other in the opposite direction.

   Example: If the price of solar panels rises, demand for batteries (complementary) falls. In the case of bread and butter, an increase in bread prices reduces the demand for butter.



3. Real-Life Application:

- Scenario: Consider smartphones and mobile data plans. If the price of smartphones increases, the demand for cheaper phones or alternative communication devices may rise, indicating a substitute relationship. On the other hand, a rise in mobile data plan prices may lead to decreased demand for smartphones, showcasing a complementary relationship.

Advertisement Elasticity

Advertisement elasticity of sales or promotional elasticity of demand is the responsiveness of a good's demand to changes in the firm's spending on advertising. The advertising elasticity of demand measures the percentage change in demand that occurs given a one percent change in advertising expenditure. Advertising elasticity measures the effectiveness of an advertisement campaign in bringing about new sales.

Advertising elasticity of demand is typically positive. Higher the value of advertising elasticity greater will be the responsiveness of demand to change in advertisement.

Advertisement elasticity varies between zero and infinity. It is measured by using the formula;

$$Ea = \frac{\%Changeinquantitydemanded}{\%Changeinspedingonadvertising}$$

$$Ea = \frac{\Delta Qd/Qd}{\Delta A/A}$$

Where Δ Qd denotes increase in demand

Δ A denotes additional expenditure on advertisement

Qd denotes initial demand

A denotes initial expenditure on advertisement

Elasticity	Interpretation
Ea = 0	Demand does not respond at all to increase in advertisement expenditure
Ea > 0 but < 1	Increase in demand is less than proportionate to the increase in advertisement expenditure
Ea = 1	Demand increase in the same proportion in which advertisement expenditure increase
Ea > 1	Demand increase at a higher rate than increase in advertisement expenditure

CHAPTER - 10

Indian Economy

Status of Indian Economy: Pre Independence Period (1850-1947)

- Between 1st & 17th century AD → India was largest economy
- It was self-reliant → controlled between 1/3rd (33%) & 1/4th (25%) of world's wealth.
- Agriculture was dominant occupation, & main source of livelihood for majority of people.
- It also had a highly skilled set of artisans & craftsmen who produced handicrafts & textiles.

Ancient Economic Philosophy of India

- The earliest treatise/book on ancient Indian economic philosophy is 'Arthashastra' by Kautilya (Chanakya) (321-296 BCE).
- It was handbook for King Chandragupta Maurya, founder of Mauryan empire
- Arthashastra science of 'artha' or material prosperity, or "the means of subsistence of humanity," which is, primarily, 'wealth' and, secondarily, 'the land'.
- Meaning of True kingship → ruler's subordination of his own desires to the good of his people;
- 7 vital elements of policy → King, Ministers, Farmlands/agriculture land, Fortresses/ raja ki strong quila like lal quila, Treasury, Military and Allies/friends.

Period of British Rule is classified into 2 parts -

1. **East India Company Rule:** 1757 - 1858
2. **British Government Rule:** 1858 – 1947

- **Reason for British Expansion:** Industrial Revolution in Britain (late 18th century)
- **Trade Policies of britishers :**
- **Discriminatory Tariffs:**
  - **Indian Finished Goods:** High tariffs on exports and domestic sales → Costlier Indian goods
  - **Imports from Britain :** Low tariffs → Cheaper

Effects of this tariff policy on Indian Industries:

- **Decline in Demand:**
  - Decreased for indigenous products
  - Rise in competition from British machine-made goods
  - Shift in consumer preference towards foreign goods

Stagnated Nature of Industrialization: During the Colonial Era

Aspect	Details

Cotton Mill Industry (1930s)	9 million spindles (5th position)
Jute Mills	Largest globally by raw jute consumption
Iron Industry (1930)	8th in world output
Industrial Ranking (1930)	12th in manufactured products value
Producer Goods Industries	Limited expansion due to British Policies
Manufacturing Sector Share (1946)	7% Net Domestic Product

Indian Economy: Post-independence (1947-1991)

Literacy Rate (1947)	18%
Life Expectancy (1951)	32 years
Nehruvian Model Focus	Social and economic redistribution, state-led industrialization
Planning Commission (1950)	Established for economic development through 5-Year Plans
First 5-Year Plan (1951)	Launched to support economic development
Development Strategy	Rapid industrialization and planned modernization

Industrial Policy Resolution

Industrial Policy Resolution (1948)	Expanded public sector, state monopoly in strategic areas
Strategic Areas for State Monopoly	Atomic energy, arms & ammunition, railways
Basic Industries Investment Rights	Exclusively given to the state
1950s - two Economic Philosophies	Nehru's heavy industry focus vs. Gandhian small scale industries
Industrial Policy Resolution (1956)	Framework for development; biased towards public sector
Trade Policy (1950s)	Open until 1958; followed by tighter controls
Balance of Payments Crisis (1958)	Led to tighter trade and investment controls
Growth Rate (1950-1980)	Average annual GDP growth: 3.5% **(Hindu growth rate)**

Key Events and Policies

Pre-Green Revolution Strategy	Land reforms, farm cooperatives; neglected R&D
Agricultural Crisis (1966-1967)	Severe droughts, food aid dependence
Green Revolution	High-yield seeds, intensive inputs like fertilizers, pesticides etc.
Bank Nationalization	14 banks (1969), 6 banks (1980)
Economic Performance (1965-1981)	Decline in productivity, license raj, external shocks
MRTP Act, 1969	Regulated large firms, restricted expansion

Reservation for Small Scale Sector

- In 1967, many products were reserved for exclusive manufacture by the small scale sector
- It was thought that this policy will encourage labour-intensive economic growth & allow redistribution of income.
- However, this policy excluded all big firms from labour intensive industries and India was not able to compete in the world market for these products. Stringent labour laws also discouraged labour intensive industries.

The Era of Reforms

Early Liberalization (1981-1989)	Shift from inward-oriented practices
GDP Growth Rates	5.7% (1980-1985), 5.8% (1985-1990)
Industrial Policy Initiatives	Delicensing, broad-banding, MRTP limit increase
MODVAT Tax	Reduced taxation on inputs
SEBI	Established April 12, 1988
OGL Expansion	1,329 capital goods items by April 1990
Export Incentives	Introduced and expanded
Exchange Rate Policy	Rupee depreciated ~30% (1985-1990)
Price Controls	Abolished on cement and aluminum
1986 Budget Policies	Tax cuts, import liberalization, reduced tariffs

The Economic Reforms of 1991

Causes for Reforms	Fiscal deficit, balance of payments crisis, low forex reserves, import restrictions, external borrowing, political instability
Reform Objectives	Reorient economy to market-friendly; stabilize macroeconomic
Policy Types	Stabilization (short-term); Structural reforms (long-term)
Key Areas of Reform	Liberalization, Privatization, Globalization

Fiscal Reforms

- Bringing in fiscal discipline by reducing the fiscal deficit was vital because-
  - ✓ excess domestic demand,
  - ✓ surge in imports and
  - ✓ widening of the current account deficit (CAD)

  This was attempted by measures to increase govt. revenues & curtail govt. exp.
- Measures to this effect included:
  - (1) Introduction of a stable and transparent tax structure,
  - (2) Ensuring better tax compliance,
  - (3) Thrust on curbing government expenditure
  - (4) Reduction in subsidies and abolition of unnecessary subsidies
  - (5) Disinvestment of part of govt's equity holdings in select PSUs &
  - (6) Encouraging private sector participation.

Monetary & Financial Sector Reforms

- The focus was mostly on-
  - ✓ reducing the burden of NPAs on government banks,
  - ✓ introducing and sustaining competition, and
  - ✓ deregulating interest rates.
- These included many measures, important among them are:
  - (1) Interest rate liberalization & reduction in controls on banks by RBI in respect of interest rates.
  - (2) Opening of new private sector banks & facilitating competition among public, private sector and foreign banks and removal of administrative constraints.
  - (3) Reduction in reserve requirements namely, SLR & CRR, in line with recommendations of the Narasimham Committee Report, 1991.
  - (4) Liberalisation of bank branch licensing policy and granting of freedom to banks in respect of opening, relocating or closure of branches
  - (5) Prudential norms of accounting in respect of classification of assets, disclosure of income and provisions for bad debt, to ensure books of banks reflect truthful financial position.

Reforms in Capital Markets

- SEBI which was set up in 1988 was given statutory recognition in 1992.
- It is an independent regulator of the capital market → creates a transparent environment which would facilitate mobilization of adequate resources and their efficient allocation.

The New Industrial Policy (Announced July 24, 1991)

Objective:

- **Purpose:** Substantially deregulate industry to foster a more efficient & competitive industrial economy.

Key Reforms Introduced:

1. Ending the 'License Raj':

- **Licensing Restrictions: Removed for most industries except 5:**
  - Arms and ammunition
  - Atomic substances
  - Narcotic drugs
  - Hazardous chemicals
  - Distillation and brewing of alcoholic drinks, cigarettes, and cigars

2. Limiting Public Sector:

- **Initial Scope:** Public sector limited to eight sectors based on security and strategic importance
- **Current Scope:** Reduced to two sectors - railway transport and atomic energy

3. Restructuring of the MRTP Act:

- **Changes:** Repealed provisions related to mergers, amalgamations, and takeovers
- **Impact:** Removed pre-entry scrutiny and prior approval requirements for large companies

4. Dereservation of Products:

- **Effect:** Opened products previously reserved for small-scale industries to large-scale industries

5. Ending Public Sector Monopoly:

- **Current Reserved Sectors:** Only atomic energy generation and railway transport

6. Liberalization of Foreign Investment:

- **Automatic Approval:** Introduced for most FDIs
- **Prohibitions:**
- **FDI prohibited in four sectors:**
  - Retail trade
  - Atomic energy
  - Lottery business
  - Betting and gambling

7. Liberalization of External Trade:

- **Approach Change:** Shifted from positive list (license-free items) to negative list approach

8. Reduction in Tariffs:

- **Tariff Rates:** Reduced from 355% in 1990-91 to:
  - 85% in 1993-94
  - 50% in 1995-96
  - 10% by 2007-08
- **Exceptions:** Some goods retained higher tariffs

9. Rupee Devaluation:

- **Rate:** Devalued by 18% against the dollar

10. Disinvestment and Autonomy for PSUs:

- **Disinvestment:** Reduced government equity in PSUs
- **Autonomy:** Increased decision-making power and professional management for PSUs
- **Budgetary Support:** Gradual reduction

■ NITI AAYOG: A bold step for transforming India

Establishment Date	January 1, 2015
Objective	Foster innovation; promote cooperative federalism
Role	Think Tank; Policy Guidance
Key Initiatives	LIFE, NDAP, Shoonya, E-Amrit, IPI, Methanol Economy, Transforming Gold Market
Shortcomings	Limited role, exclusion from budgeting, lack of autonomy, strengthened Ministry of Finance, limited counterweight function

- **The key initiatives of NITI Aayog are:**

(1) 'LIFE' which envisions replacing the prevalent 'use-and-dispose' economy

(2) National Data and Analytics Platform (NDAP) facilitates and improves access to Indian government data

(3) Shoonya campaign aims to improve air quality in India by accelerating the deployment of electric vehicles

(4) E-Amrit is a one-stop destination for all information on electric vehicles

(5) India Policy Insights (IPI)

(6) 'Methanol Economy' programme for reducing India's oil import bill, greenhouse gas emissions, & converting coal reserves and municipal solid waste into methanol, and

(7) 'Transforming India's Gold Market' recommend measures for tapping into the potential of the sector and provide a stimulus to exports and economic growth.

■ The Current State of the Indian Economy: A brief overview

(I) The Primary Sector

- **Importance:**
  - Largest source of livelihood.
  - Directly supports 47% of the population.
  - Contributes 18.80% to GDP.
- **Achievements:**
  - **Top Producer:** World's largest producer of milk, pulses, jute, and spices.
  - **Major Areas:** Largest area planted under wheat, rice, and cotton.
  - **Second Largest Producer:** Fruits, vegetables, tea, farmed fish, cotton, sugarcane, and more.
  - **Food Market:** 6th largest food and grocery market globally.
  - **Cattle Herd:** World's largest buffalo herd.
  - **Food Grains Production:** 315.7 million tonnes in 2021-22.
  - **Private Investment:** Increased to 9.3% in 2020-21.
  - **Sector Growth:** 3.50% growth in 2022-23.
  - **Exports:** All-time peak of ₹3,74,611 crore; 25% increase in the first half of 2022-23.
- **Government Measures:**

1. **100% FDI in Food Marketing:** Allowed under the automatic route.
2. **PM KISAN:** Income support for farmers.
3. **Minimum Support Price (MSP):** Fixed at 1.50 times the cost of production.
4. **Institutional Credit:** Concessional rates for agriculture.
5. **Launch of National Mission for Edible Oils**
6. **PMFBY:** Insurance scheme for crop loss/damage.
7. **MIDH:** Integrated Development of Horticulture.
8. **Soil Health Cards:** Provision for farmers.
9. **PKVY:** Promotes organic farming.
10. **Agri Infrastructure Fund:** Debt financing for post-harvest & community farming projects.
11. **Farmer Producer Organizations (FPOs):** Promotes better income through organization.
12. **Per Drop More Crop (PDMC):** Increases water use efficiency.
13. **Micro Irrigation Fund:** Established.
14. **Agricultural Mechanization:** Various initiatives.
15. **E-NAM:** Electronic trading portal for unified national market for agricultural commodities.
16. **Kisan Rail:** Enhances logistics for farm produce.
17. **Start-up Ecosystem:** Creation in agriculture and allied sectors.

(II) The Secondary Sector

- **Contribution:**
  - **Gross Value Added: 30% of total GVA.**
  - **Employment:** Over 12.1 crores.
- **Components:**
  - Includes manufacturing, heavy industries, fertilizers, pharmaceuticals, chemicals, petrochemicals, oil & gas, food processing, mining, defense products, textiles, retail, MSMEs, cottage industries, and tourism.
  - **Informal Sector:** More than 50% of GVA.
- **Manufacturing:**
  - **Share:** 78% of total production.
  - **PMI (Jan 31, 2023):** 55.4.
  - **Global Innovation Index:** Improved to 40th in 2022 from 81st in 2015.
- **Role of The Department for Promotion of Industry and Internal Trade (DPIIT) :**
  - Formulates and implements industrial policy and strategies.
  - This sector remained resilient/flexible during the pandemic (Covid-19) due to increased demand for digital support and the necessity for digital infrastructure modernization.

Current Economic Policies and Strategies

- **Goods and Services Tax (GST) Implementation Date:** July 1, 2017.
- **Purpose of GST:** Replaced multiple indirect taxes with a single tax, simplifying the tax structure.
- Reduction of corporate tax to 22% for domestic companies.
- **Make in India, Launched:** 2014.'S Objective: Facilitate investment, innovation, and infrastructure development in India. Promotes a 'Vocal for Local' approach.
- **Ease of Doing Business Ranking:** India ranked 63rd in the World Bank's Doing Business Report (DBR), 2020.
- **National Single Window System's Purpose:** A one-stop-shop for investor-related approvals and continuous facilitation and support to investors.
- **PM Gati Shakti National Master Plan's Objective:** Integrated planning of multi-modal infrastructure to reduce logistics costs through data-based decision-making.
- **National Logistics Policy (NLP)'s Goal:** Lower logistics costs in India.
- **Production Linked Incentive (PLI) Scheme's Purpose:** Enhance manufacturing capabilities and export competitiveness in 14 key sectors to promote 'Atmanirbhar' (self-reliant) India.
- **Industrial Corridor Development Programme's Focus:** Develop greenfield industrial regions with sustainable infrastructure and 'plug and play' facilities.

- **FAME-India Scheme's Objective:** Promote the manufacturing of electric and hybrid vehicle technology.
- **Udyami Bharat's Purpose:** Empower Micro, Small, and Medium Enterprises (MSMEs).
- **PM Mega Integrated Textile Region and Apparel (PM MITRA)'s Goal:** Ensure world-class infrastructure in the textiles sector and boost FDI and local investment.
- **FDI Regulations Details:** 100% FDI under automatic route allowed for coal mining, coal sale, and insurance intermediaries.
- **Foreign Investment Facilitation Portal (FIFP) Replaced FIPB:** Simplified FDI approval process, leading to a 39% increase in FDI.
- **Remission of Duties and Taxes on Export Products (RODTEP)'s Purpose:** Replace MEIS to boost exports by providing rebates on all hidden central, state, and local duties/taxes/levies.
- **Start-up India Programme's Objective:** Facilitate ideas and innovation; India's rank in GII is 40th in 2022.
- **Emergency Credit Line Guarantee Scheme (ECLGS)'s Objective:** Provide fully guaranteed emergency credit lines to monitor lending institutions.
- **Preparing for Industry 4.0**
- **Focus Areas:** Cloud computing, Internet of Things (IoT), machine learning, and artificial intelligence (AI).
- **National Manufacturing Policy:** Aims to increase manufacturing's share in GDP to 25% by 2025.

(III) The Tertiary Sector

- **Growth Trajectory:**
  - India has seen a unique shift directly from agriculture to services, bypassing the traditional industrial growth phase.
  - **Contribution to Economy:** The service sector is the largest sector in India, contributing 53.89% to the country's Gross Value Added (GVA). The GVA of the service sector was estimated at ₹96.54 lakh crore for 2020-21.
- **Key Characteristics**
  - The service sector is the fastest-growing sector in India.
  - It has the highest labour productivity compared to other sectors.
  - A significant number of successful start-ups in India are in the services sector, reflecting its dynamism and potential.
  - India is among the top 10 members of the World Trade Organization (WTO) in terms of service exports and imports.
  - In November 2022, India's services exports totaled USD 27.0 billion, driven by software, business, and travel services.

- The services sector is the largest recipient of FDI in India, accounting for over 60% of total FDI equity inflows.
- In 2021-22, India attracted the highest-ever FDI inflows of USD 84.8 billion, including USD 7.1 billion into the services sector.
- **Telecommunications:** 100% foreign participation allowed through the Automatic Route.
- **Insurance Sector:** The FDI ceiling was increased from 49% to 74%, enhancing foreign investment opportunities.
- Government Measures to Support the Sector
- National Single Window System Provides a one-stop-shop for investor-related approvals and facilitates continuous support.

FDI Policies -

1. Permits 100% foreign participation in telecommunications.
2. Increases FDI limit in insurance to 74%.

CHAPTER – 3 : Theory of Production and Cost

Unit - 1 Theory of Production

Meaning of Production

- Generally, production refers to the process of converting inputs into output.
- Production is the process by which man utilizes resources like men, material, capital, time etc. and transform them into commodities & services to satisfy human wants.
- According to James Bates and J.R. Parkinson "Production is the organized activity of transforming resources into finished products in the form of goods and services; and the objective of production is to satisfy the demand of such transformed resources".

Production does not include:

Work done within household by anyone out of love and affection

Example : Food Cooked by Mom is not production

Production confer following types of utilities

(1) Place utility → Apple from Kashmir, Tin in malaya

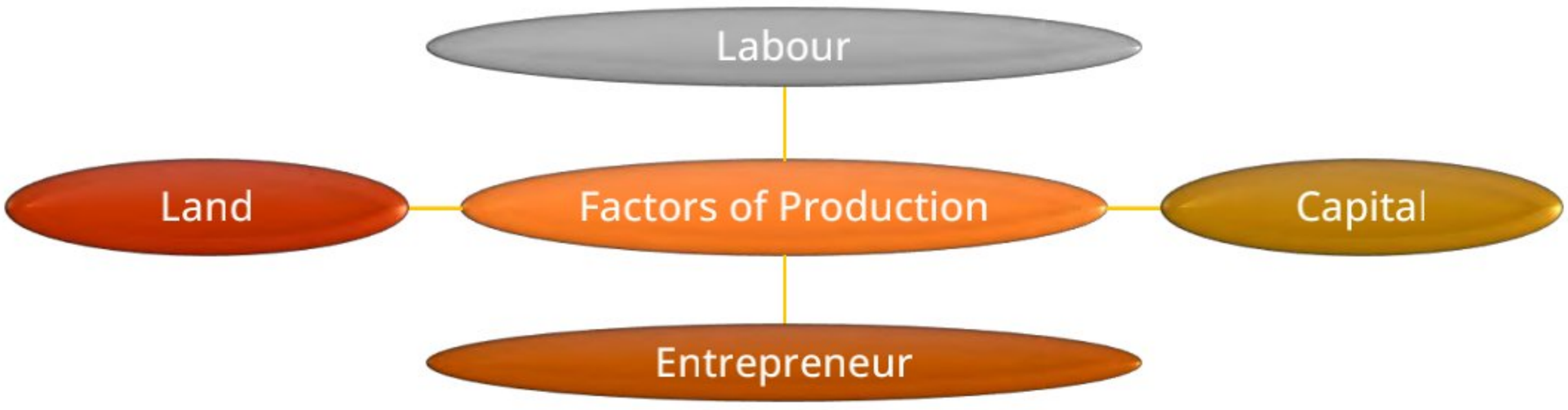
(2) Time utility → canning of fruits, Safal Matar

(3) Form utility → (Input → Output)

(4) Personal utility → Services of CA, manager etc.

Production should not be taken to mean as creation of matter. Production is about creating or adding utility to things that already exist in nature.

Factors of Production



- Land includes
  - (1) Natural resources
  - (2) Soil
  - (3) Water
  - (4) Air and Light

- Characteristics of Land
  - (i) Land is a free gift of nature
  - (ii) Supply of land is fixed
  - (iii) Land is permanent and has indestructible power
  - (iv) Land is a passive factor
  - (v) Land is immobile
  - (vi) Land has multiple uses
  - (vii) Land is heterogeneous

NOTE - Supply of Land is perfectly inelastic form overall economy's point of view Land is relatively elastic from the point of view of a firm or individual.

- Characteristics of labour
  - (1) Human Effort:
  - (2) Labour is perishable:
  - (3) Labour is an active factor:
  - (4) Labour is inseparable from the labour:
  - (5) Labour power differs from labourer to labourer:
  - (6) All labour may not be productive:
  - (7) Labour has poor bargaining power:
  - (8) Labour is mobile:
  - (9) Choice between hours of labour and hours of leisure:
  - (10) There is no rapid adjustment of supply of labour to the demand for it

Note : Labour supply curve is backward bending

- Capital
  - Capital is a part of the wealth o that is used for the purpose of producing more wealth.
  - Capital is a stock concept, representing accumulated resources, while income generated from capital is a flow concept.

Types of Capital

(a) Fixed capital is durable nature capital. For example tools, machines, etc.

(b) Circulating capital is a single use capital and is not available for further use. For example, seeds, fuel, raw materials, etc.

(c) Real (tangible) capital refers to physical goods such as building, plant, machines, etc.

(d) Human capital refers to human skill and ability.

(e) Tangible capital can be perceived by senses whereas intangible capital is in the form of certain rights and benefits which cannot be perceived by senses. For example, copyrights, goodwill, patent rights, etc.

(f) Individual capital is personal property.

(g) Social Capital is what belongs to the society as a whole in the form of roads, bridges, etc.

Capital Formation

- Capital formation refers to the process of increasing the stock of real capital in a country.
- It involves the production of capital goods such as machines, tools, factories, transportation equipment, and electricity, which are used for further production of goods.
- Capital formation is also known as investment.

Stages of capital formation

There are mainly three stages of capital formation which are as follows:

(a) Savings

(b) Mobilization of Savings

(c) Investment

Entrepreneur

- The entrepreneur is the fourth factor of production, distinct from land, capital, and labor.
- The entrepreneur mobilizes the other factors, combines them in the right proportions, and initiates the production process.
- The entrepreneur is responsible for bearing the risks associated with the production process.

Function of Entrepreneur

(1) Initiating business enterprise and resource co-ordination

(2) Risk bearing or uncertainty bearing

(3) Innovations – Most Important Function & don't forget the name of prof. joseph Schumpeter in this context

- Enterprise's Objectives
  - (1) Organic objectives
  - (2) Economic objectives
  - (3) Social objectives
  - (4) Human objectives
  - (5) National objectives

- Objective of an Enterprise
  - (1) Organic objectives: The basic purpose of all kinds of enterprises is to Survive and Exist i.e. to stay alive. This is possible only when it is able to recover its costs and earn profits. Once the enterprise is assured of its survival, it will aim at growth and expansion.

- Economic objectives – Profit
  - H. A. Simon argues that firms have 'satisfying' behavior and strive for profits that are satisfactory
  - Baumol's theory of sales maximization holds that sales revenue maximization rather than profit maximization is that ultimate goal of the business firms.
  - Cyret & March suggested 4 possible functional goals in addition to profit i.e. production goal, inventory goal, sales goal & market share goal.
  - A. A. Berle and G. C. means pointed out that in large business corporations, management is separated from ownership and therefore the managers enjoy discretionary powers to set goals of the firm they manage.
  - Williamson's model of maximization of managerial utility function is an important contribution to managerial theory of firm's behavior.

- Social objective – related to society
  - Continuous and sufficient supply of unadulterated goods & articles of standard quality
  - Avoid profiteering and anti-social practices
  - Create employment for people in the society
  - Does not cause pollution

- Human objective – related to human and employee
  - Fair deal to employee
  - Develop new skills and ability
  - Provide the employees an opportunity to participate in decision making
  - Make job content interesting and challenging

- National Objectives – Towards nation
  - Remove inequalities of opportunities & to provide fair opportunities to all
  - Produce according to national priorities
  - Country become self-reliant and avoid dependence on other nations
  - Train young man as apprentices & thus contribute in skill formation for economic growth.

- Constraints of an enterprise in achievement of its Objectives

  In the pursuit of the above objectives an enterprise's action may get constrained in following ways-

  (i) Lack of knowledge and information about many variable the affect business.

  (ii) Constraints may be experienced due to governments' restrictions on the production, price and movement of factors.

  (iii) There may be infrastructural bottleneck.

  (iv) Changes in business and economic conditions; change in government policies about location, prices, taxes, etc.; natural calamities like fire, flood, famine, etc.

  (v) Constraints are also faced due to inflation, rising interest rates, unfavourable exchange rate, capital and labour costs, etc.

- Enterprise's Problems

  (1) Problems relating to objectives:

  (2) Problems relating to location and size of the plant

  (3) Problems relating to selecting and organising physical facilities:

  (4) Problems relating to Finance:

  (5) Problems relating to organisation structure:

  (6) Problems relating to marketing:

  (7) Problems relating to legal formalities:

  (8) Problems relating to industrial relations:

- Production Function
  - The production function is a statement of the relationship between a firm's scarce resources (i.e. its inputs) and the output that results from the use of these resources.
  - It states technological relationship between inputs and output.

Assumptions of Production Function

There are three main assumptions:

(a) the relationship between inputs and outputs exists for a specific period of time.

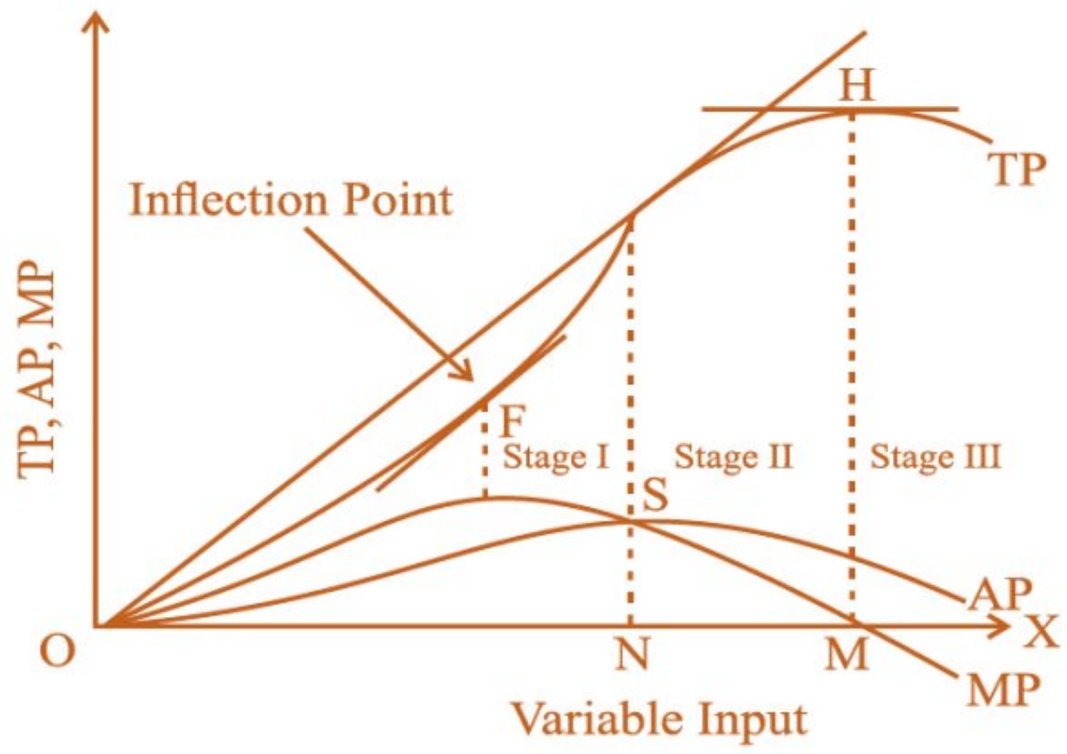
(b) there are no significant changes in the state of technology during the given period of time.

(c) The output achieved by utilizing any combination of inputs in a specific function is maximized.

Short Run Production Function

- A period will be considered short-run period if at least one of the inputs used remains unchanged during that period.
- Short-run production function shows the maximum amount of a good or service that can be produced by a set of inputs, assuming that the amount of at least one of the inputs used remains fixed (or unchanged).
- In the short-run, the production function is studied by holding the quantities of capital fixed, while varying the amount of other factors (labour, raw material etc.) This is done when the law of variable proportion is studied.

Total Product (TP)	❑ The total output produced by all the factors per unit of time is called total product. ❑ Total product increases with an increase in the variable factor input.
Average Product (AP)	❑ The average product means the total product per unit of a variable factor. ❑ In order words, it is the total product divided by the number of units of a variable factor. $\text{Average Product} = \frac{\text{Total Product}}{\text{No of units of variable factor}}$ OR $AP = \frac{TP}{L}$
Marginal Product (MP)	❑ The marginal product means addition made to total product by the use of an extra unit of variable factor. ❑ It may be stated as $MP_n = TP_n - TP_{n-1}$ ❑ Marginal Product may also be defined as the change in total output due to use of additional unit of variable factor $MP = \frac{\Delta TP}{\Delta L}$



Three Stages of Production under Short run production Function

STAGE	TP	MP	AP
Stage I	Increases at an increasing rate	Increases and reaches at maximum point.	Increases and reaches its maximum point.
Stage II	Increases at diminishing rate and reaches its maximum point	Decreases and becomes zero	After reaching its maximum point beings to decreases
Stage III	Begins to fall.	Becomes Negative	Continues to diminish

NOTE –

1. the rational choice for a producer is to operate in Phase II, where the total product (TP) is at its maximum and the marginal product of each variable factor remains positive. Operating in Phase II allows the producer to maximize output and maintain a favorable production level for optimal profitability.
2. Phase 1 and 3 are the stages og absurdity/non-sense

Relationship Between AP & MP

The relationship between average product and marginal product can be summed up as follows:

1. When average product rises as a result of an increase in the quantity of variable input, marginal product is more than the average product.
2. When average product is maximum, marginal product is equal to average product. In other words, the marginal product curve cuts the average product curve at its maximum.
3. When average product falls, marginal product is less than the average product.

Long Run Production Function

- The long run is a period of time (or planning horizon) in which all factors of production are variable.
- It is a time period when the firm will be able to install new machines and capital equipment's apart from increasing the variable factors of production.
- A long-run production function shows the maximum quantity of a good or service that can be produced by a set of inputs, assuming that the firm is free to vary the amount of all the inputs being used.

The behaviour of production when all factors are varied is the subject matter of the law of returns to scale.

Returns to Scale

- The Law of Returns to Scale examines the production function i.e., the input – output relation in long run where increase in output can be achieved by varying the units of ALL FACTORS IN THE SAME PROPORTION.
- Thus, in long run all factors becomes variable.
- It means that in long run the scale of production and the size of the firm can be increased.
- The law of returns to scale analyse the effects of scale on the level of output as

1. Increasing Returns to Scale	❑ When the output increases by a greater proportion than the proportion increases in all the factor inputs, it is increasing returns to scale. ❑ E.g., When all inputs are increased by 10% and output rises by 30%. ❑ The reasons of increasing returns to scale are – internal and external economies of scale; indivisibility of fixed factors; improved organisation; division of labour and specialisation; better supervision ❑ and control; adequate supply of productive factors, etc.
2. Constant Returns to Scale	❑ When the output increases exactly in the same proportion as that of increases in all factor inputs, it is constant returns to scale. ❑ E.g., - When all inputs are increased by 10% and output also rises by 10%.
3. Diminishing Returns to Scale	❑ When the output increases by a lesser proportion that the proportion increase in all the factor inputs, it is diminishing returns to scale. ❑ E.g. When all inputs are increased by 20% but output rises by 10%. ❑ The reason of diminishing returns to scale is increased internal and external diseconomies of production.

Cobb-Douglas Production Function

- A famous statistical production function is Cobb-Douglas production function.
- Paul H. Douglas and C.W. Cobb of the U.S.A. studied the production function of the American manufacturing industries.
- In its original form, this production function applies not to an individual firm but to the whole of manufacturing in the United States.
- In this case, output is manufacturing production and inputs used are labour and capital
- Cobb-Douglas production function is stated as:

$$Q = KL^{a}C^{(1-a)}$$

where 'Q' is output, 'L' the quantity of labour and 'C' the quantity of capital. 'K' and 'a' are positive constants.

- The conclusion drawn from this famous statistical study is that labour contributed about 3/4th and capital about 1/4th of the increase in the manufacturing production.

Understanding Returns to Scale through Cobb-Douglas Production Function

The Cobb-Douglas production function, explained earlier is used to explain "returns to scale" in production. Originally, Cobb and Douglas assumed that returns to scale are constant. The function was constructed in such a way that the exponents summed to a + 1 – a = 1. However, latter they relaxed the requirement and rewrote the equation as follows:

$$Q = K\,L^{a}\,C^{b}$$

- If a + b > 1 Increasing returns to scale result i.e. increase in output is more than the proportionate increase in the use of factors (labour and capital).
- If a + b = 1 Constant returns to scale result i.e. the output increases in the same proportion in which factors are increased.
- If a + b < 1 decreasing returns to scale result i.e., the output increases less than the proportionate increase in the labour and capital.

Isoquants

Isoquants: Equal-production curves, production indifference curves or iso-product curves.

An isoquant represents all those combinations of inputs which can produce the same level of output.

Properties of Isoquants

(1) Negative/downward sloping,

(2) Convex to the origin due to diminishing MRTS

(3) Curve on right represents a higher level of output or higher IQ shows higher level of output

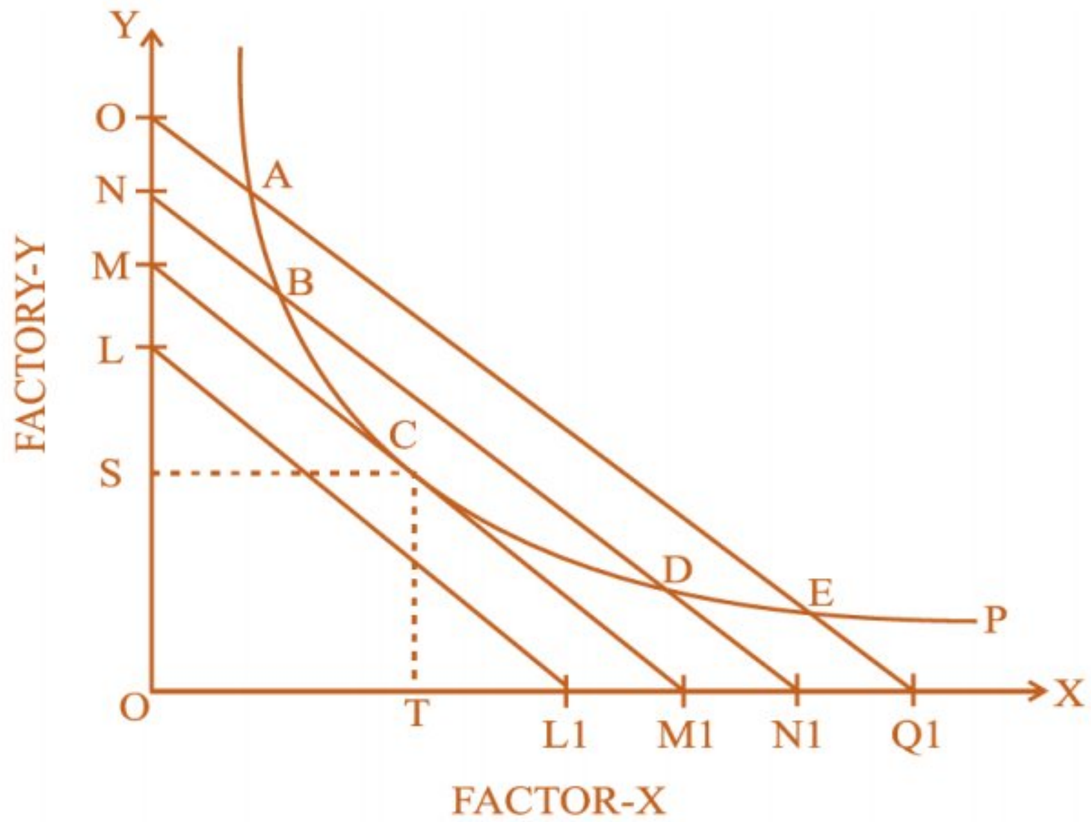
(4) Non intersecting – two IQS can never cut each other

- Isocost line
  - Isocost line – Equal-Cost Line or budget line or budget constraint line,
  - It shows various alternative combinations of two factors which the firm can buy with given outlay.
  - Whatever be the combination of factors the firm chooses on isocost line, the total cost to firm remains the same.

- Production optimisation

A producer can produce the desired output at least possible cost at equilibrium.

Producer equilibrium will be achieved where isocost line is TANGENT to isoquant (at point C in the diagram below) i.e. (Slope of Isoquant = MRTS)



CHAPTER – 3 : Theory of Production and Cost

Unit - 2 Theory of cost

- **Cost Analysis**

  Cost analysis is related with the financial aspects of production.

- **Cost Concepts**

  1. **Accounting Costs & Economic Costs**

     - Accounting costs (similar as Explicit cost or Outlay cost) are expenses which will have to be incurred by firm and are recorded in books of accounts.
     - Economic Cost = Explicit Cost + Implicit Cost
     - Implicit Cost is cost of using owner's self owned factors. E.g.- normal return on capital invested by owner himself in his business; etc.
     - Implicit cost includes normal profit

$$\begin{gathered}\text{Total Revenue} \\ = \frac{(-)\text{Explicit Cost (Accounting Cost)}}{\text{Accounting Profit}} \\ = \frac{(-)\text{Implicit Cost}}{\text{Economic Profit}}\end{gathered}$$

Total Revenue > Economic Cost

Supernormal Profit OR Positive Economic Profit

Total Revenue < Economic Cost

Economic Loss OR Negative Economic Profit

Total Revenue = Economic Cost

Zero Economics Profit OR Normal Profit

  2. **Outlay costs and Opportunity costs**

     - Outlay costs are actual expenditures.
     - Opportunity cost is the cost of next best alternative opportunity which was foregone. It is cost of the missed opportunity.
     - Implicit cost is a type of opportunity cost.

3. Traceable (Direct) costs and Non-Traceable (Indirect) costs

- Direct costs are costs that are readily identified and are traceable to a particular product, operation or plant.
- Indirect costs are those which are not easily and definitely identifiable in relation to a plant, product, process or department. E.g.- Electricity expenses, general expenses etc.

4. Incremental costs and Sunk costs

- Incremental cost refers to the additional cost incurred by a firm as result of a business decision. (Marginal Cost)
- Sunk Costs are costs which are already incurred once and for all and cannot be recovered. They are based on past commitments and cannot be revised or reversed if the firm wishes to do so. Like cost incurred in advertising, R&D expenses.

5. Historical costs and Replacement costs

- Historical cost refers to the cost incurred in the past on the acquisition of a productive asset such as machinery etc.
- Replacement cost is the money expenditure that has to be incurred for replacing an old asset.

6. Private costs and Social costs

- Private costs are costs actually incurred or provided for by firms and are either explicit or implicit.
- Social cost refers to the total cost borne by the society on account of a business activity and includes private cost and External Cost.
- social cost = private cost + external cost

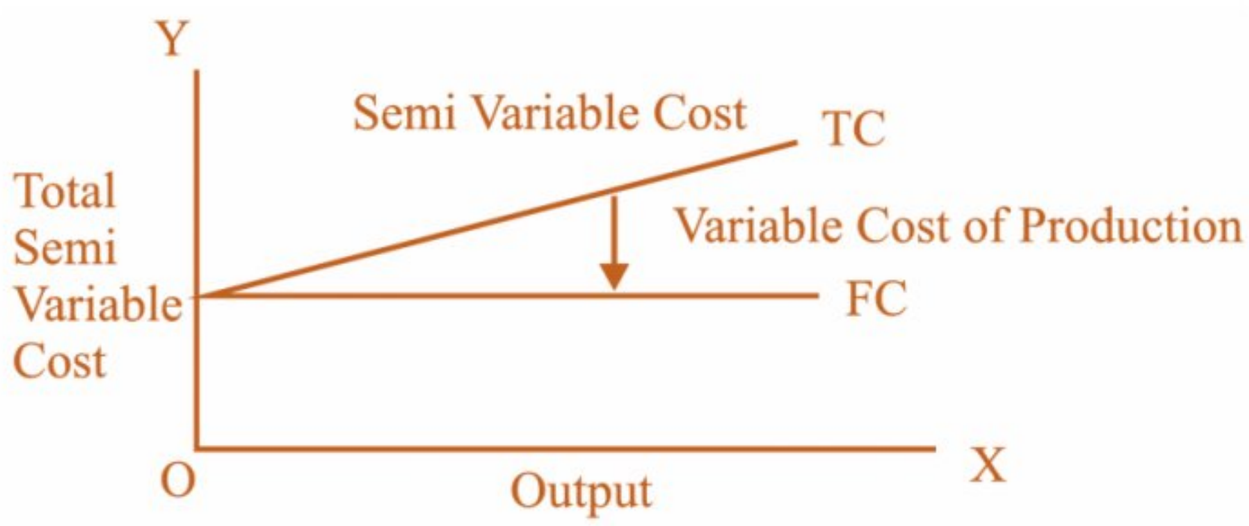
7. Fixed Costs and Variable costs

- Fixed or constant costs are costs which do not vary/change with output up to a certain level of activity.
- These require fixed expenditure of funds irrespective of level of output e.g., rent, interest on loans etc.
- Fixed cost is a function of capacity.
- If the firm closes down for some time in the short run but remains in business, fixed cost cannot be avoided.
- This cost is inescapable.

- Shut down costs are costs which will continue even after operations are suspended. E.g.- for storing of old machines which cannot be sold in market.
- Variable Costs are costs which change with the level of output (it is a function of output)
- If a firm shuts down for a short period, then variable cost can be avoided like wages of labour, prices of raw material, etc.

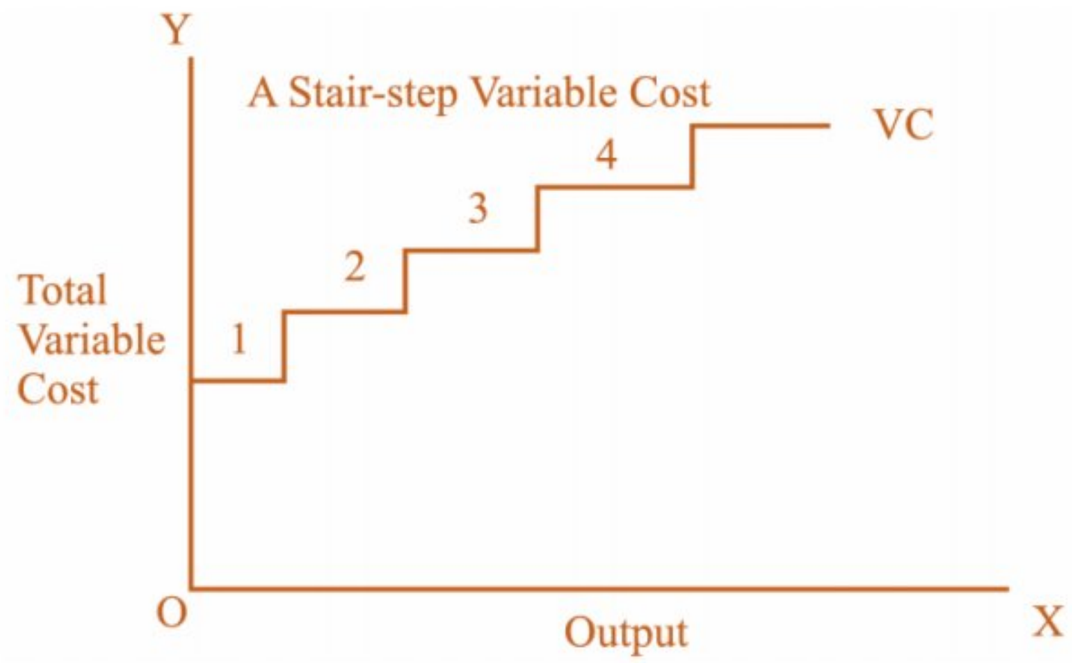
8. Semi - Variable Cost

- These are the costs which are neither perfectly variable, nor absolutely fixed in relation to the changes in the size of output.
- E.g.: Electricity exp, Phone Bill etc.



9. Stair-Step Variable Cost

- Some costs which may increase in a stair-step fashion, i.e., they remain fixed over certain range of output: but suddenly jump to new higher level when output goes beyond a given limit.



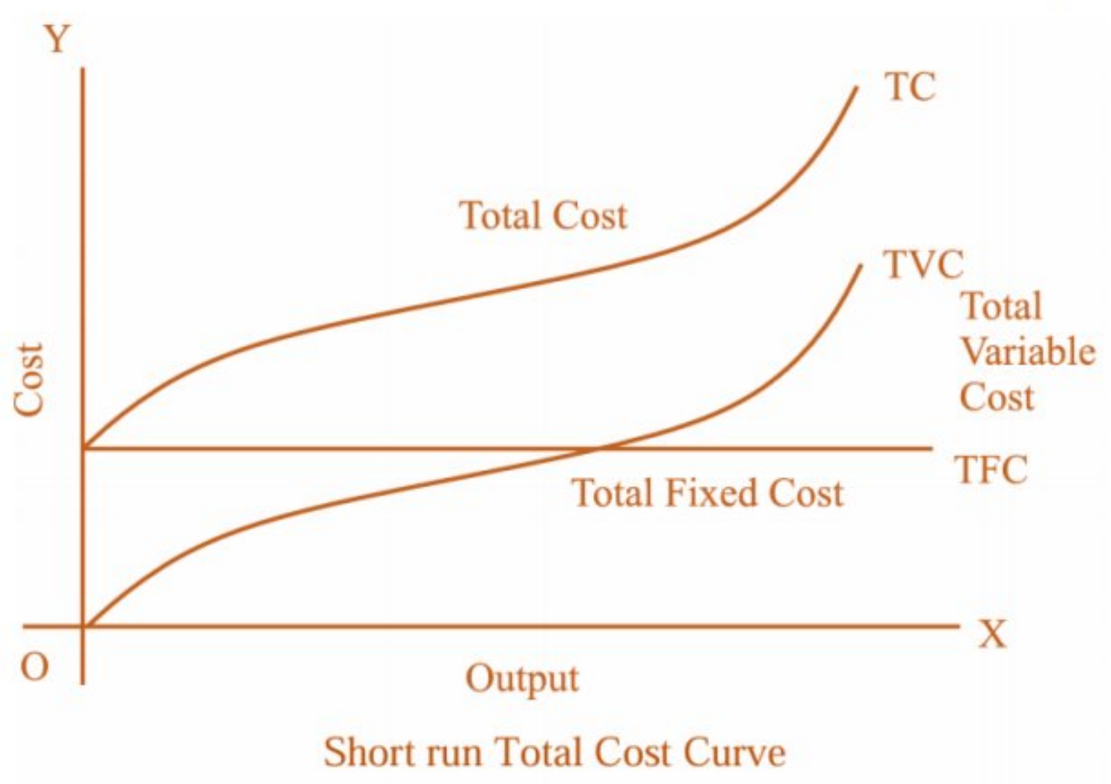
- Short Run Total Costs
  - TC = TFC + TVC
    - Total Fixed Cost curve (TFC)
      - Horizontal straight line parallel to X-axis
      - TFC curve Starts from a point on the Y-axis

➢ Total Variable Cost (TVC)

- Initially increases at a decreasing rate and then at an increasing rate.
- It is Inverted-S shaped curve.

➢ Total Cost Curve (TC)

- Total cost is vertical summission of the TFC curve and the TVC curve.
- Starting point of TC & TFC is same, because at 0 units of output TC = TFC
- Slopes of TC & TVC are same (Inverted-S shaped). Name of their slope is MC.
- At each point the TC & TVC curves have vertical distance equal to total fixed cost.



Short run Total Cost Curve

■ Average Fixed Cost curve (AFC)

➢ AFC = TFC/Q

➢ AFC is fixed cost per unit of Output

➢ AFC falls as output increases and vice-versa.

➢ AFC Curve will slope downwards but will not touch the X-axis as AFC cannot be zero.

➢ Shape of AFC curve is known as rectangular hyperbola.

■ Average Variable Cost (AVC)

➢ AVC = TVC/Q

➢ AVC Curve will first fall then reach a minimum and then rise (it is U-shaped)

■ Average Total Cost (ATC or AC)

➢ ATC = TC/Q or ATC = AFC + AVC

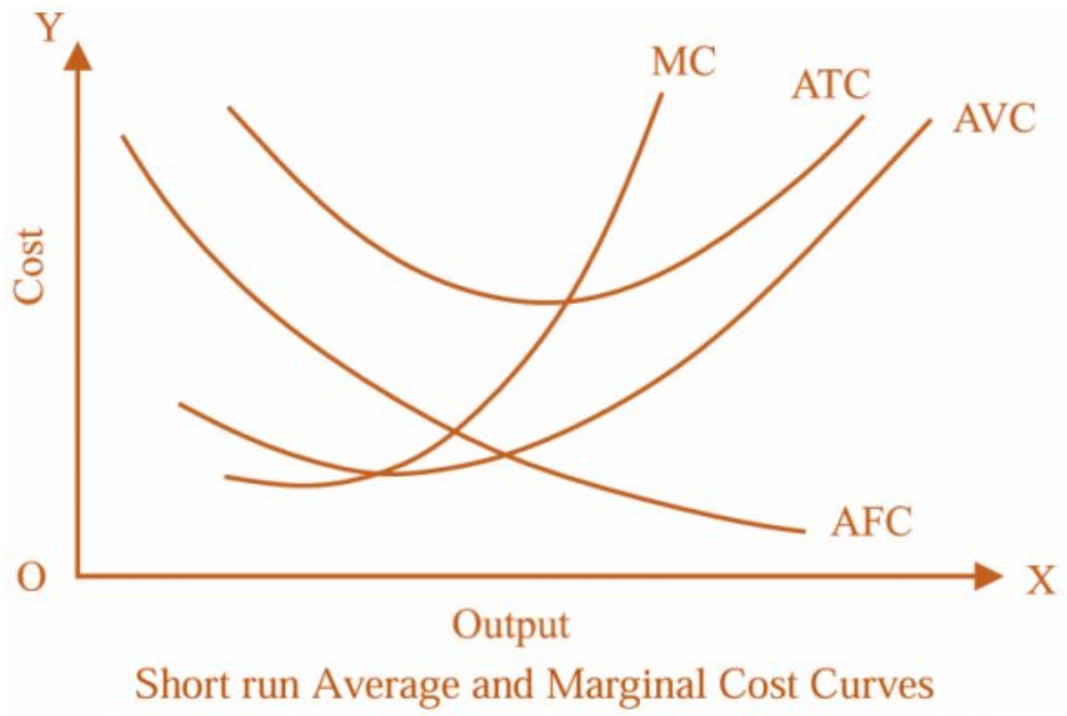
➢ ATC curve will first fall, then reach a minimum and then rise (it is U-shaped)

Marginal Cost Curve (MC)

- Marginal cost is addition made to total cost by production of an additional unit of output.

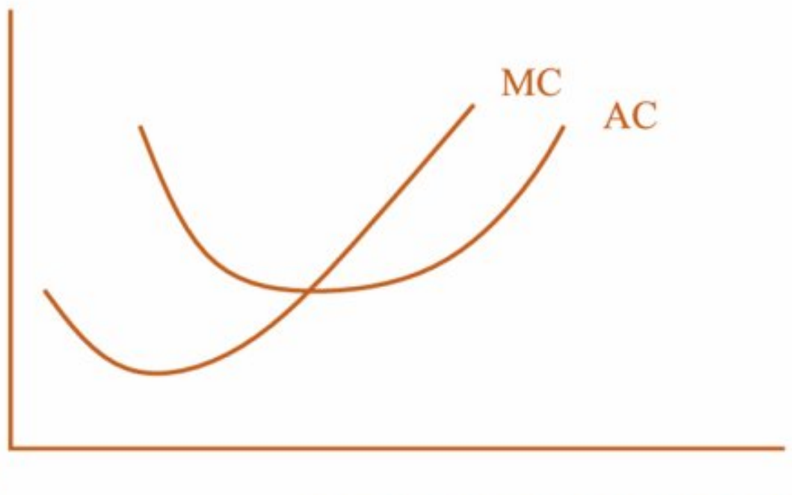
$$MC = \Delta TC/\Delta Q \quad Or \quad MC = \Delta TVC/\Delta Q$$

- MC is not related with fixed cost.
- MC is related with variable costs.
- MC curve becomes minimum corresponding to the point of inflection on the total cost curve.
- MC curve declines first, reaches its minimum and then rises ("U" shaped)
- MC Curve intersects AC curve and AVC curve at their minimum points.

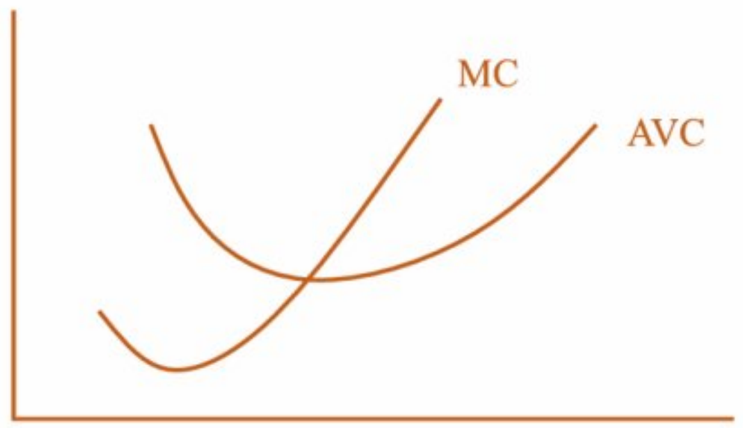


Short run Average and Marginal Cost Curves

MC and AC



MC and AVC



MC Curve cuts both AC and AVC at there minimum Point.

Relationship Between :

MC & AC	MC & AVC
AC Falls → MC < AC	AVC Falls → MC < AVC
AC rises → MC > AC	AVC rises → MC > AVC
AC Min. → MC = AC	AVC Min. → MC = AVC

Long Run Average Cost Curve

LAC – curve is U-shaped because of operation of law of returns to scale.

- Long run is a period during which firm can vary all its inputs (Labour & Capital both)
- In the long run the firm can build any size or scale of plant and therefore, can move from one plant to another. Long run is planning horizon.
- A firm plans for the long run and operates in short run.
- Long run cost of production is the least possible cost of producing any given level of output when all individual factors are variable.
- Long run cost curve depicts functional relationship between output and long run cost of prod.
- Long run cost of production is the least possible cost of producing any given level of output when all individual factors are variable.

When LAC is falling (LAC has negative Slope)

(1) LAC is tangent to the falling portion of SAC → Under – Utilisation

↓

Excess Capacity

(2) LAC curve falls (-ve Slope) as initially in long Run we experience IRS (Economies of Scale)

When LAC is rising (LAC has positive Slope)

(1) LAC is tangent to rising Portion of SAC. – Over – utilisation

↓

Beyond Capacity

(2) LAC curve rises (+ve Slope) as initially in long Run we experience DRS (Dis-Economies of Scale)

Economies of Scale

Economies of scale are cost advantages that firms obtain due to their scale of operation, with cost per unit of output decreasing which causes scale increasing.

Types of Economies

Internal Economies	External Economies
Internal economies accrue to firm when it expands its output, so that cost of production would come down. Internal economies arise purely due to endogenous (internal) factors.	External economies are benefits accruing to each member firm of the industry as a result of expansion of the industry. They are not dependent on the output level of individual firms.

- External Economies & Diseconomies
  - (1) Cheaper raw materials & equipment
  - (2) Technological external economies
  - (3) Development of skilled labour
  - (4) Growth of ancillary industries
  - (5) Better transportation & marketing
  - (6) Economies of Information

- Internal Economies & Diseconomies
  - (1) Technical
  - (2) Managerial
  - (3) Commercial
  - (4) Financial
  - (5) Risk bearing

- Formulae summary

	Cost	
$TC = TFC + TVC$ $= AC \times Q$ $TVC = TC - TFC$ $= AVC \times Q$ $= \Sigma MC$ $TFC = TC - TVC$ $= AFC \times Q$	$AC = AFC + AVC$ $= \frac{TC}{Q}$ $AVC = AC - AFC$ $= \frac{TVC}{Q}$ $AFC = AC - AVC$ $= \frac{TFC}{Q}$	$MC = TC_n - TC_{n-1}$ $= \frac{\Delta TC}{\Delta Q}$ $= TVC_n - TVC_{n-1}$ $= \frac{\Delta TVC}{\Delta Q}$

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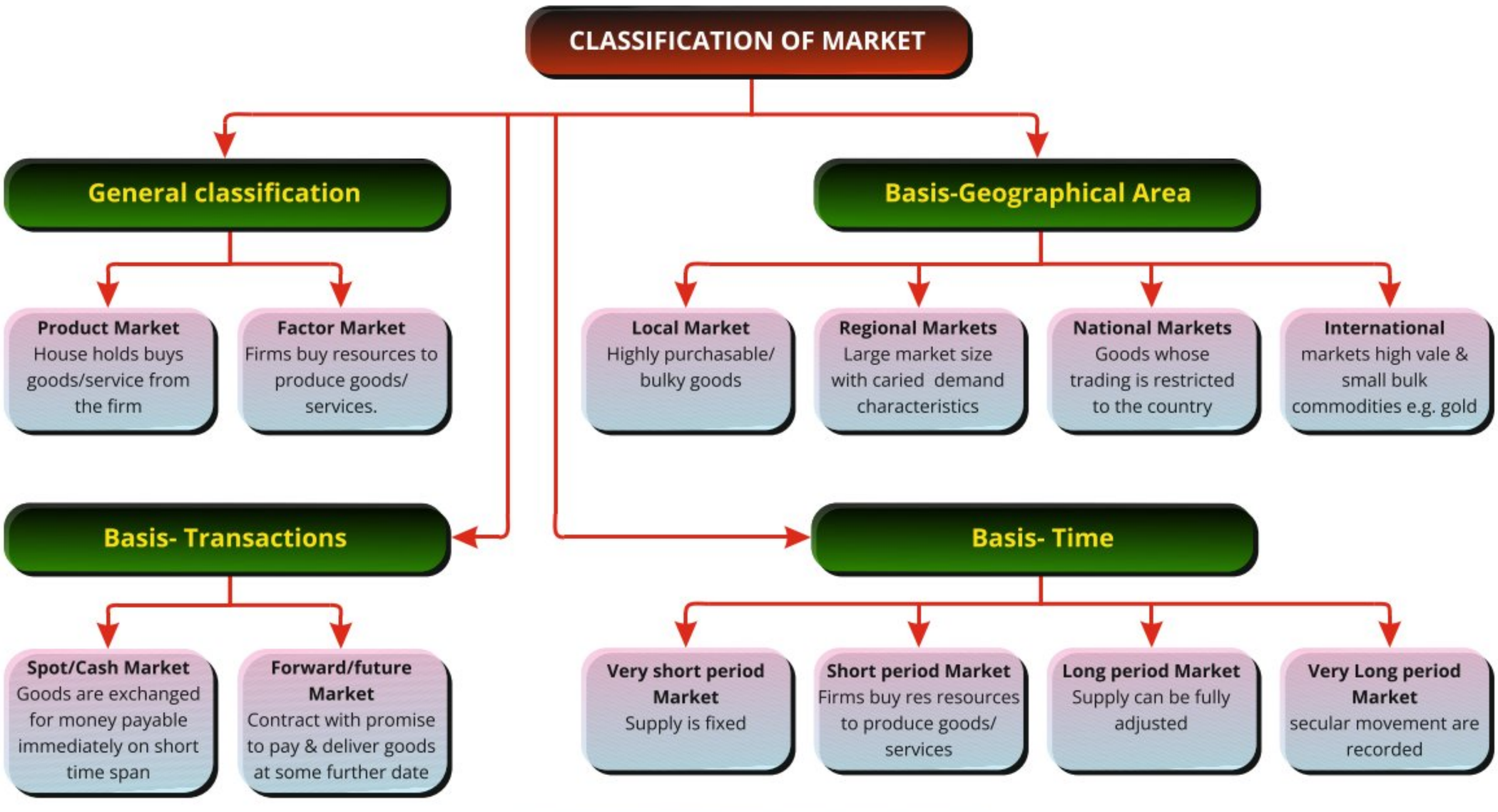
CHAPTER – 4 : Price Determination in Different Markets

Unit -1 Meaning and Types of Market

- "Markets are Collection and Buyers and Sellers with Potential to trade."
  -
  - Exchange Value (price)- Command over commodities,
  - Value in use- Utility
  - Value in Exchange- Amount of goods/services which we may obtain in exchange of a thing.



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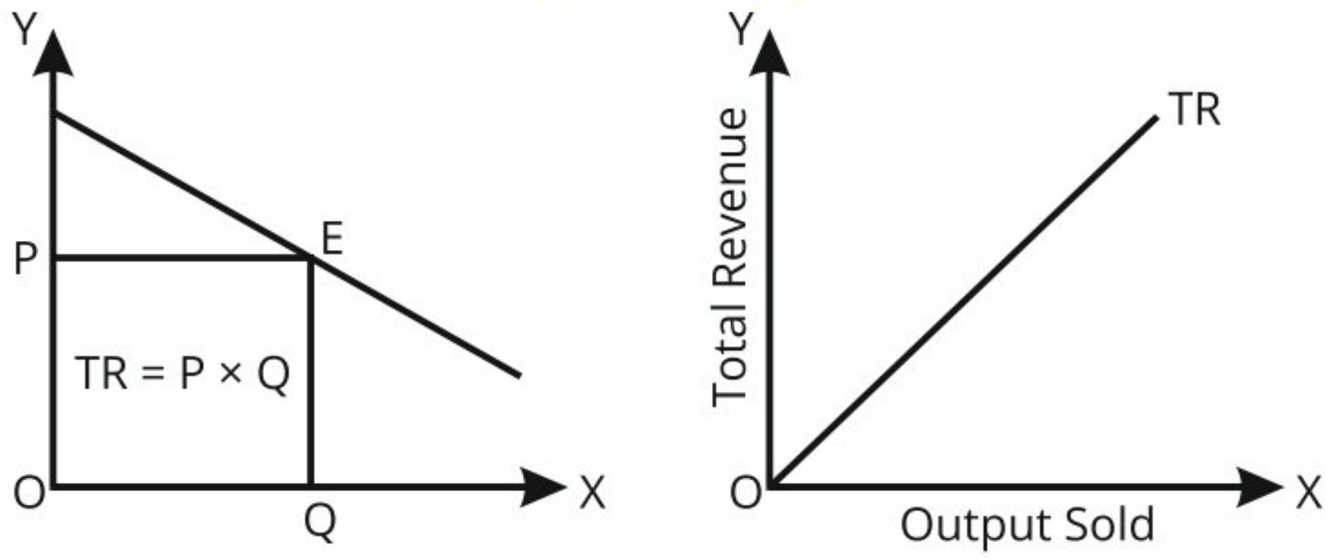
Market Types					
	Basis of difference	Perfect Competition	Monopolistic Competition	Oligopoly	Monopoly
1	No. of Sellers	Very large	Large	Small No.	One
2	Product Differentiation	None	Slight	None to Substantial	Extreme
3	Price Elasticity of Demand of a Firm	Infinite	Large	Small	Small
4	Degree of Control over price	None	Some	Some	Very Considerable

Concept of TR, AR, MR

Total Revenue: It is the amount/money realized/received by selling certain units of goods.

$$TR = P \times Q$$



Average Revenue: Revenue earned per unit of output.AR is always equal to price. AR curve is also the firms demand curve.

$$AR = \frac{TR}{Q} \qquad AR = \frac{P \times Q}{Q} = P$$

Marginal Revenue: Change in TR due to sales of additional units of the commodities.

$$MR = \text{change in TR/change in Q and } MR = \frac{dTR}{dQ}$$

- For one unit change in output-

$$MR_n = TR_n - TR_{n-1}$$

TR = when sales area at rates of n per period.

TR = when sales area at rates of n-1 per period.

- AR keeps falling,

$$P \propto \frac{1}{\text{Quality Demand } (Q_d)}$$

- MR keeps falling, becomes 0 & after that becomes negative.

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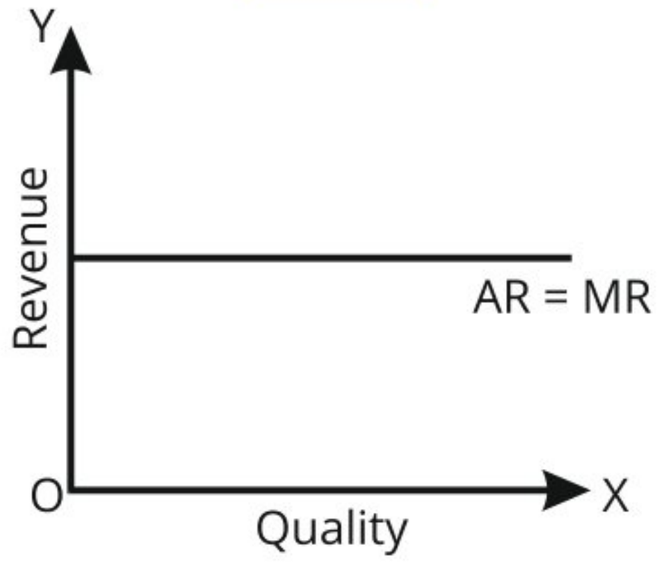
- TR at any particular level is sum of MR,

$$TR = \Sigma MR$$

- In case of constant AR,

$$AR = MR$$



When price remains constant, MR = AR and thus AR & MR curve will coincide and will be horizontal.it happens in perfect competition.

Relationship B/W TR, AR, MR & Price Elasticity of Demand

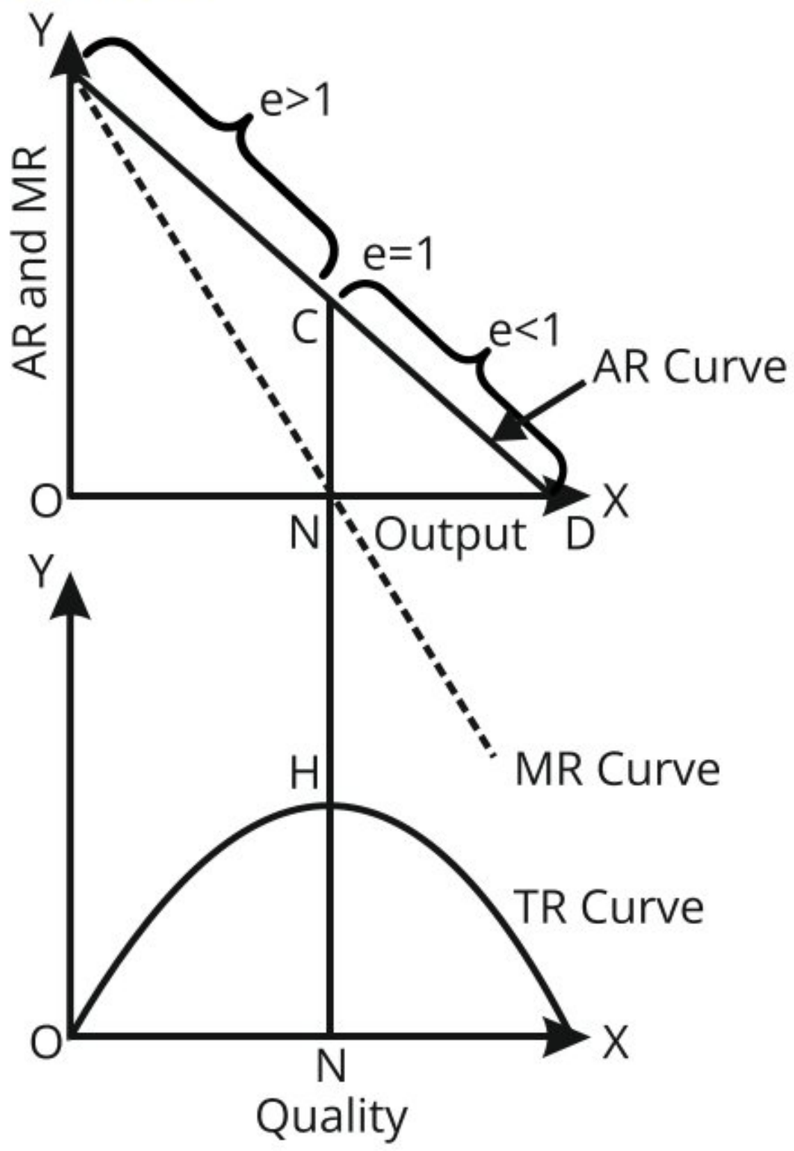
- MR, AR and e (Price elasticity) are related through:

$$MR = \mathbf{AR} \times \frac{e-1}{e}$$

e = 1, MR = 0 and TR is maximum

e > 1, MR will be +ve and TR rises

e < 1, MR will be -ve and TR falls



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- DD is the AR/Demand Curve
- At quantity greater than ON, the MR curve goes below X-axis
- Beyond ON level of output, TR curve has –ve solpe

Behavioural Principles

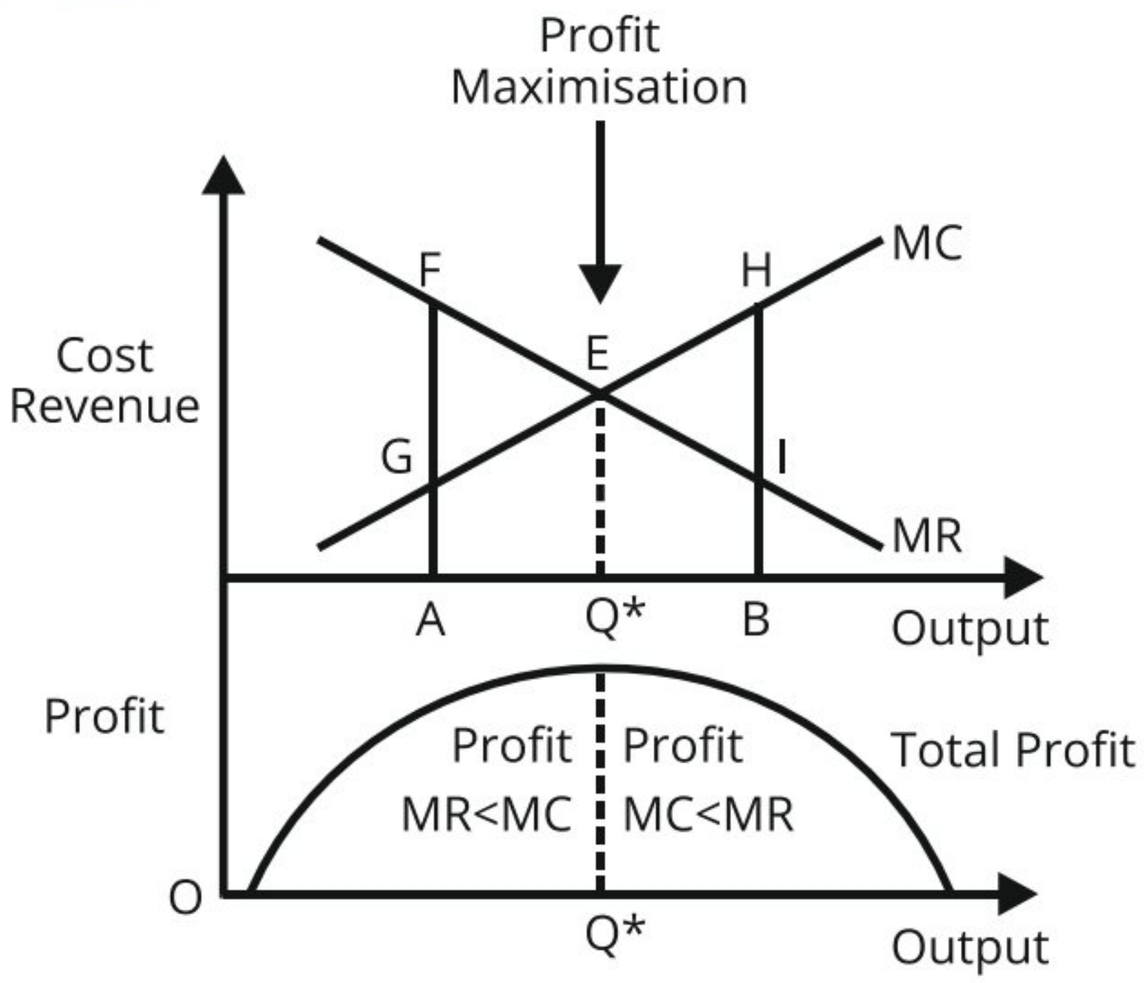
Principle 1- A firm should not produce at all if its total variable costs are not met.

- A firm (competitive) should shut down if price is below AVC.

ATC>AR>min. AVC	P=min. ATC	P>ATC
Covers it variable Cost and some but not all of its fixed costs	Covers both fixed and variable cost, earns normal / 0 economic profit	Covers full cost, earns +ve economic & super normal profit

Principle 2 - The firm will be making maximum profits by expanding output to the level where MR = MC.

- It will pay firm to produce additional units of output, MR > MC, i.e. additional units add more to revenue than cost.



CHAPTER – 4 : Price Determination in Different Markets

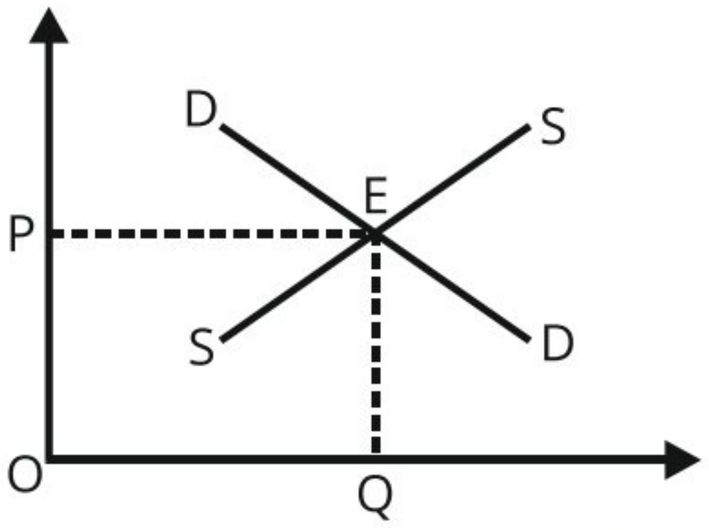
Unit - 3 Price Output Determination Under Different Market Forms

PERFECT COMPETITION

- Features / Characteristics of Perfect Competition

1. Large Number of Buyers and Sellers	➢ Share of each seller and buyer in market is too small → single buyer & single seller is unable to influence existing price and quantity
2. Homogenous or Identical Producers	➢ Perfect Substitutes ➢ Perfectly elastic demand
3. Free Entry and Exit	➢ There are No legal or market related restrictions to entry and no special costs to exit an industry.
Above 3 Characteristics are conditions for Pure Competition	
4. Perfect knowledge of market condition	➢ Both Buyers and sellers have full information related to their decision to buy or sell
5. Very low transaction costs	➢ No advertisement required
6. All firms individually are price takers	➢ Firms accept price determined by market forces ➢ Price taking applies to consumers as well ➢ If any seller raises his price, he would lose his customers

- Price Determination Under Perfect Competition
- Equilibrium of the Industry-
  - Competition among goods produced by different units.
  - Total industry output/Supply = Total demand
  - Market Equilibrium or market clearing : Maximizing its profits; no incentive to expand/contract production.



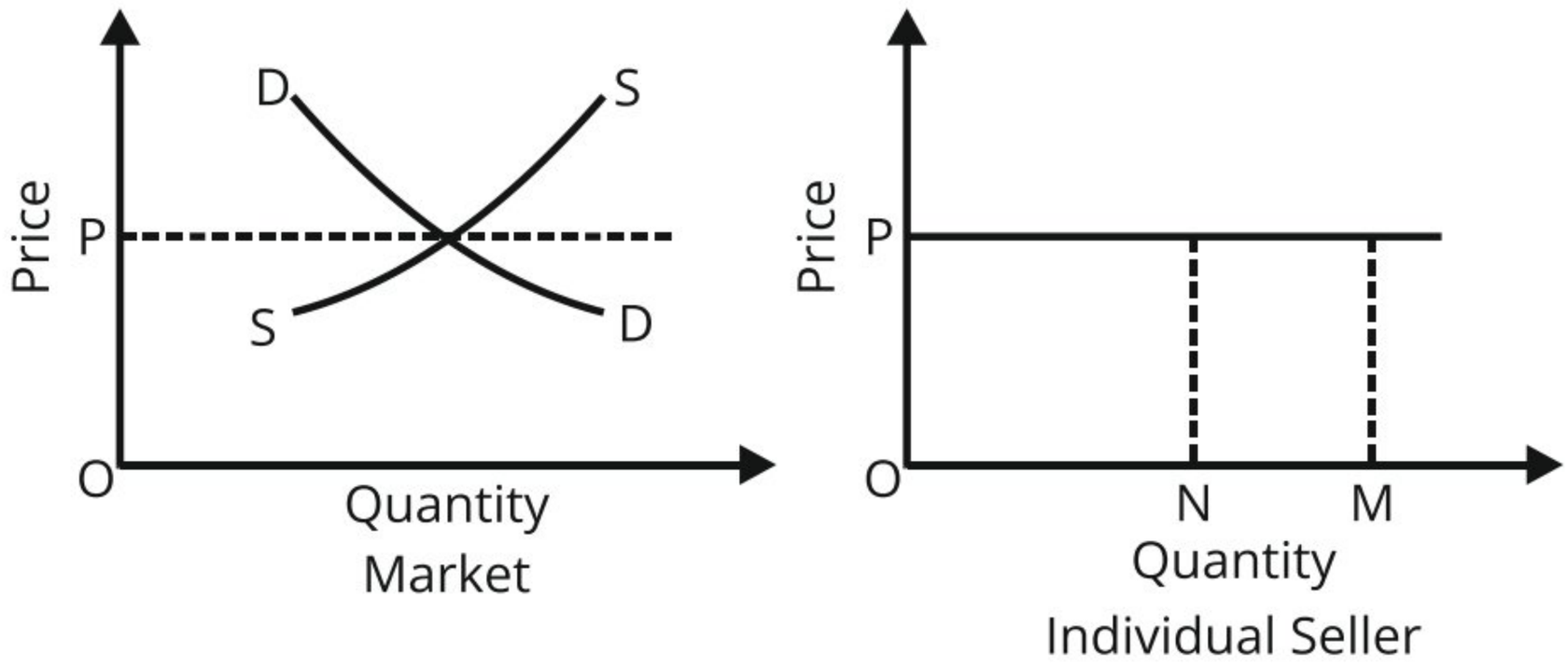
At point E , demand = supply – it is market equilibrium

OP: Equilibrium price

OQ: Equilibrium quantity

Equilibrium of the Firm-

- Equilibrium of a firm is when it maximizes its profit.
- Equilibrium output: Output which gives max. profit to the firm.
- Firm has no incentive to change output.
- Firms are price- takers, and produce homogenous products.
- Price is determined at the equality of demand and supply in market.



(Price line= demand curve/MR/AR)

- Demand curve of an individual forms is perfectly elastic.
- Competitive firms adjust output to market place to earn maximum profit.

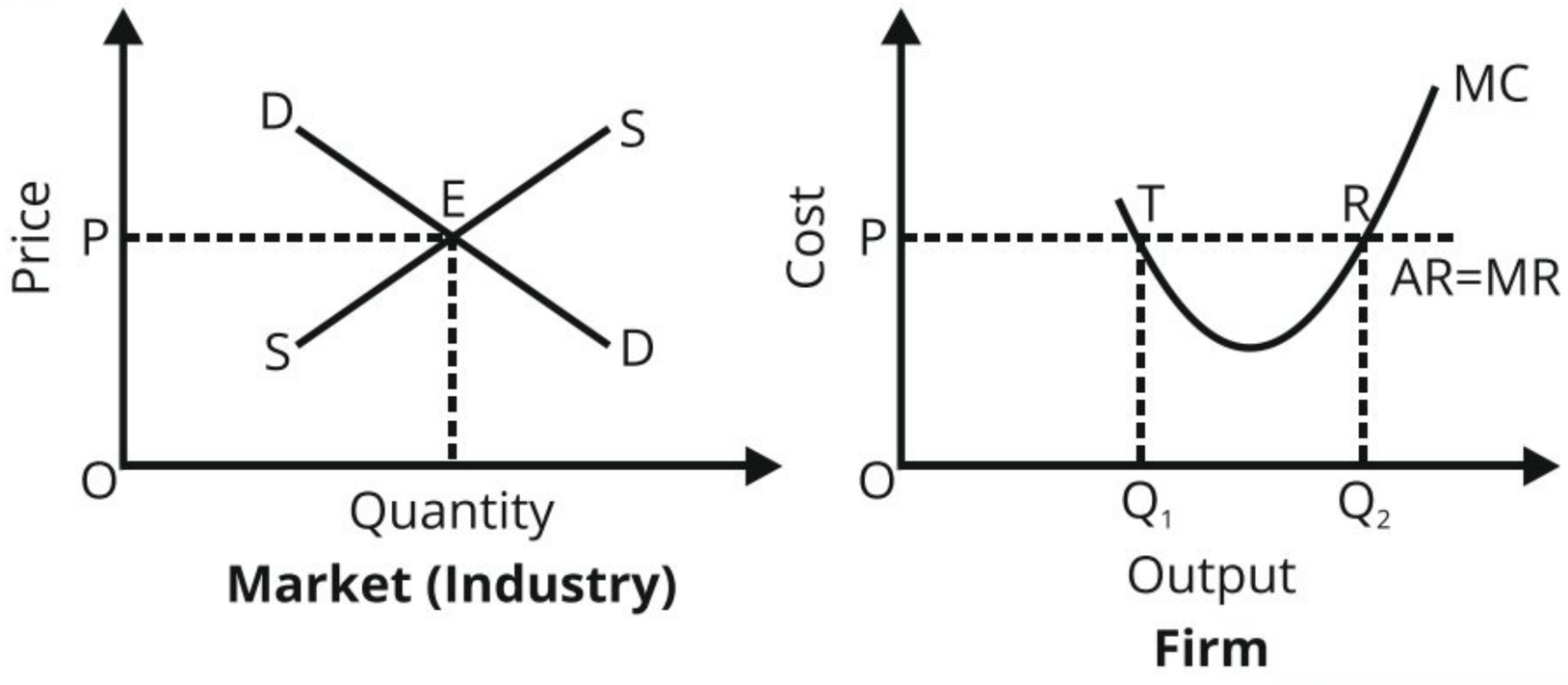
Conditions of Equilibrium of Firm

1. MC = MR
2. MC curve cuts MR from below- MC has a +ve slope

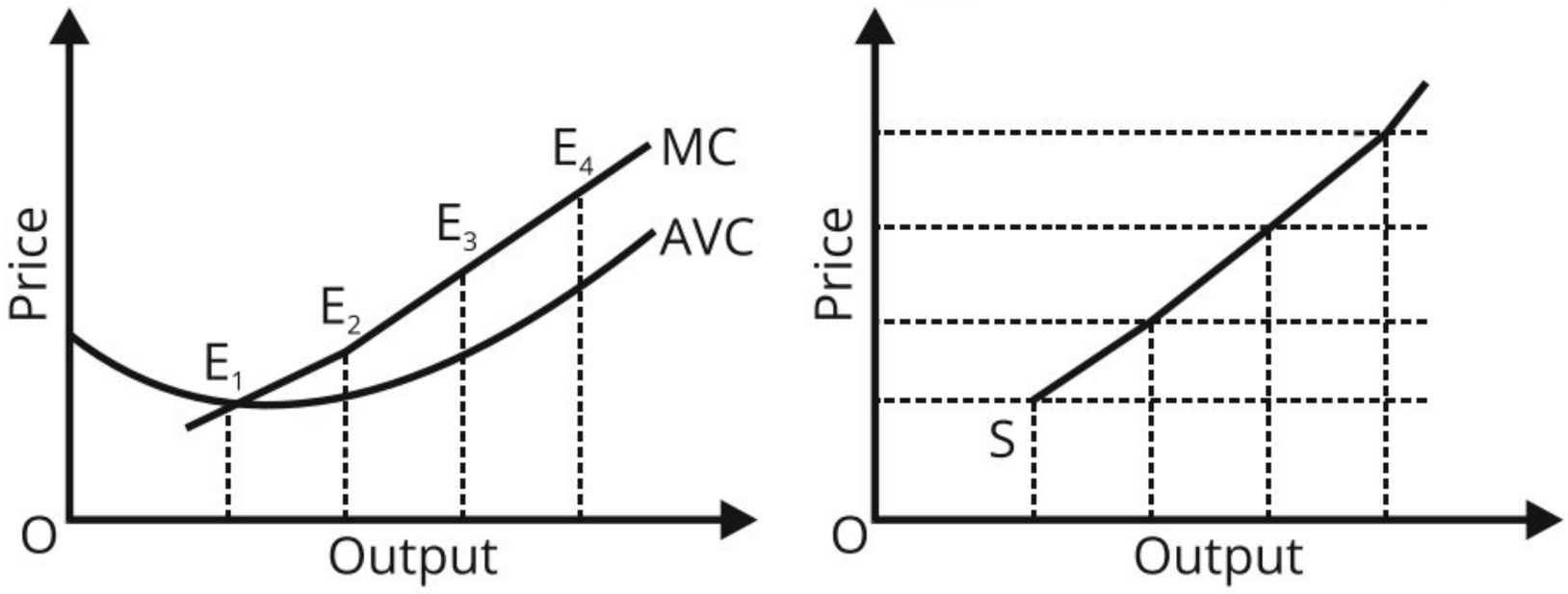
Short Run Profit Maximization

(By a competitive firm)

- In short run there is a fixed amt. of capital, thus firms choose level of variable inputs to max. profit.



- Short Run Supply curve of the Firm in Competitive Market-
  - MC curve of a firm in perfect competition, depicts the supply curve of the firm.
  - For price below AVC, the firm will supply 0 units, as it can't even meet its variable costs.
  - Prices above AVC the firm will equate price and MC.
  - Portion of MC curve above AVC curve is the supply curve of a firm under perfect competition.



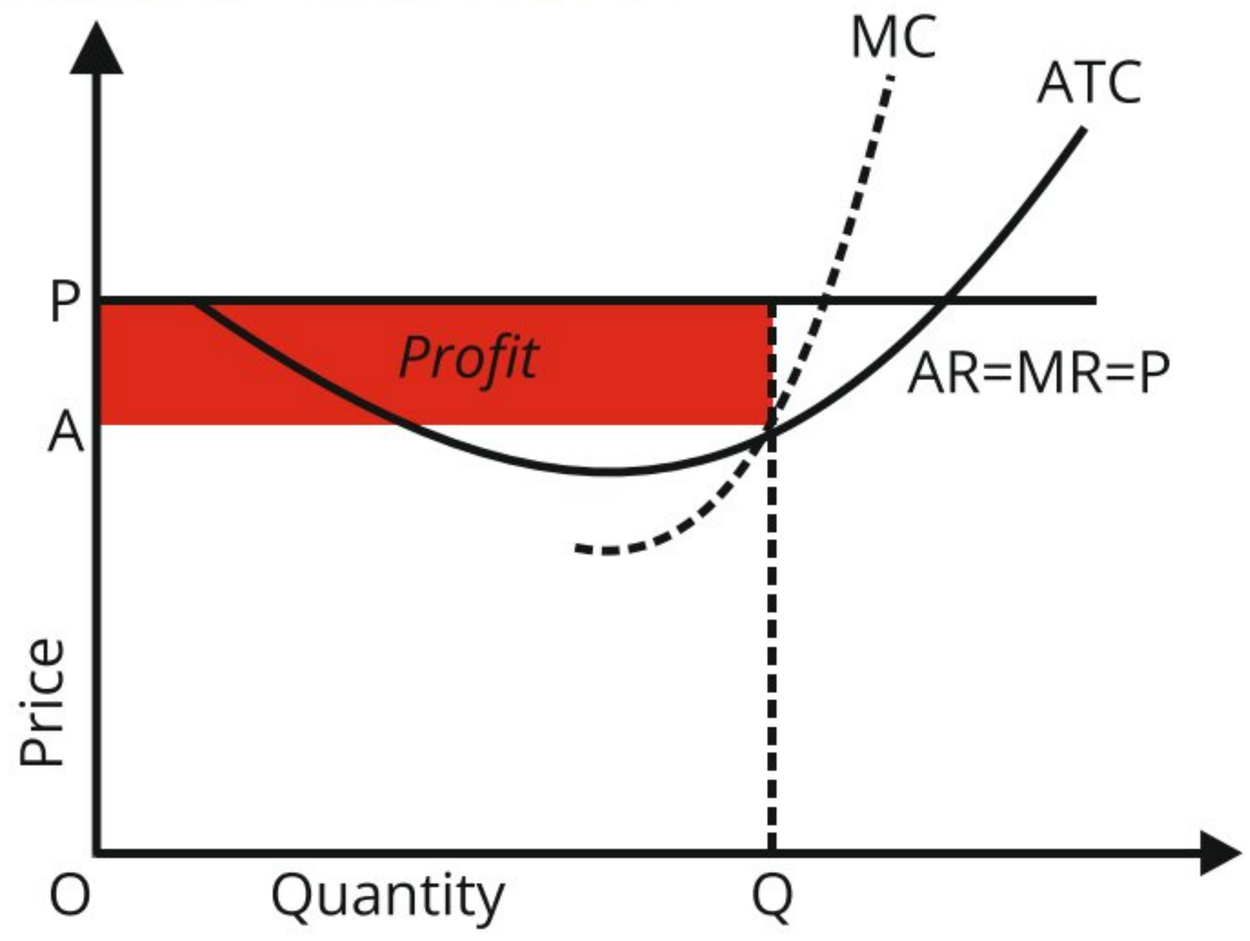
Marginal cost and supply curves for a price-taking firm

- Types of Profits-

Supernormal Profits- When 'AR' is more than the average total cost.

AR > ATC

Thus firms earn normal profit + additional profit.



Supernormal Profits

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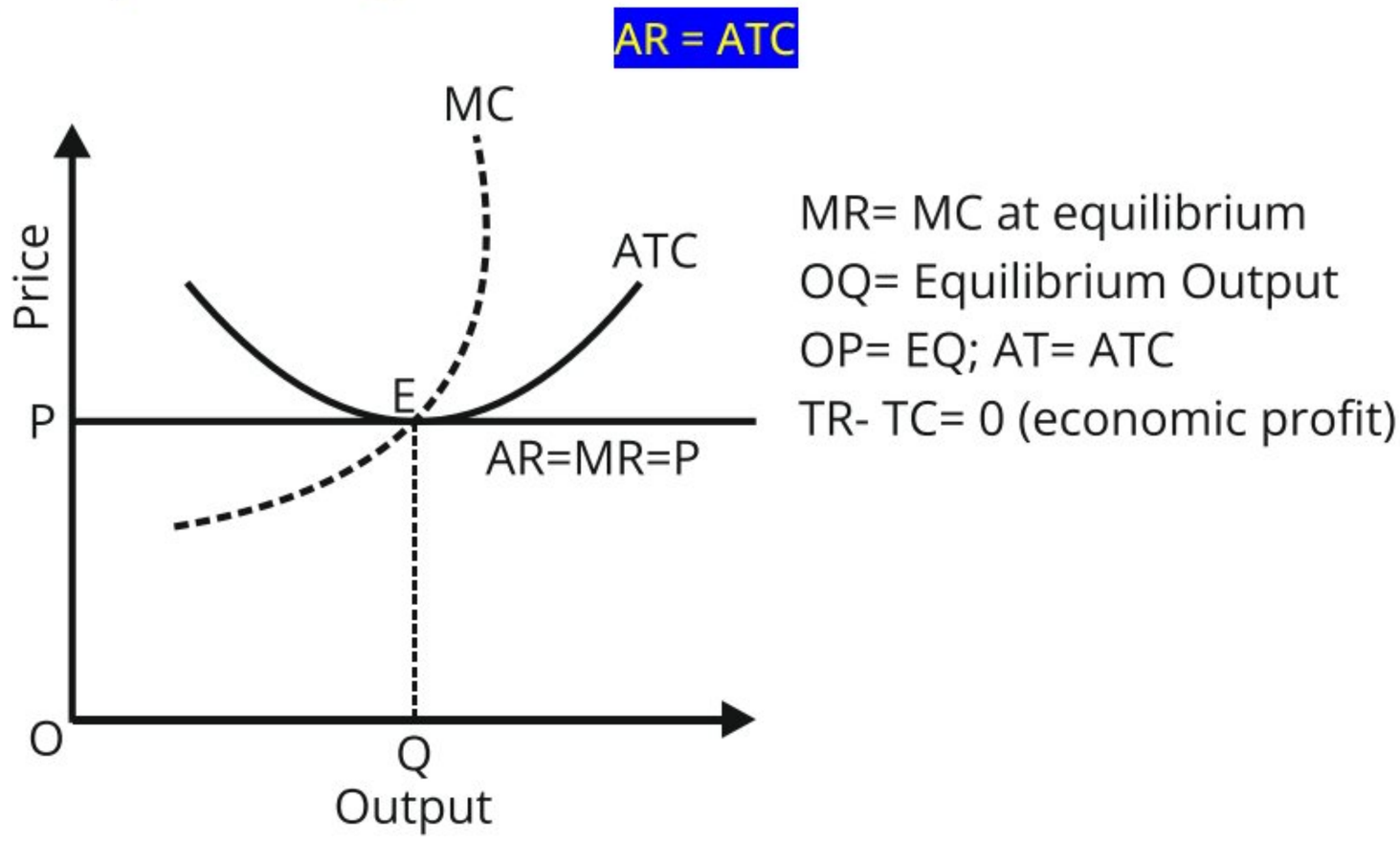
- **Normal Profits-**

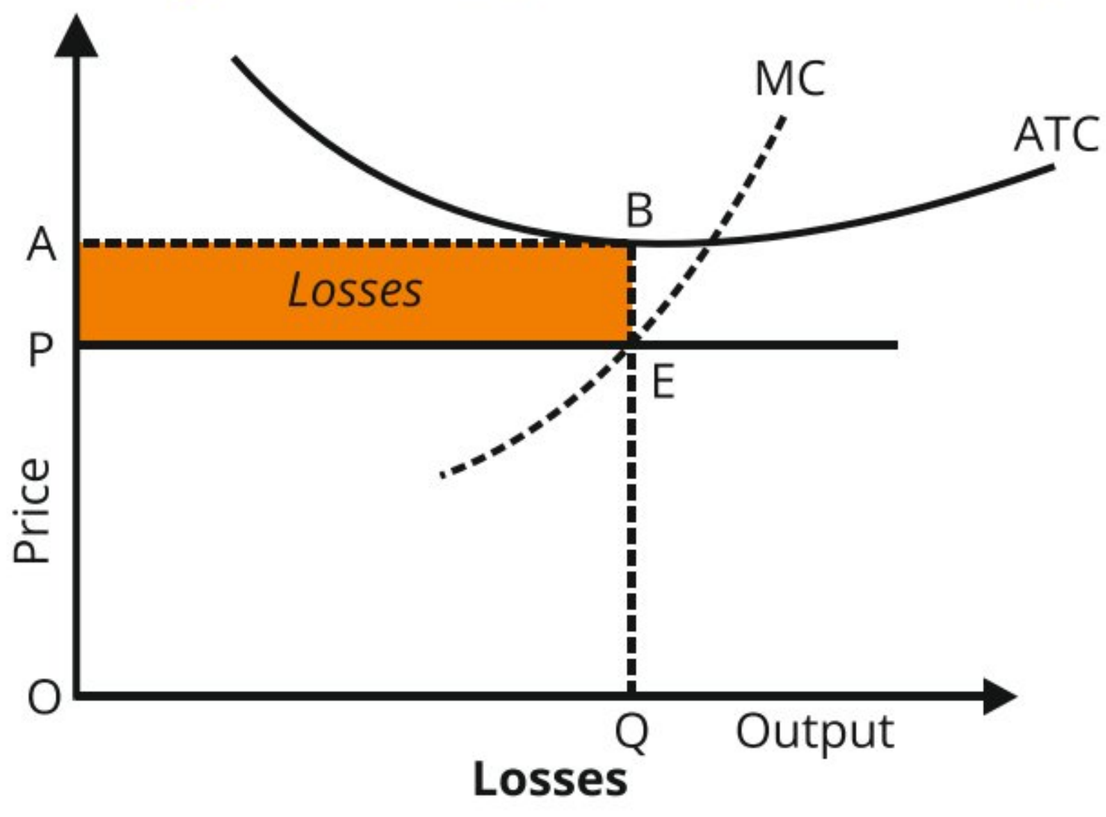
When AR is just equal to average total costs.



MR= MC at equilibrium
OQ= Equilibrium Output
OP= EQ; AT= ATC
TR- TC= 0 (economic profit)

Normal Profits

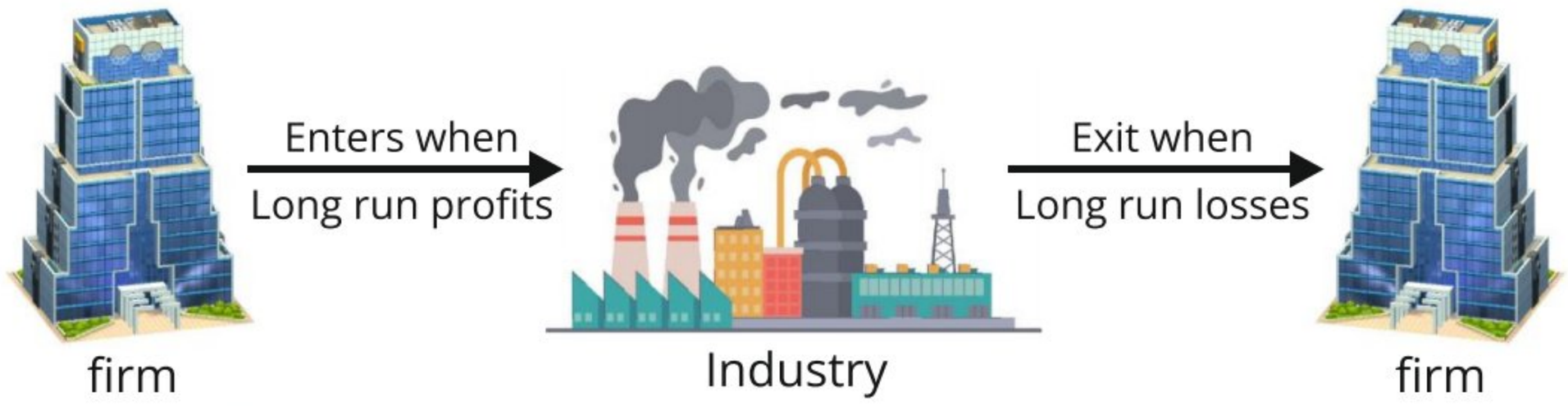
- **LOSSES-**
  - A firm can make loses even at equilibrium.
  - this situation is when firm minimizes losses.
  - All points above the minimum point of AVC curve, a firm will produce level of output at which MR= MC.
  - After meeting variable cost and part of fixed cost, the firm will continue production in short run.
  - When it recovers a part of fixed cost, firms continue production as fixed cost incurred could be recovered then.
  - If unable to meet average variable cost, firm should shut down production.



Losses

Long Run Equilibrium of Competitive Firm

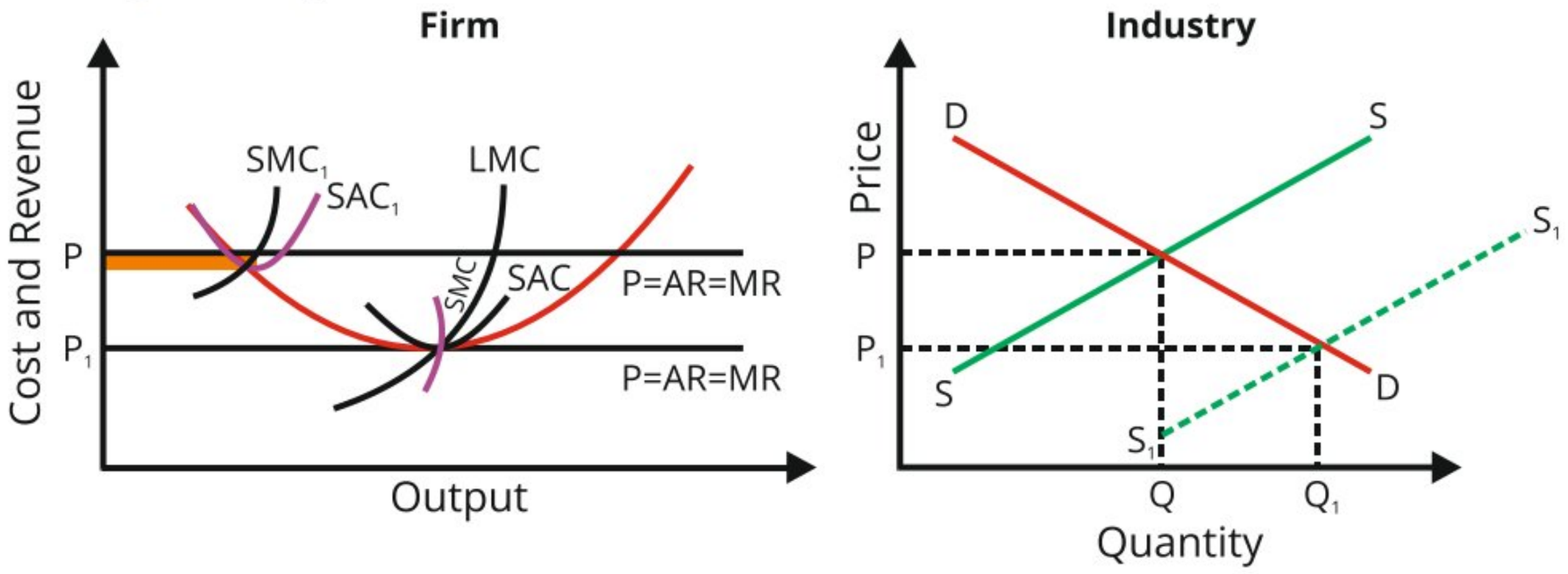
- Unlike in short run, firms can adjust the scale of operations or exit the industry.



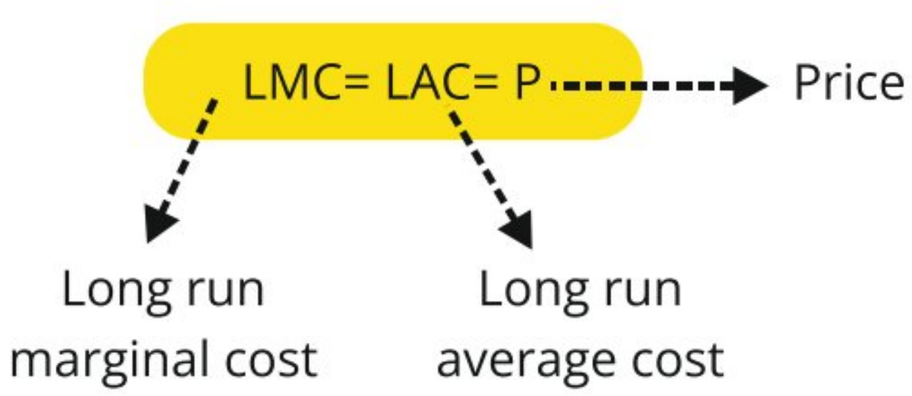
Long run equilibrium- When firm produces at min. point of their Low- run ATC curve tangent to the demand curve.

Supranormal profits- Attracts firms Leading to price reduction cost curve shifts right Reaches equilibrium.

Short run Losses- Firm exit market Price increases Potential cost reduction Remaining firms cover TC (including normal profit).



Conditions-



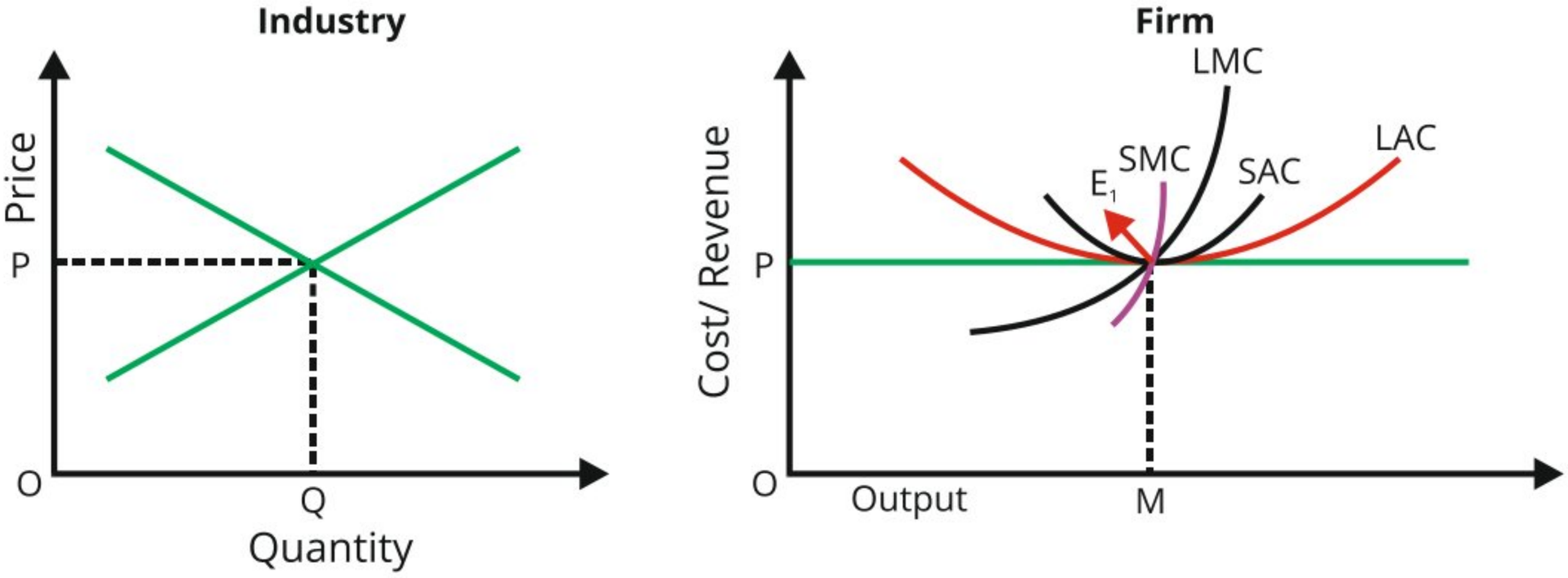
Long Run Equilibrium of Industry

Conditions-

- All firms in the industry are in equilibrium (maximizing profits).
- No firm has an incentive either to enter/ exit the industry (all firms earn 0 economic/normal profit).

Captain Love Kaushik

- Price is such that the quantity demanded = quantity supplied.
- Long run AR = MR= LAC= LMC at E_1.
- Equilibrium output= OM
- Optimum output = Producing output at minimum cost.
- Market mechanism leads to proper allocation of resources.



- Optimality can be shown by–

1. Output produces at min. feasibility cost.
2. Consumer pay min. possible price (marginal cost) MC=AR (P= MC).
3. Plants used in full capacity, no wastage; AC= MC.
4. Firms earn only normal profits; AC= AR.
5. Firms maximize profits; MC= MR (normal profit)
6. No optimum no. of firms in industry.

LMR= LAR= P= LMC= LAC

Monopoly

Alone to sell i.e there is a single seller of a product which has no close substitutes.

Features-

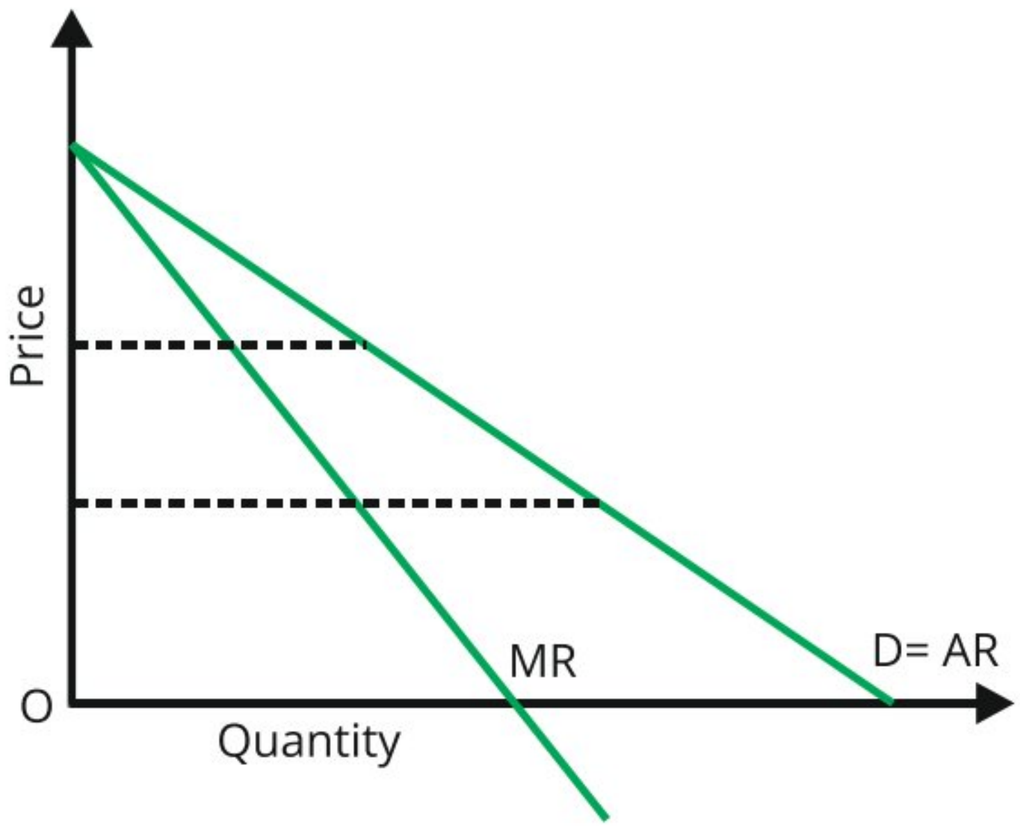
- Single Seller- firm and industry are same .
- Barriers to entry- Economic, legal, institutional etc. barriers exist
- No close substitute- The firm has full control over the market, Thus a price maker, not a price taker. In such a case, the cross elasticity of demand for the monopolist's product and any other product is zero or very small. The price elasticity of demand for monopolist's product is also less than one
- Market Power- Has the ability to change price above MC and earn a positive profit.

How Do Monopolies Arise ?

- Strategic control over scarce resources, technology inputs.
- Developing/acquiring control over unique products.
- Government grants exclusive rights (to produce/sell).
- Patents and copyrights (exclusivity).
- Business combinations/cartels (illegal in most countries) where former competitors cooperate on pricing or market share.
- Extremely large setup cost, to enter market.
- When single firm can produce industries output at low unit cost than 2/more firms could.
- Enormous goodwill enjoyed by the firm.
- Stringent legal and regulatory requirements effectively discourage entry of new firms without specifically prohibited.
- Firms use anti- competitive practices (predatory tactics) to discourage potential competition.

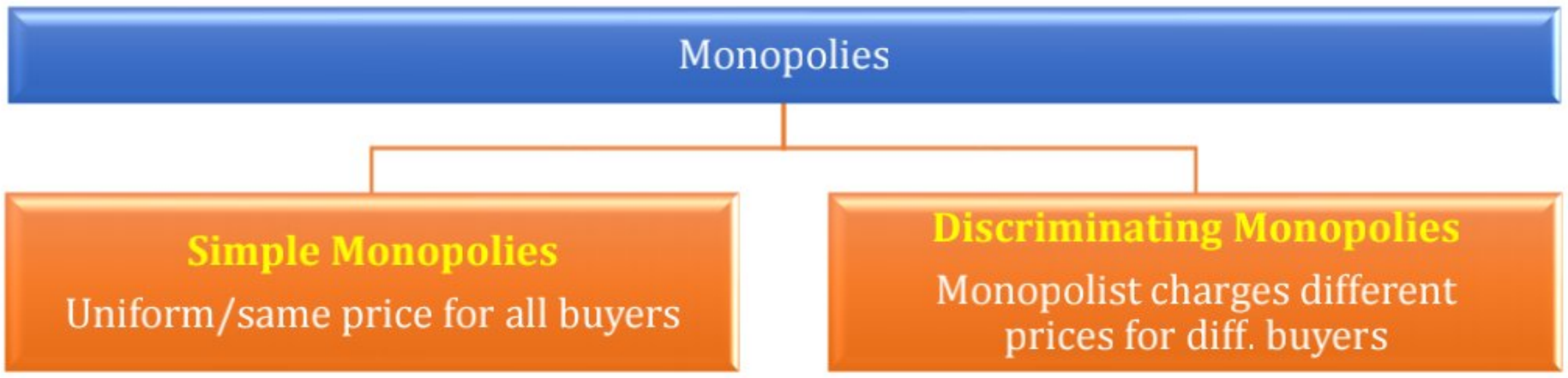
Monopolist's Revenue Curve

- In absence of govt., monopolies sets prices that yields highest possible profits.
- Assumption- Monopoly sells at a single price & supplies all buyers who wish to buy at that price.



Relation between AR and MR of monopoly firms-

1. AR and MR are downward sloping (negative slope).
2. Slope of MR curve is twice than that of AR.
3. AR cannot be 0, but MR can be 0 or negative.



- Profit Maximization in a Monopoliesed Market

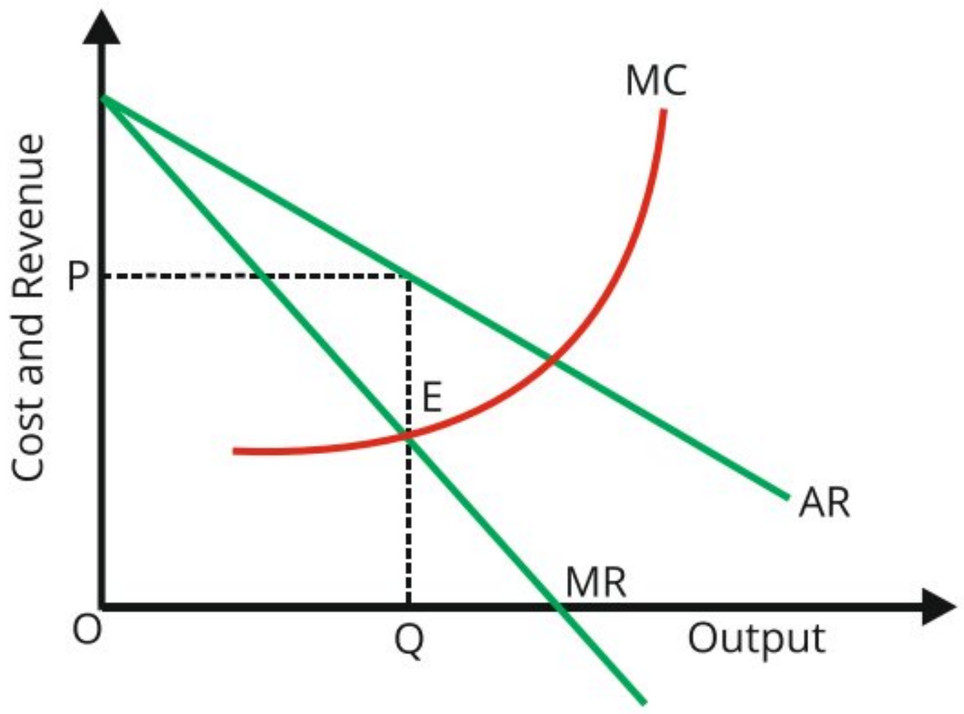
  How a monopoly firm decides its output and price in short run and long run.

- Short run equilibrium-

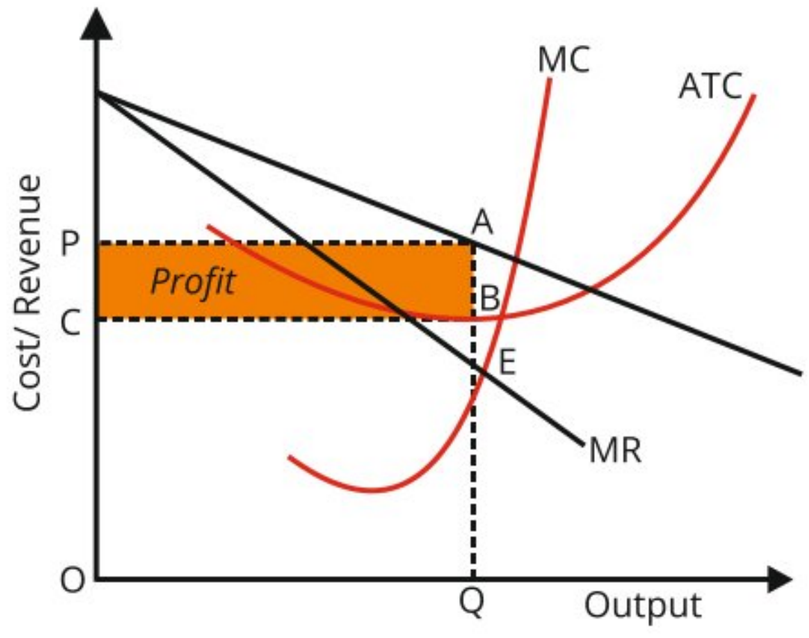
  Conditions: MR= MC and MC curve cuts MR curve from below

- Conditions for equilibrium-

  Twin conditions for equilibrium in monopoly market can be grammatically depicted as-

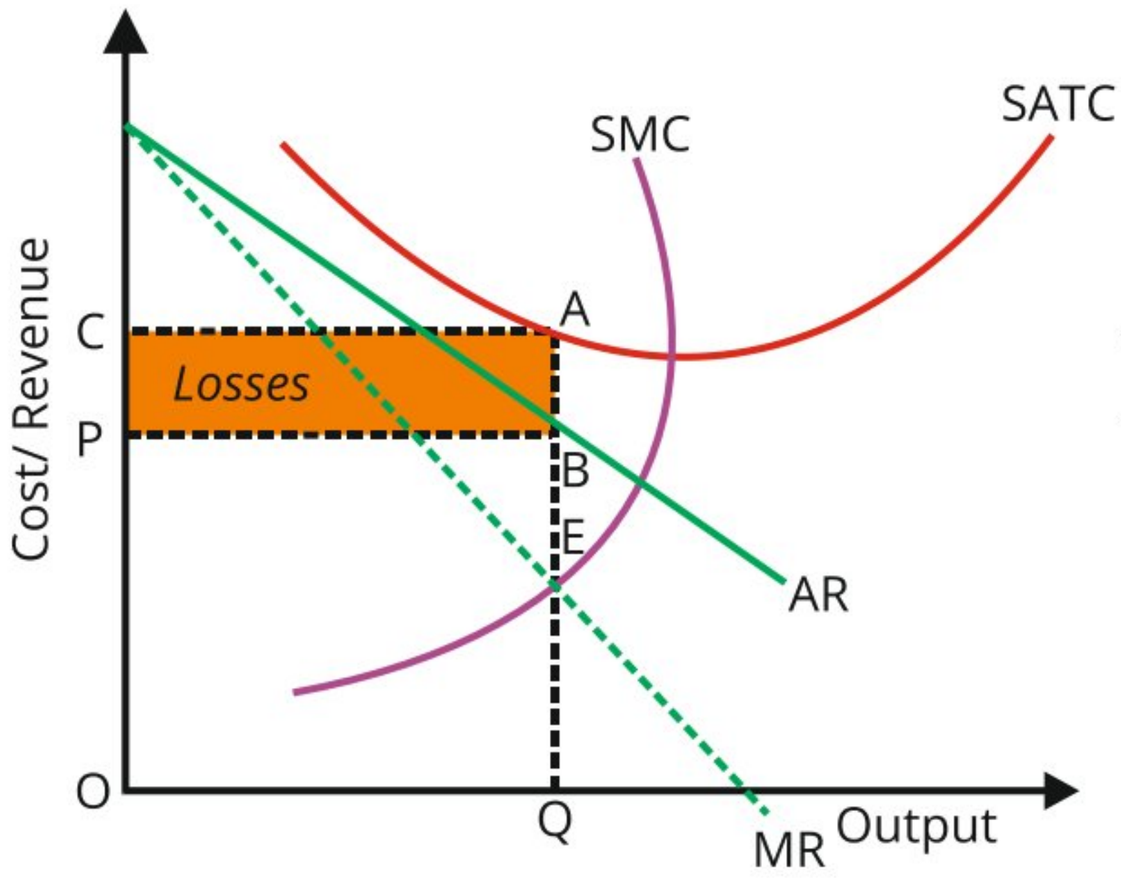


ATC curve (to identify profit/ losses in short run)–



- **MC cuts MR at E**
- **Equilibrium output= OQ**
- **At OQ, Price charge is OP**
- **At OQ, Avg. total cost= QA**
- **Cost per unit= BQ**
- **Economic Profit/ unit= AR- ATC= AB (AQ-BQ)**
- **Total Profit= ABCP**

- Can Monopolist Incur Loss? YES
  - In cases, when the demand for their product is very low, cost conditions are such that- ATC>AR.



- **Loss at extent of AB**
- **Total loss= ABPC**

- Long Run Equilibrium

  In long time period that allows adjustment of plant size/ to use existing plant at any level to maximize profit.

- Price Discrimination
  - It's a method of pricing adopted by a monopolist to earn abnormal profits.
  - It changes prices for different units of same commodity.
  - Eg- Doctors, Lawyers, consultants etc., charging different fees, prices
  - Price discrimination cannot persist under perfect competition (seller has no influence).

- Conditions for Price discrimination

  (a) Full control over supply:

  (b) Division of market into two or more sub-markets:

  (c) Different price elasticity under different markets:

  (d) No possibility to resale:

Thus,

1. Monopolist charges higher prices from relatively inelastic demand markets.
2. Highly responsive market is charged less.

$$\text{MR in market} = \text{AR}\left[\frac{e-1}{e}\right]$$

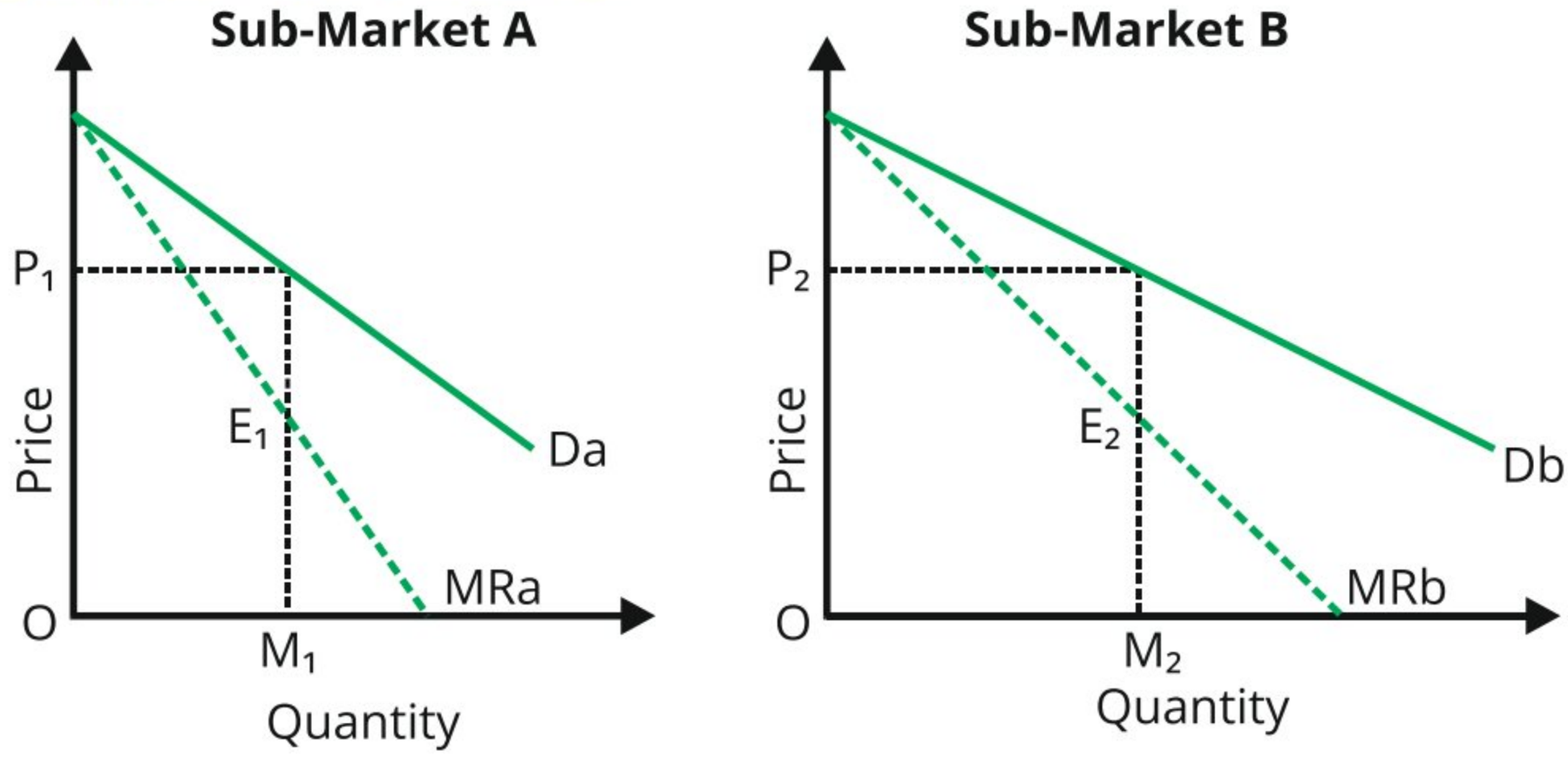
- Objectives of price discrimination
  - Earn max. profit.
  - Dispose off surplus stock.
  - Enjoy economics of scale.
  - Capture foreign markets.
  - Secure equity through pricing.

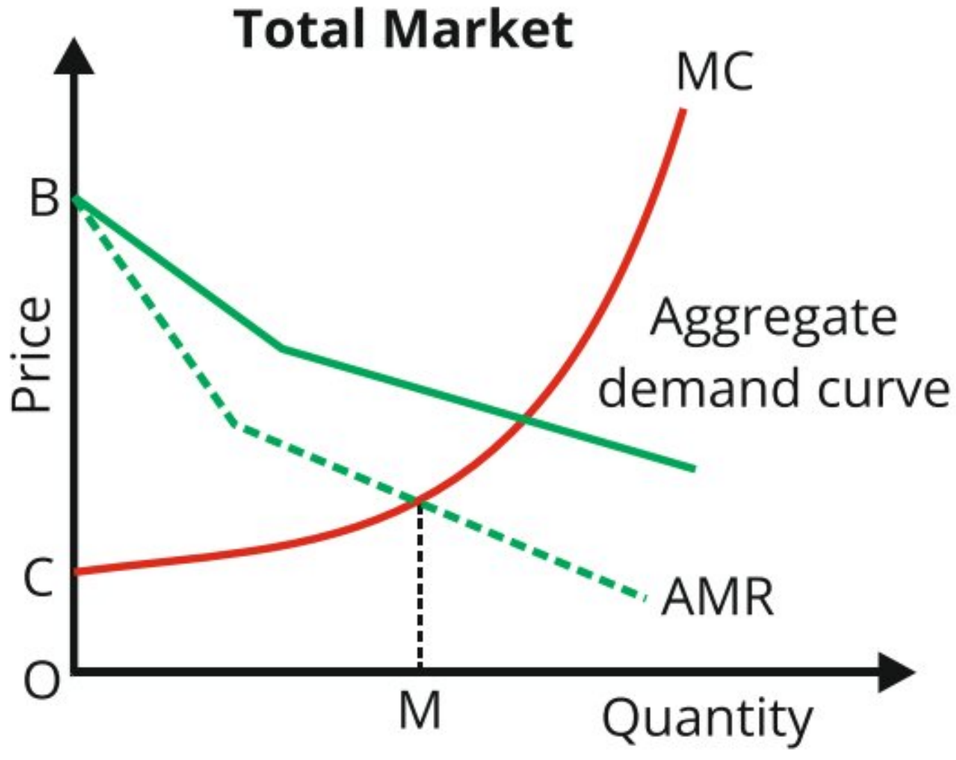
- Equilibrium Under Price Determination:

Monopolist has to make 3 decisions for equilibrium–

1. How much total output should he produce?
2. How the total output is distributed b/w 2 sub- markets?
3. What prices should be charged in the 2 markets?

- Discriminating monopolist compares the MR with the marginal cost of the output.
- Aggregate MR = Sum of MR curves.





Observations-

-OM_1: Sold in sub- Market A

-OM_2: Sold in sub- Market B

$$OM = OM_1 + OM_2$$

- Profits maximizes when they produce the level of output when MC intersects AMR
- MR in the 2 markets should be equal (He would distribute output in a way that the different sub-markets will give equal marginal revenue).
- Marginal cost (MC) should be equal for the sun-markets too.

Economic Effects of Monopoly

- Reduces aggregate economic welfare through loss of productive and allocative efficiency.
- Change higher price, produces lower output.
- Earn economic profits in long run, which is unjustifiable Prices exceed MC, therefore reduces consumer surplus.
- Restricts consumer sovereignty/opportunities.
- May use unjust means to restrict entry in market.
- Monopolist are powerful to influence political process, hence, obtain favorable legislation.
- Monopolies are unable to pay low prices to supplies.
- Loss of management efficiency in limited competition market.

Imperfect Competition- Monopolistic Competition

- It is a mixture of monopoly and perfect competition markets.
- This means features of both markets exist.
- Eg- Dettol, Lux, Dove all produce the same product, but differentiate them on basis other than price.

1. Dove- for young, smooth skin.
2. Lux- for beauty soap.
3. Dettol- for antiseptic use.

FEATURES-

- Large no. of sellers.
- Product differentiation (size, design, color; i.e. factors other than price).
- Freedom of entry and exit.
- Non-price competition (advertising, after sale service etc.)

Price Output Determination Under Monopolistic Competition- Equilibrium of a Firm

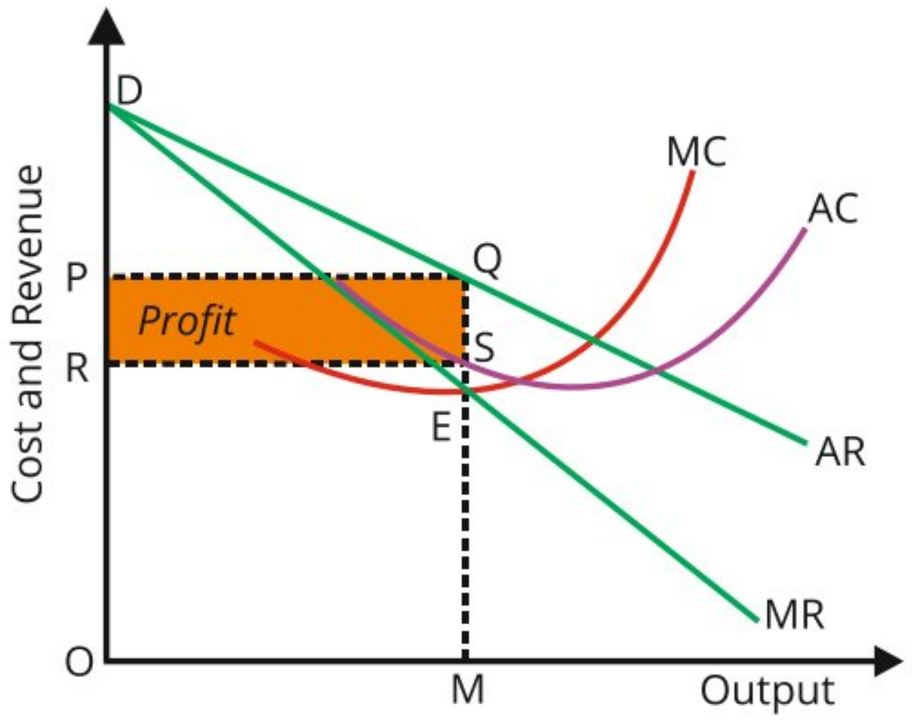


Fig- Supernormal Profits

- Each firm makes decisions about price and output.
- Each firm is a price maker.
- As such the curve is download sloping, for its demand.
- Less the differentiation of product, more elastic is the curve.

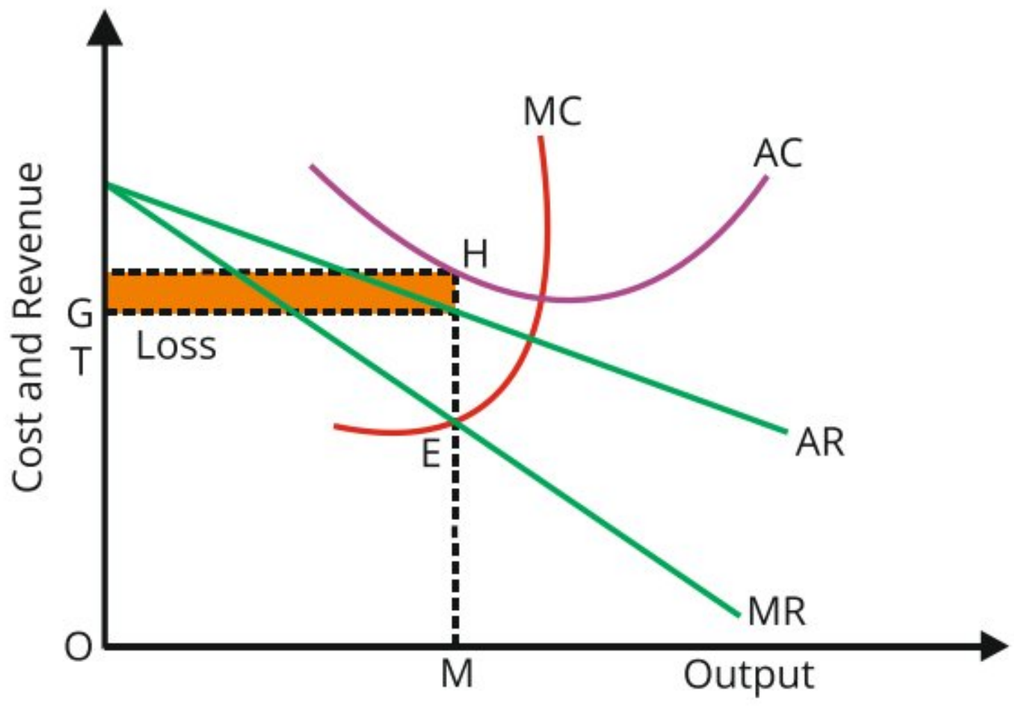
Conditions for Equilibrium of Individual Firm

- MC= MR
- MC must cut MR curve from below.

Short run-

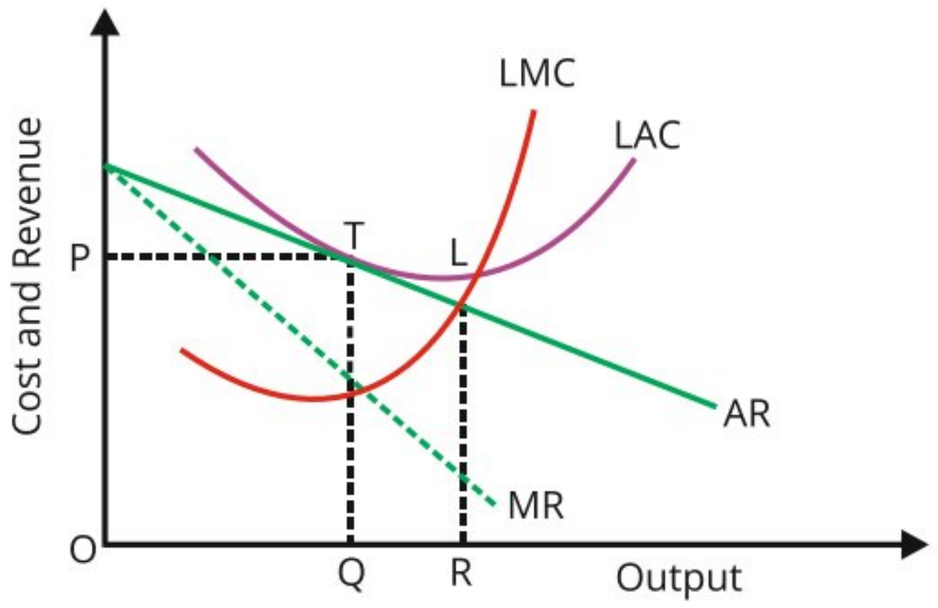
According to previous figure,

- MC cuts MR at E.
- Equilibrium price= OP.
- Equilibrium output= OM.
- Supernormal profits= PQSR.
- Per unit cost= SM



- Firm can incure losses in short run too.
- Per unit cost= HN
- HN> OT (or KN)
- Loss= KH (HN-KN)
- Total loss= GTKT

Long run-



- Average revenue curve touches average cost curve at T.
- Equilibrium quantity= Q
- Equilibrium price= P
- Supernormal profit= O (AR= AC)
- If company is facing loses, it will exit the market
- Monopolistically firm- at equilibrium- has excess capacity

Perfect Competition	Monopoly	Monopolistic Competition
Large No. of Buyers, firms in Industry.	Single seller (no diff. b/w firm & industry).	Large no. of firms, buyers in industry.
Homogenous products (perfect substitutes)	NO close substitutes.	Differentiated products are close substitutes.
Insignificant market share.	Command over whole market.	Each firm is small relative to market.
Monopoly- absent	High monopoly	Some monopoly
Free entry, exit	Strong barriers to entry	Free entry, exit
Price taker	Price maker	Has control over price
Price lesser than market forms. (equal to marginal cost)	High equilibrium price. (higher than marginal cost)	Price higher than competition. (higher than marginal cost)
Demand curve-elastic	Downward sloping, inelastic	Downward sloping, elastic
MR, AR represented by same curve.	MR, AR start at same pt.; MR is 2x steep than AR.	MR, AR start at same pt.; MR is 2x steep than AR.
TR- Straight line, +vely sloping, through origin.	TR inverted U- shaped.	TR inverted U-shaped.
NO price M discrimination.	Price discrimination can be done.	Depends on extent of monopoly power.
No supernormal profits in long run.	Supernormal profits in short and long run.	No supernormal profits in long run.
No selling cost.	Low selling cost.	Selling cost vital to persuade buyers.
Decides output, on given price.	Decides both price and output.	Decides both price and output.
Product produced at min. avg cost.	Produced at declining portion of avg. cost curve.	Produced at declining portion of avg. cost curve.
Equilibrium quantity is highest (produced at least cost).	Equilibrium quantity is less than other market forms.	Equilibrium quantity less than optimal (excess capacity)
No customer exploitation.	High prices can lead to customer exploitation.	Customers influenced through price and non-price competition.
Efficient resource allocation (no wastage)	Inefficient allocation (wastage happens)	Inefficient allocation (huge wastage)

- Oligopoly
  - Oligopoly → 'competition among few sellers'
  - Examples - Airlines, telephone connection, petroleum refining, power generation, cold drinks, automobile, & Internet service providers etc.
- Characteristics of Oligopoly Market-
  - Strategic Independence- Firms have independent in- decision making. Few firms in market have intense competition.
  - Importance of advertising and selling cost- Firms employ various aggressive and defensive marketing weapons to gain greater share.
  - Group Behavior- Theory of oligopoly is a theory of group behavior, not of mass or individual behavior.

Pure & Impure oligopoly	Pure oligopoly or perfect oligopoly are the firms under oligopoly selling homogeneous product e.g. petroleum, steel, and aluminum industry.
	Differentiated or imperfect oligopoly occurs when goods sold is based on product differentiation, e.g., Talcum Powder.
Open & closed oligopoly	Open oligopoly → new firms can enter market & compete with existing firms.
	In closed oligopoly entry is restricted.
Collusive & competitive oligopoly	When few firms of oligopoly market come to common understanding → deciding price or output or both together, it is collusive oligopoly.
	When there is absence of such an understanding among the firms and they compete with each other, it is called competitive oligopoly.
Partial & Full	Oligopoly is partial when industry is dominated by one large firm → looked upon as leader of group. Dominating firm will be price leader
	Full oligopoly → Absence of price leadership.
Syndicated & Organized oligopoly	Syndicated oligopoly → Firms sell their products through a centralized syndicate.
	Organized oligopoly → Firms organize themselves into a central association for fixing prices, output, quotas, etc.

- Oligopoly Models

  (1) Ignore firms' inter dependence

  (2) (a) Cournot model → firm's control variable is output. They do not collude.

  (b) Stackelberg's model leader decides output and rest of firms are followers

  (c) Bertrand model, price is control variable

  (3) Enter into agreement and try to pursue their common interests. Eg- OPEC

- Price Leadership

  - Cartels formed in industries with smaller- sized firms, aiming to coordinate activities and gain market power.
  - Cartels relay on agreement among produced, leading to monopoly profits, especially with inelastic demand.
  - Dominant firms surrounded by small firms.

- Kinked Demand Curve/ Sweetzy's Model

  It provides an explanation for the observed price rigidity in oligopolistic industries. Acc. to it-

  - Kinked demand curve- Demand curve has a 'kink' at prevailing price level. Above it the demand is elastic, while below it is relatively elastic.
  - Assumed competitively reaction pattern- Oligopolist believe lowering prices, competitors will follow suit, but on the contrary increasing them, this won't happen. This mentality is crucial in setting prices.
  - Price decrease- Change in prices, will lead to competitors change in price, which will make the sales of firm relatively unchanged, which makes lower segment of curve inelastic.
  - Price Increase- When an oligopolist increases the price, competitors don't follow the suit and hence leads to loss. Thus, competitors are not motivated, So, upper portion of demand curve is relatively elastic.
  - Desire of Price stability- Oligopolists desire price stability as change in price will not make little change in the gains. Thus they are not motivated to change
  - Formation of kink at prevailing prices- Due to assumed competitive patterns, such oligopolist adheres/stick to prevailing price.

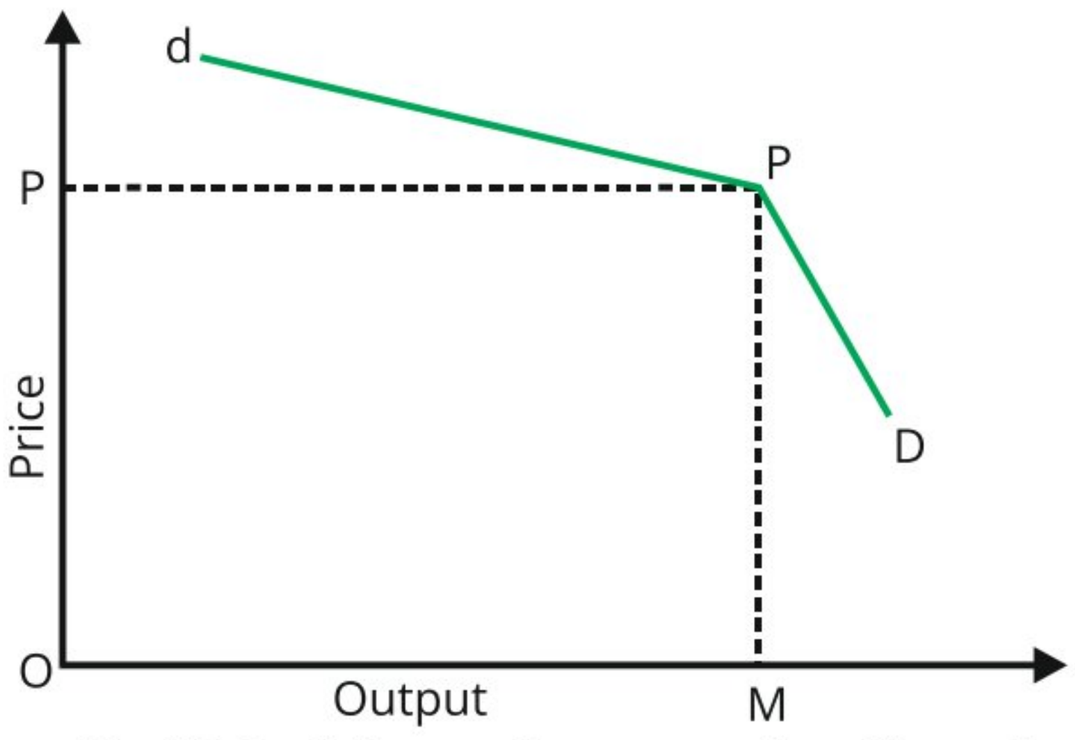


Fig- Kinked demand curve under oligopoly

- OTHER MARKETS
  - Duopoly- Sub- set of oligopoly; only 2 firms exist in the market.
  - Monopsony- It is characterized by a single buyer, usually exist in factor market.
  - Oligopsony- Small no. of large buyers, mostly relevant to factor markets.
  - Bilateral monopoly- Single buyer and single seller- combination of monopoly and monopsony.

CHAPTER – 6 : Determination of National Income

UNIT-1 NATIONAL INCOME ACCOUNTING

- The central statistical organization (CSO) in the ministry of statistics and programme implementation (MoSP & I) is responsible for the compilation of National Income.
- DES's (Directorates of economic and statistics) are responsible for the same at state level.

■ Usefulness and Significance of National Income Estimates

(1) It provides a framework for analyzing the short-run performance.

(2) The distribution pattern of national income helps businesses to forecast future demand.

(3) Economic welfare depends on magnitude & distribution of national income

(4) NI shows composition and structure of NI of different sectors & variations in them. Helps to make comparisons of trend and speed of development

(5) Provides quantitative basis for assessing, choosing & evaluating economic policies

(6) Shows income distribution and possible inequality in its distribution. Make comparisons of statistics, such as ratios of investment, taxes, to GDP

(7) Provides guide to make policies for growth and inflation

■ Concept of GDP

GDPmp- GDP is the Value of all final goods and services produced in a country during a period of time. It includes value of goods produced at market place and these values add together to GDPmp.

Nominal GDP – it is the GDP calculated at current year price level.

Real GDP- it is the GDP calculated at base year price level.

Nominal GDP increases over time because-

(1) Production of most goods increases over time

(2) Prices of most goods increases over time

GDP deflator- (imp. Topic)

$$\text{GDP deflator} = \frac{\text{Nominal GDP}}{\text{Real GDP}} \times 100$$

- GDP deflator is the price index used to convert nominal GDP to Real GDP.
- It measures the current level of prices relative to the level of prices in base year.
- Since nominal GDP & real GDP must be same in the base year, deflator in the base year = 100 (imp. Fact)

- GDP deflator in year 1 = GDP defaltor_1
- GDP deflator in year 2 = GDP defaltor_2

$$\text{Inflation rate in year 2} = \frac{\text{GDP defaltor}_2 - \text{GDP defaltor}_1}{\text{GDP defaltor}_1} \times 100$$

NUMERICAL ILLUSTRATIONS-

Q. Find out GDP deflator and Interpret it.

	Real GDP	Nominal GDP (Cr)
Year 1	400	500
Year 2	450	600

Ans. GDP Deflator = $\frac{\text{Nominal GDP}}{\text{Real GDP}} \times 100$

Year 1	Year 2
$\frac{500}{400} \times 100 = 125$	$\frac{600}{450} \times 100 = 133.33$ (approx..)

Interpretation:

- Year 1 GDP deflator is 125, prices have increased by 25% since base.
- Year 2 GDP deflator is 133.33 (approx.), inc. in price since last year.

Q. Find nominal GDP if real GDP = 450, Price index = 120

Ans. Nominal GDP = Real GDP $\times \frac{\text{Price Index}}{100} = 450 \times \frac{120}{100} = 540$

■ Net Domestic Product (NDP)

Net amount/value of goods and services produced in a country during a given period of time.

$$\mathbf{NDP_{MP} = GDP_{MP} - Depreciation}$$

■ Gross National Product

- GNP is total value of all goods and services produced by a country's residents both domestically and abroad in a specific period.
- $GNP_{MP} = GDP_{MP}$ + factor income earned by domestic factors of production employed in rest of the world.
- Factor income earned by the factors of production of rest of the world employed in domestic territory.

$$\mathbf{GNP_{MP} = GDP_{MP} + Net\ factor\ from\ abroad\ (NFIA)}$$

NFIA = Net compensation of employees + Net income from property and entrepreneurship + Net retained earning.

National = Domestic + NFIA

- **Net National Product at Market Price (MP)**

  NNP_{MP} and GNP – Depreciation, representing the next net market value of all final goods and services produced domestically.

  $NNP_{MP} = GNP_{MP}$ – Depreciation

  $NNP_{MP} = NDP_{MP}$ + NFIA

  $NNP_{MP} = GDP_{MP}$ + NFIA – Depreciation

- **Gross Domestic Product at Factor Cost**

  GDP_{FC} is the money value of output produced within a country's domestic limits in a year as received by the factors of production.

  Market Price = Factor cost + Net indirect tax

  = FC + Indirect tax – Subsidies

  GDP_{FC} = GDP_{MP} – Indirect taxes + Subsidies

  = Compensation of employees + Operating surplus (rent + interest + profit + royality) + mixed income of self-employed + Depreciation.

  Factor cost – Actual cost of payments to factors of production like labour, capital and land.

  Basic price – Excludes tax, on products that producers received from purchases but includes subsides received from the government to lower prices charged to purchases.

  Market Prices – Reflect the final price paid by consumers and includes both product and production taxes while subtracting subsidies.

- **Relationship:**

  Basic Price = Factor cost + Production tax – Production subsidy.

  Market Price = Basic Price + Product tax – Product subsidy.

- **Net Domestic Product at Factor Cost (NDP_{FC})**

  - Total factor income earned by the factors of production.
  - Sum of domestic factor incomes / domestic factor incomes net of depreciation.

  NDP_{FC} = NDP_{MP} – Net indirect tax

  = Compensation of employees + operating surplus (rent + interest + profit) + mixed income of self employed.

- **Net National Product at Factor cost :**

  National income is the factor income occurring to normal residents of the country during the year.

  NNP_{FC} = National Income = Domestic income + NFIA

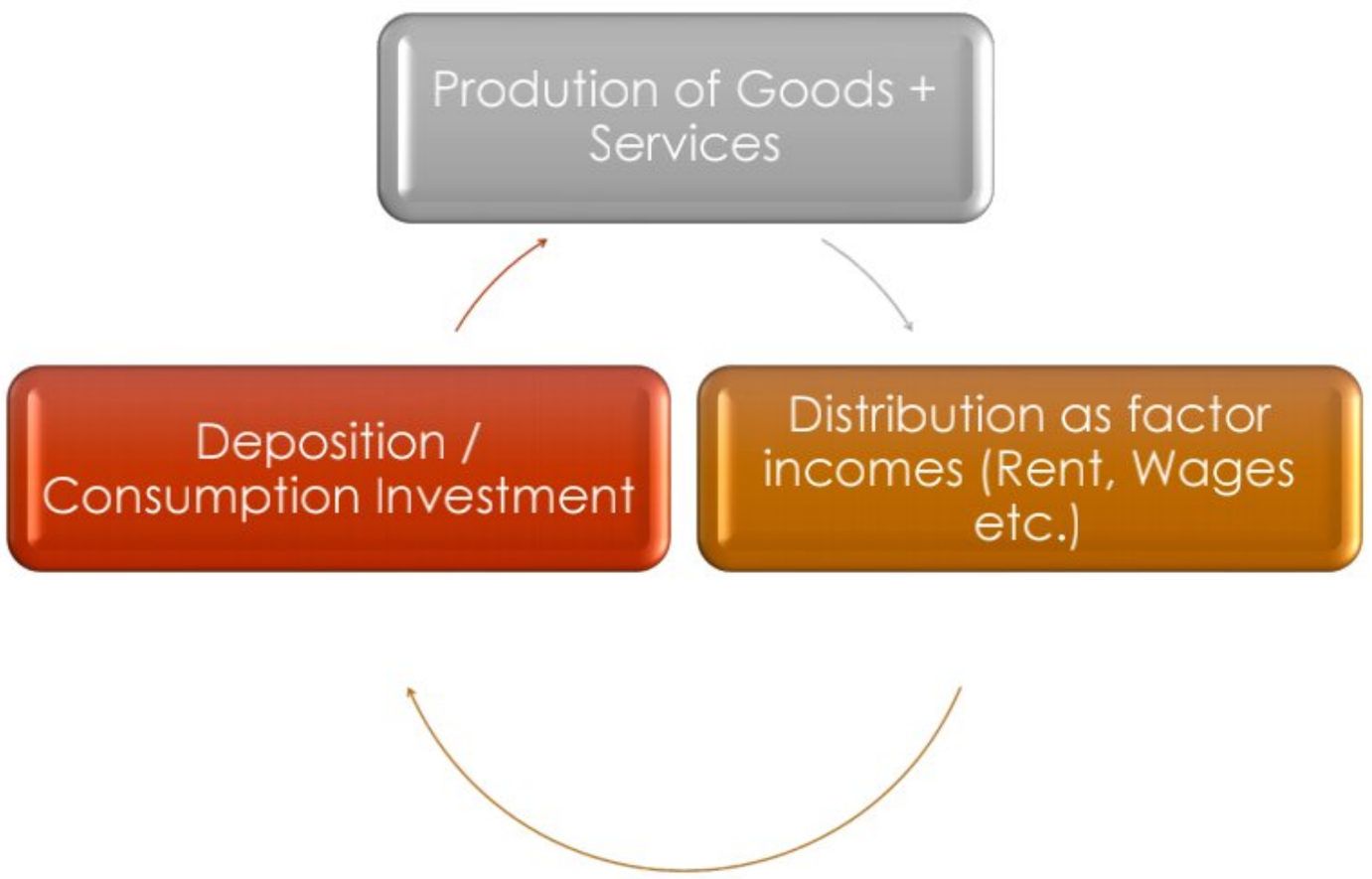
If NFIA is +ve, then national income will be greater than domestic national income.

- **Per Capita Income-**

GDP per capita measures a countries output per person, indicating the standard of living.

$$\text{Per capita income} = \frac{\text{GDP (adjusted for inflation)}}{\text{Total population}}$$

- **Measurement of National Income in India**
- **The Circular Flow of Income–**



Phase 1- Production

Firm produces goods/services with help of factor services

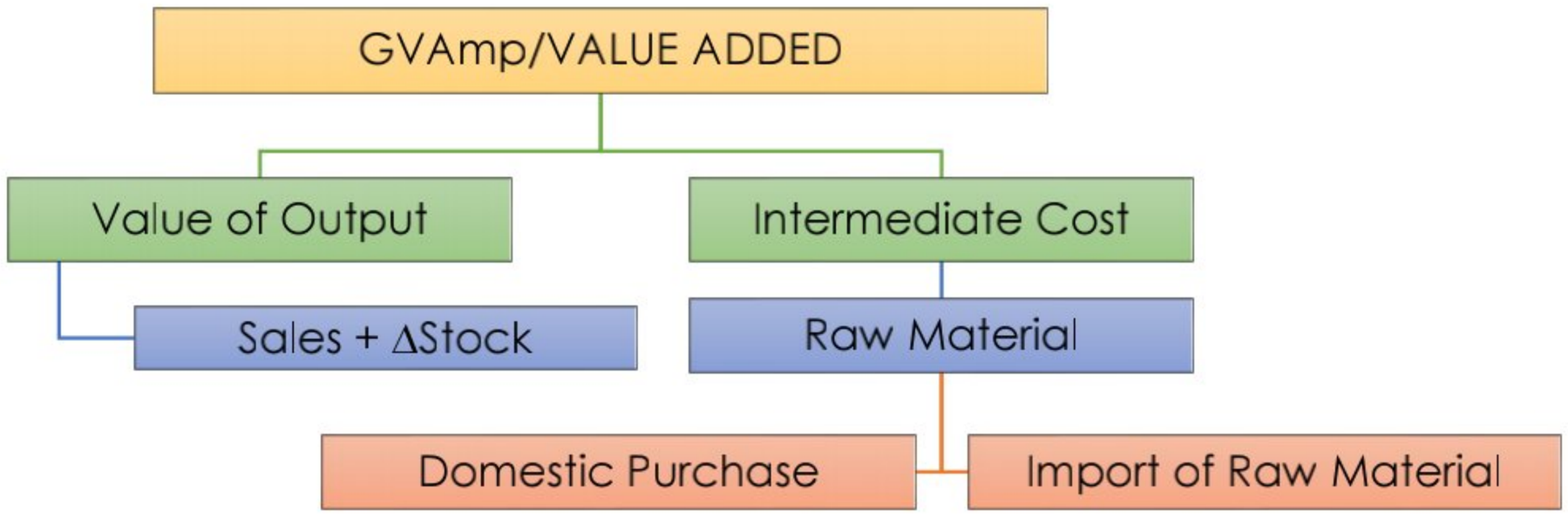
Phase 2- Income/ Distribution

The flow of factor income in form of rent etc, from firms to households.

Phase 3- Expenditure/ disposition

The income received by different factors of production, is spent on consumption of goods and services.

- **Value Added Method/ Product Method**
- **Gross Value Added mp**



- **GVAmp = Sales + Δstock - IC**

NVA at FC = GVAmp – Dep – NIT

Estimation of National Income

[ΣGVA_{MP} – Depreciation = Net value added (NVA_{MP})]

[NVA_{MP} – Net indirect tax = Net domestic product (NDP_{FC})]

[NDP_{FC} + NFIA = National income (NNP_{FC})]

- **Income Method**

  - Total factor incomes generated in the production of goods and services is required for calculation.
  - Relative contribution of factor owners is calculated.
  - It sums up incomes earned by all factors of production within a country's economy.

NNP_{FC} = Compensation of employees + operating surplus (rent + interest + profit + royalty) + mixed income of self employed + Net factor income from abroad **(NFIA)**

Profit = Corporate Taxes + Dividend + Retained Earnings

- **Expenditure Method/Income disposable method**

  - In this method, national income is the aggregate final expenditure in an economy during an accounting year.

GDP = ΣFinal expenditure

- **Private expenditure-** Spending by households on goods & services for consumption purpose (C)
- **Investment expenditure/Gross domestic capital formation-** Spending by business on capital goods, to inc. production capacity. (I)
- **Government expenditure-** Spending by govt. on goods & services (public services, defence etc.) (G)
- **Net export-** Difference b/w the exports and imports. (NX)

Calculation-

$GDP_{MP} = C + I + G + NX$

$NNP_{FC} = GDP_{mp} – Depreciation – NIT + NFIA$

■ **Personal Income–**

Income received by the household sector, including non-profit institutions, excluding retained earnings, indirect business taxes and corporate income taxes.

PI = NI + Income received but not earned – Income earned but not received.

PI = NI – undistributed profits – Net interest payments made by households – Corporate tax + transfer payments to households from firms and govt.

■ **Disposable Personal Income–**

It's a measure of the amount of money in the hands of the individuals that is available for the consumption/savings.

DI = PI – Personal income taxes – non tax payments

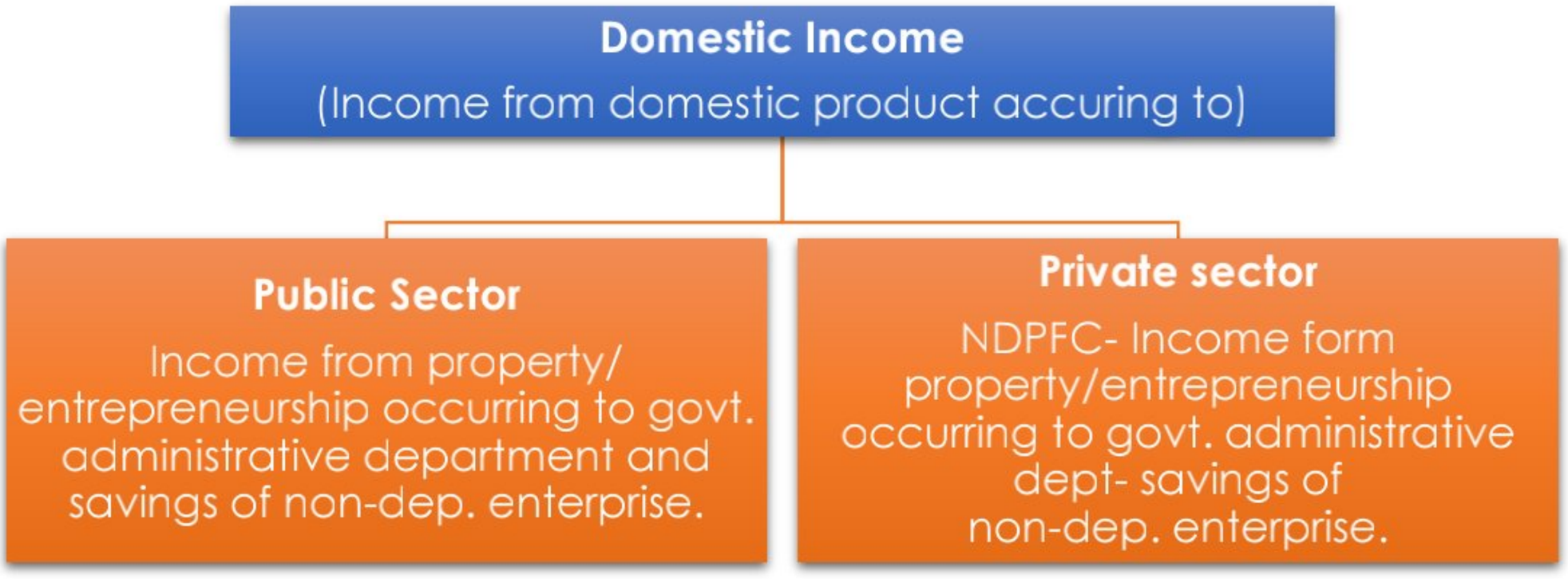
■ **Net National Disposable Income (NNDI)–**

NNDI = Net national income + other net current transfers from the rest of the world.

NNDI = NNI + Net taxes on income and wealth receivable from abroad + net social contributions and benefits receivable from abroad.

■ **Gross National Disposable Income–**

NNDI + CFC = GNI + Other net current transfers from the rest of the world.



- **Private Income**

  Measure of income which occurs to private sector from all sources within and outside the country.

  PI = Factor income from NDP which accures to private sector + Net factor income from abroad + National debt interest + Current transfers from govt. + other net transfers from the rest of the world.

NDP_{FC}	**–**
Less: Income from Property and Entrepreneurship accruing to Government Administrative	**–**
Departments (Railways, Post Office etc.)	**–**
Less: Savings of Non-departmental Enterprises.	**–**
Income from Domestic Product Accruing To Private Sector	–
Add: NFIA	**–**
Add: National Debt Interest	**–**

Add: Current Transfers from Government	–
Add: other Net Current Transfers from rest of the world	–
Private Income	–
Private Income	–
Less: Undistributed Profits	(–)
Less: Corporate Tax	(–)
Personal Income	–
Less:Personal Taxation	(–)
Less: Non-Tax Payment	(–)
Disposable Personal Income	–

■ System of Regional Accounts in India

- Provides integrated database on the innumerable transactions in original economy.
- Net State domestic Product (NSDP)- Measure in monetary terms, volume of all goods and services produced in a state within a given period of time.

$$\text{Per Capita State Income} = \frac{\textbf{Mid-Year Projected income of state}}{\textbf{NSDP}}$$

- State level estimates are prepared by state income units within state directorates of economics and statistics (DESs), with assistance from the central statistical organization.
- **"Supra-regional sectors"-** Railways, communication, banking insurance, central government administration etc.
- Estimates of supra regional sector are compiled and then allocated to stats and based on relevant indicators.

■ GDP AND WELFARE

GDP is often used as an indicator of a countries welfare.

■ LIMITATIONS OF GDP CONCEPT

1. Income distribution is not reflected in GDP per capita.
2. Technology and managerial improvements are not captures.
3. Illegal activities are not accounted for.
4. Non-market and non-economical activities (health/ education) are not included.
5. Increased GDP due to longer working hours aren't accounted for disability of loss of leisure time.
6. Economic bads such as crime/pollution aren't deduced from GDP.

7. Volunteer work and unpaid services are not included.
8. Externalities (positive/negative) are not considered in GDP.

Limitations and Challenges-National Income Calculation

- Lack of agreed definition- national income.
- Accurate distinction of final and intermediate goods. Issue of transfer payments.
- Services of durable goods.
- Difficulty of incorporating distribution of income.
- Valuation of new goods at constant price.
- Valuation of govt. services.

Other challenges related to-

- Inaccurate and unrelatable data.
- Presence of unmonetized sector.
- Production of self-consumption.
- Illiteracy and ignorance leading to unrecorded incomes.
- Lack of proper occupational classification.
- Accurate estimation of consumption of fixed capitals.

CHAPTER – 6 : Determination of National Income

UNIT-2 : The Keynesian Theory of Determination of National Income

- The great depression 1930 promoted a revaluation of economic theory and policy.
- Classical economists lacked a comprehensive theory to explain persistent unemployment.
- John Maynard Keyne's General theory of employment, interest and money 1936, revolutionized modern economics (Specially Macro).

■ Aggregate Supply (AS)

- Ex ante or planned aggregate supply is the total supply of goods and services which firms in a national economy plan on selling during a specific time period.

AS = Total Production

■ Aggregate Demand (AD)

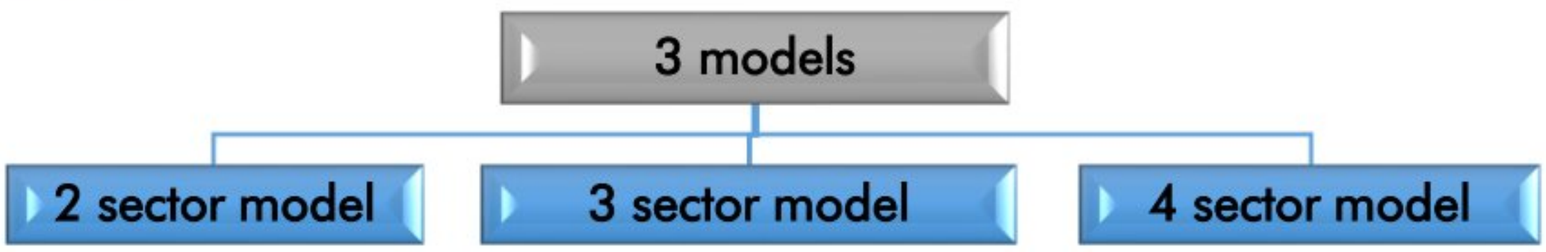
Aggregate demand (AD) is total planned expenditure in the economy.

■ Equilibrium Output

Equilibrium output occurs when desired amount of output demanded in economy exactly equals amount produced in given time period.

In short, equilibrium output refers to the output where AD = AS.

- Keynesian's concepts of income determination is explained through three models of economy



■ Two Sector Model

- Here we study – Household Sector and Business Sector
- AD = C + I (I is assumed to be constant)
- AS = C + S
- Equilibrium is achieved when-

  AD = AS

  OR

  I = S

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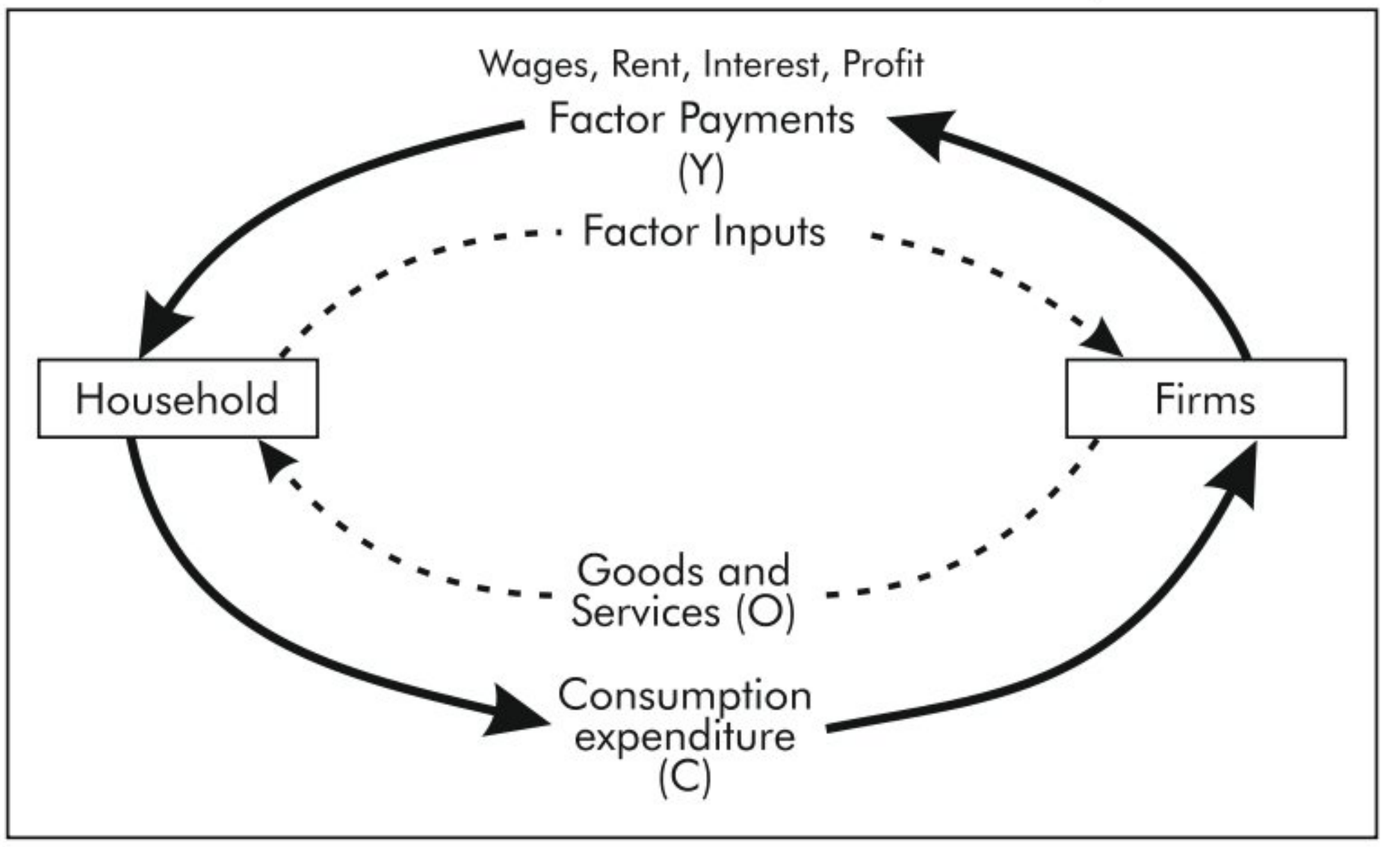
Circular Flow in a Two Sector Economy



Factor Payments = Household Income = Household Expenditure
= Total Receipts of Firms = Value of Output

- **Consumption function –**

It's the functional relationship b/w aggregate consumption expenditure and aggregate disposable income

$C = f(Y)$

Low Income	Inc. in Income
Household spend > disposable income	This causes more disposable income.
This lead to saving	This leads to smaller inc. in consumption expenditure.

- **consumption function (Consumption- Income Relationship)**

$C = a + bY$ $\qquad b = MPC = \frac{\Delta C}{\Delta Y}$

Consumption Function OR Propensity to Consume	
Average Propensity to Consume (APC)	Marginal Propensity to Consume (MPC) It is denoted by 'b'
$APC = \frac{C}{Y}$	$MPC = \frac{\Delta C}{\Delta Y} = b$

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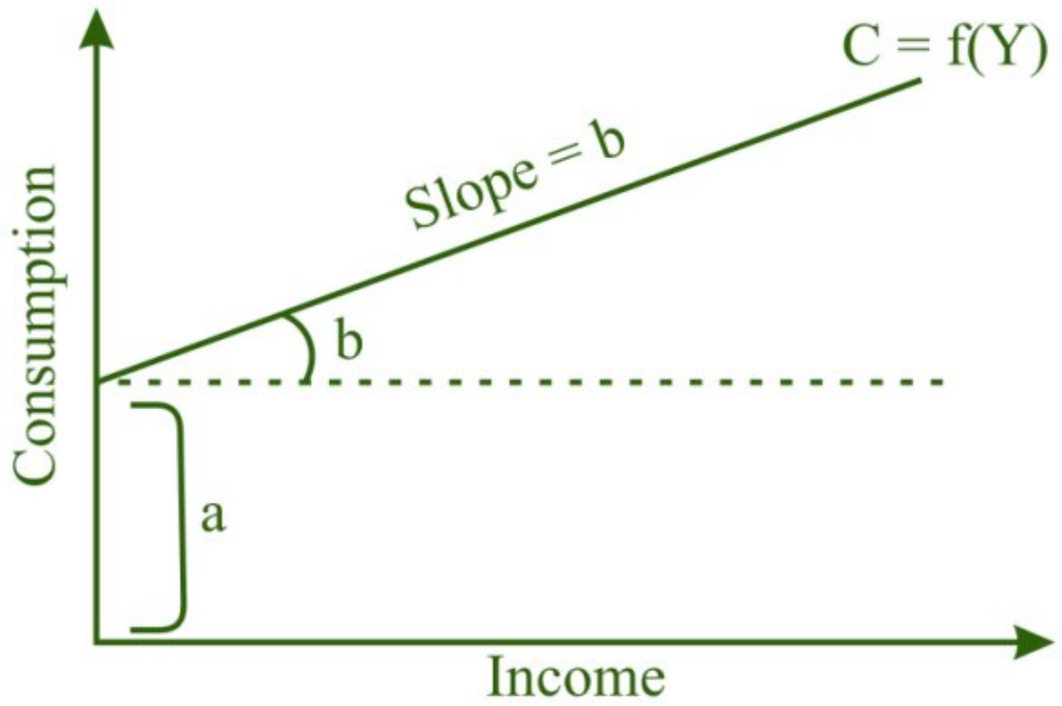


Keynesian assumption–

- But inc. in consumption < inc. in disposable income.
- 0 < b or MPC < 1 , MPC is the slope of consumption curve.
- Average propensity of consume (APC)

$$APC = \frac{\text{Total Consumption}}{\text{Total Income}}$$

- It indicates proportion of income spent on consumption at different income levels.
- APC falls with rise in income.

Income = consumption + saving i.e. Y = C + S

Saving = Income – Consumption

- Saving is function of disposable income. S = f (Y)

Saving Function (Equation) $\boxed{S = \bar{S}\ MPS.\ Y}$	
APS	MPS
$APC = \frac{S}{Y}$	$MPS = \frac{\Delta S}{\Delta Y}$

Relationship B/W Income, Consumption and Saving

- Saving function shows a functional relationships b/w national income and savings.

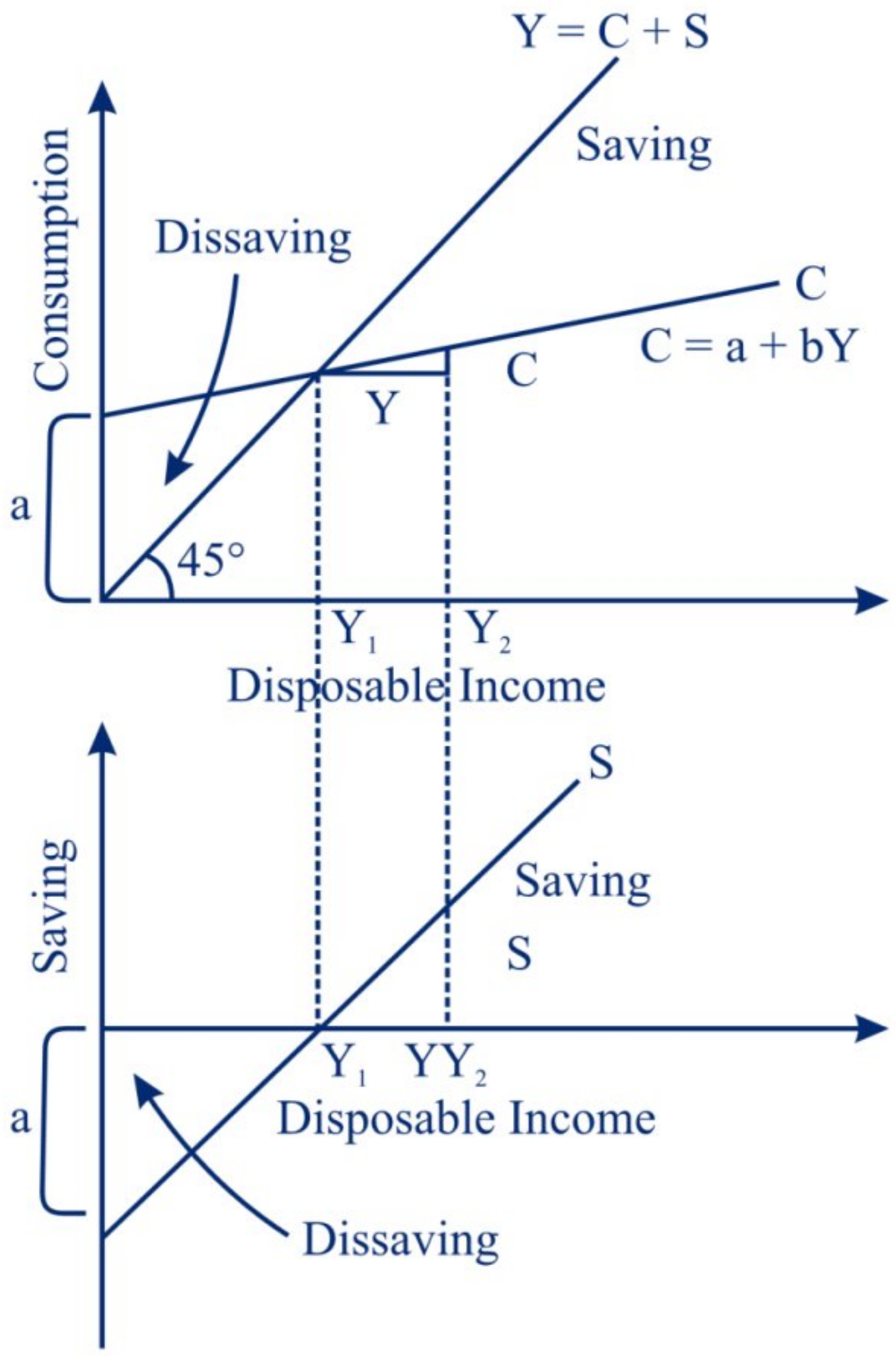


Fig- The consumption and saving function

- At zero income, there is consumption, resulting in dissaving at the same magnitude.
- Slope of saving function = MPS (marginal propensity to save)

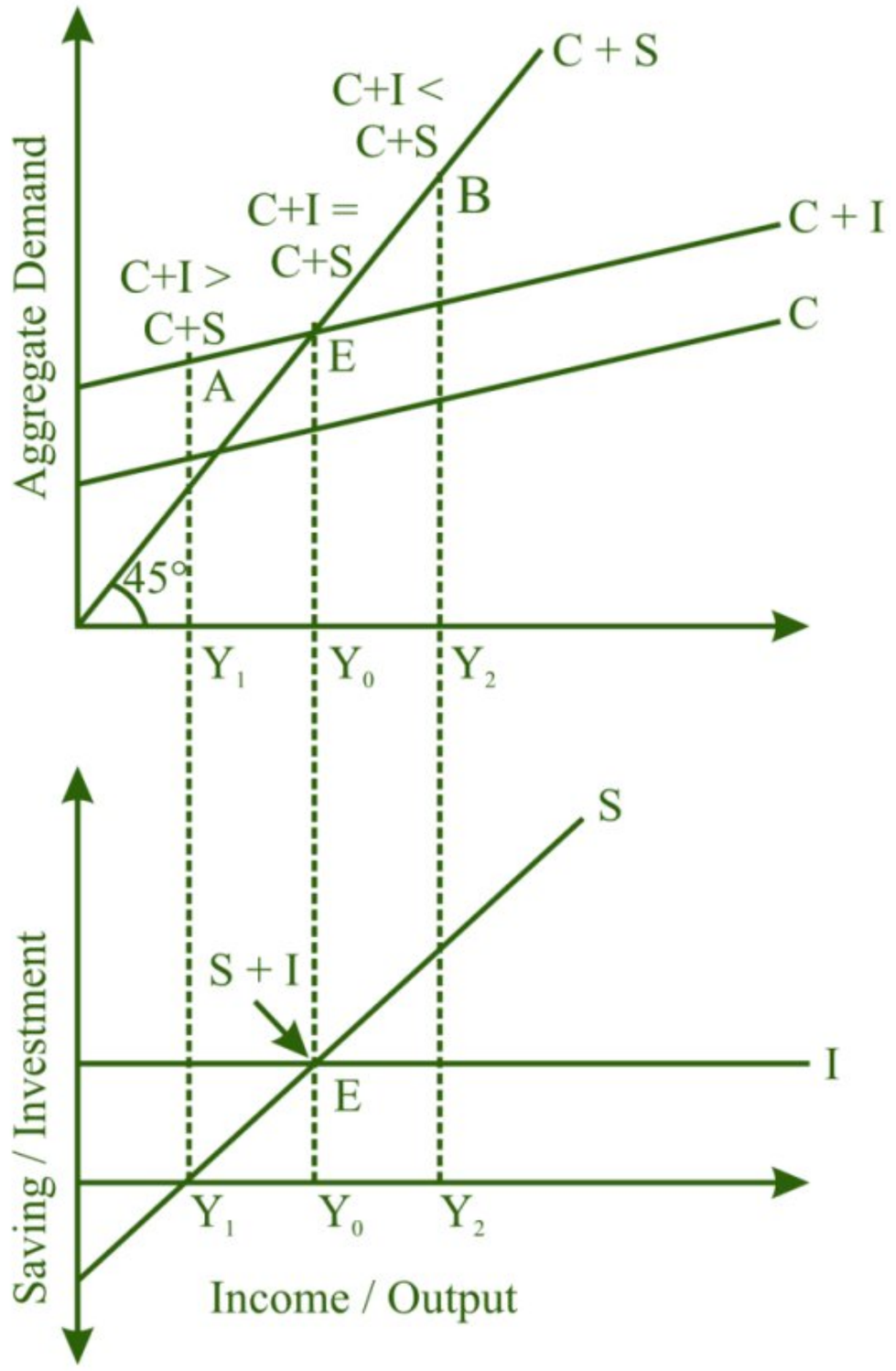
- $0 < MPS < 1$
- $MPC + MPS = 1$

Average Propensity To Save (APS)

$$APS = \frac{\text{Total Saving}}{\text{Total Income}} = \frac{S}{Y}$$

TWO – Sector Model of National Income Determination:

- Its model of determination of equilibrium level of output using AD function and AS function.
- The AD curve is linear and positively sloped (National income rises, AD also increases).
- Aggregate expenditure line is flatter than 45° lines as consumption inc. with increase in income.



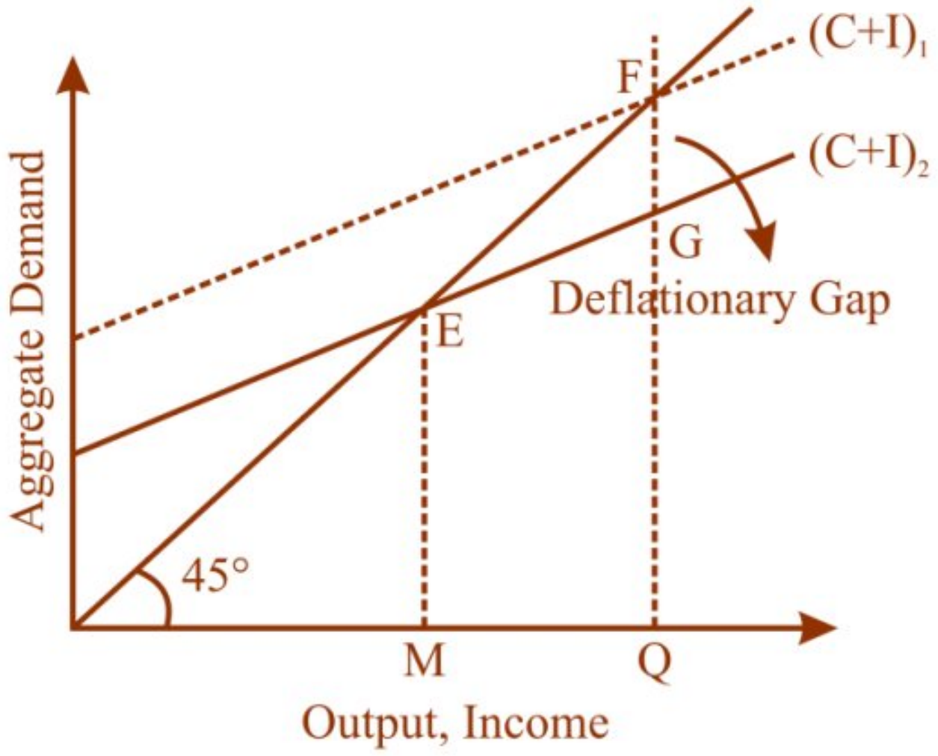
Determination of Equilibrium income: 2 sector model

- 45° line: Planned aggregate expenditure = aggregate output signifying equilibrium income levels.
- Points below 45° line = Planned aggregate expenditure > GDP
- Points above 45° line = Planned aggregate expenditure < GDP.
- Equilibrium occurs at potential GDP (full employment), AD = Output.
- Equilibrium is achieved when, planned investment = Savings.

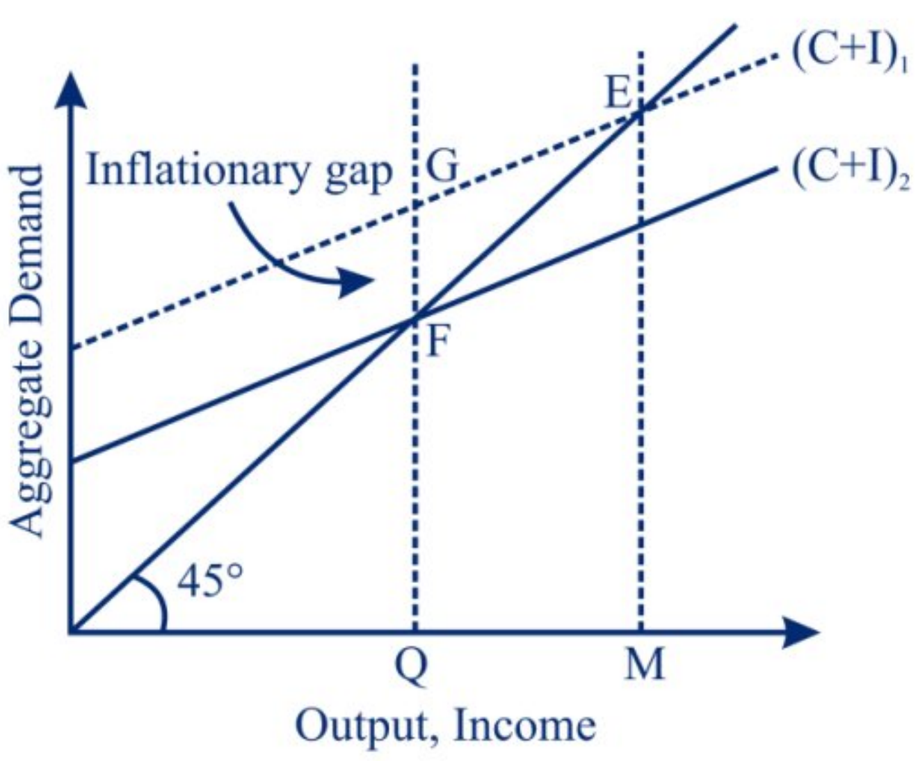
- **Equilibrium with Unemployment and Inflation :**

  Keynesian equilibrium may not necessarily occur at full employment, it occurs when planned aggregate expenditure equals output, which may or may not equal to potential GDP.

- **Deflationary GAP**
  - AD for an output < full employment of output, this causes a deficient demand.
  - Deficient demand gives rise to 'deflationary gap' or 'recessionary gap' or 'contractionary gap'.
  - This occurs when the economy is in a business cycle or recession.



- **Inflationary GAP**
  - AD > AS corresponding to full employment levels of output in the economy.
  - It is the excess of anticipated expenditure over the value of full employment output.
  - Inflationary gap – A gap by which actual AD exceeds the AD required to establish full employment equilibrium.



F = Economy at full employment equilibrium

OQ = Full employment output and income

FG = Inflationary gap

Investment Multiplier (K)

It expresses the relationship b/w an initial increase in investment and the resulting increase in aggregate income.

$$K = \frac{\Delta Y}{\Delta I}$$

Eg- Additional Investment = ₹ 2,000 Cr.

Additional Income = ₹ 6,000 Cr.

Value of multiplier = 6,000/2,000 = 3

Multiplier and MPC

- Direct relationship b/w multiplier and MPC.
- Inc. in MPC – Inc. multiplier (vice versa).
- Concept – One person's expenditure is others income.

$$K = \frac{1}{1-MPC} = \frac{1}{MPS} = \frac{\Delta Y}{\Delta I}$$

- Maximum value of multiplier = Infinity and Minimum value of multiplier = 1
- The Keynesian theory explains how shifts in investment triggers changes in both investment and consumption throughout economy.
- In underdeveloped countries, MPC is high, multiplier is Low (Structural inadequacies).

Determination of National Income

Three Sector Economy :

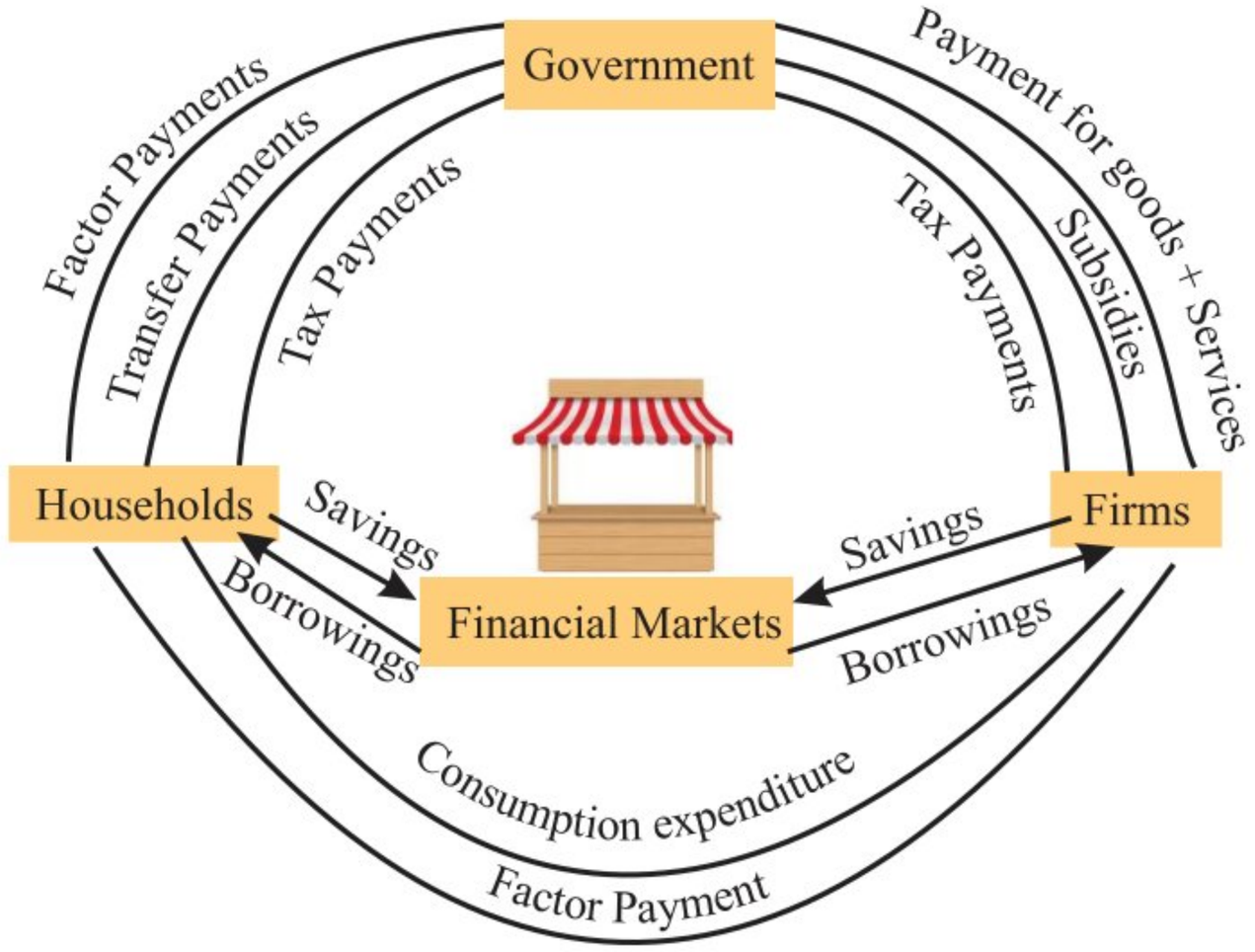
- Household + Business + Government Sector
- AD = C + I + G
- AS = C + S + T

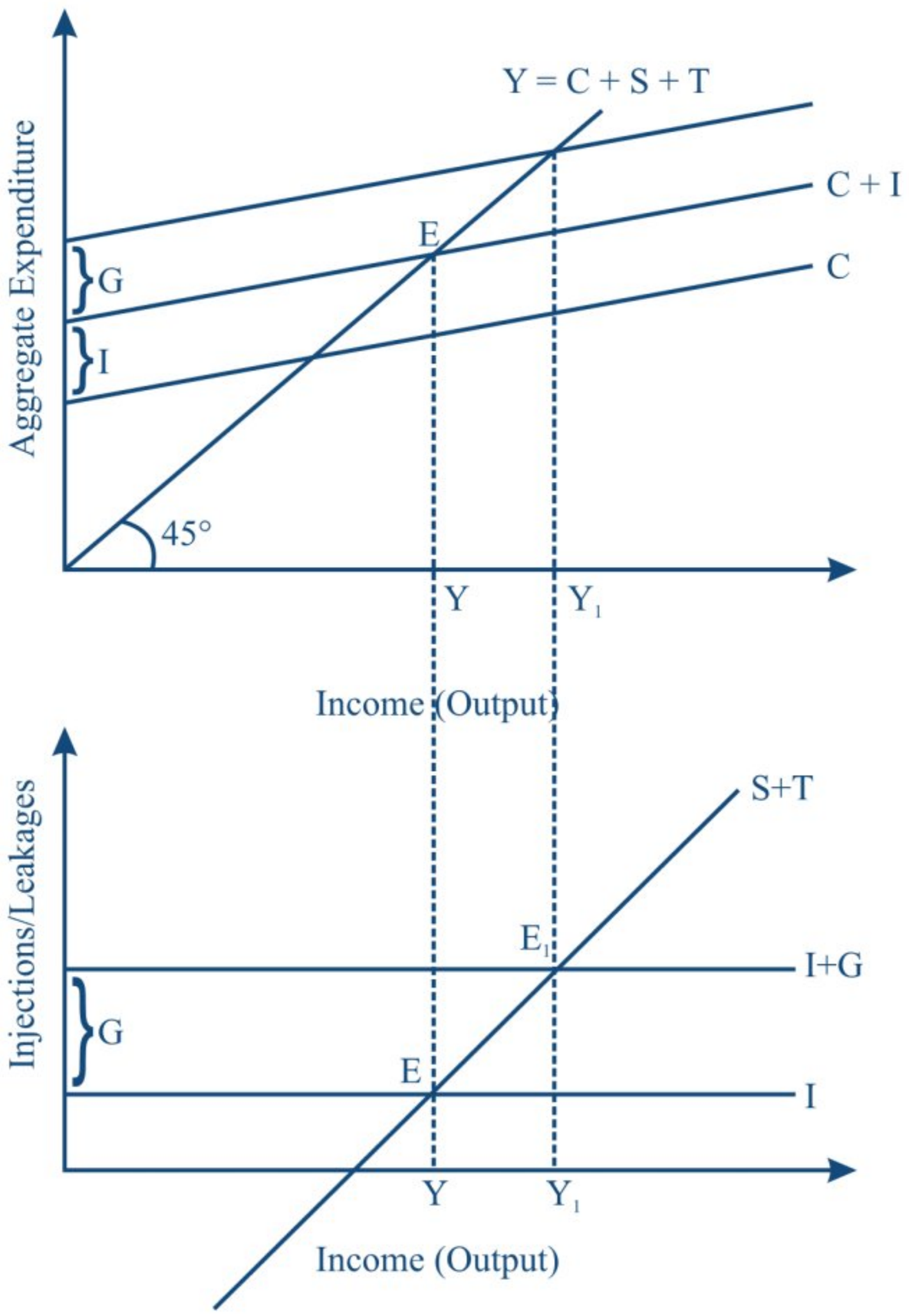
- Equilibrium is achieved when –

AD = AS

or

I + G = S + T





- AD = Income (at equilibrium point)
- Points- Below equilibrium: AD > AS

  Above equilibrium: AD < AS

The Government Sector and Income Determination :

Government influences level of income (taxes, transfer payments, government purchases etc.)

Income Determination with Lump Sum Taxes :

Lump sum taxes i.e., taxes that do not depend on income, has balanced budget.

$$G = T$$

There are no transfer payments.

Consumption function can be expressed as following

$$C = a + bYd$$

When, $Yd = Y - T$

$$Y = a + b(Y-T) + I + G$$

$$Y = \frac{1}{1-b}(a - bT + I + G)$$

Income Determination with Lump Sum Taxes and Transfer Payments :

Consumption function – $C = a + bYd$

$$Yd = Y - T + TR$$

$$C = a + b(Y - T + TR)$$

$Y = a + b(Y - T + TR) + I + G$ [T = Lump sum tax TR autonomous transfer payments]

$$Y(1 - b) = a - bT + bTR + I + G$$

$$Y = \frac{1}{1-b}(a - bT + bTR + I + G)$$

Income Determination with Tax as a Function of Income

Tax function $T = \bar{T} + tY$

$\bar{T}$ = Autonomous constant tax

t = Income tax rate

T = Total tax.

$$Y = C + I + G$$

$$Y = a + bYd + I + G$$

$$Y = a + b\,(Y - \bar{T} - tY) + I + G$$

$$Y = a + bY - b\bar{T} - btY + I + G$$

$$Y - bY + btY = a - b\bar{T} + I + G$$

$$Y(1 - b - bt) = a - b\bar{T} + I + G$$

$$Y = \frac{1}{1-b(1-t)}\,(a - b\bar{T} + I + G)$$

Investment multiplier

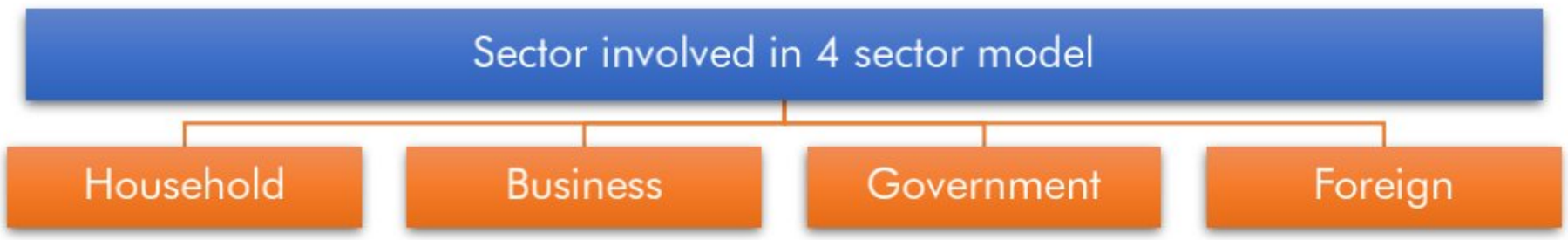
- Income Determination with Taxes as a function of income, Govt. Expenditure and Transfer Paymeents

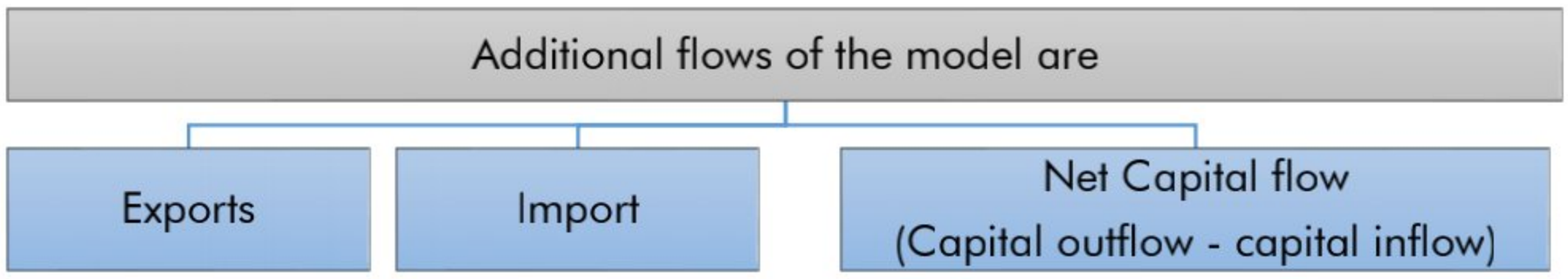
$$C = a + b(Y - \bar{T} - tY + TR)$$

$$Y = a + b(Y - \bar{T} - tY + TR) + I + G$$

$$Y = \frac{1}{1-b(1-t)}\,(a - b\bar{T} + bTR + I + G)$$

- Determination of Equilibrium Income – 4 Sector Model :





- Four Sector Model
  - Household + Business + Government + Foreign Sector
  - AD = C + I + G + (X – M)
  - AS = C + S + T

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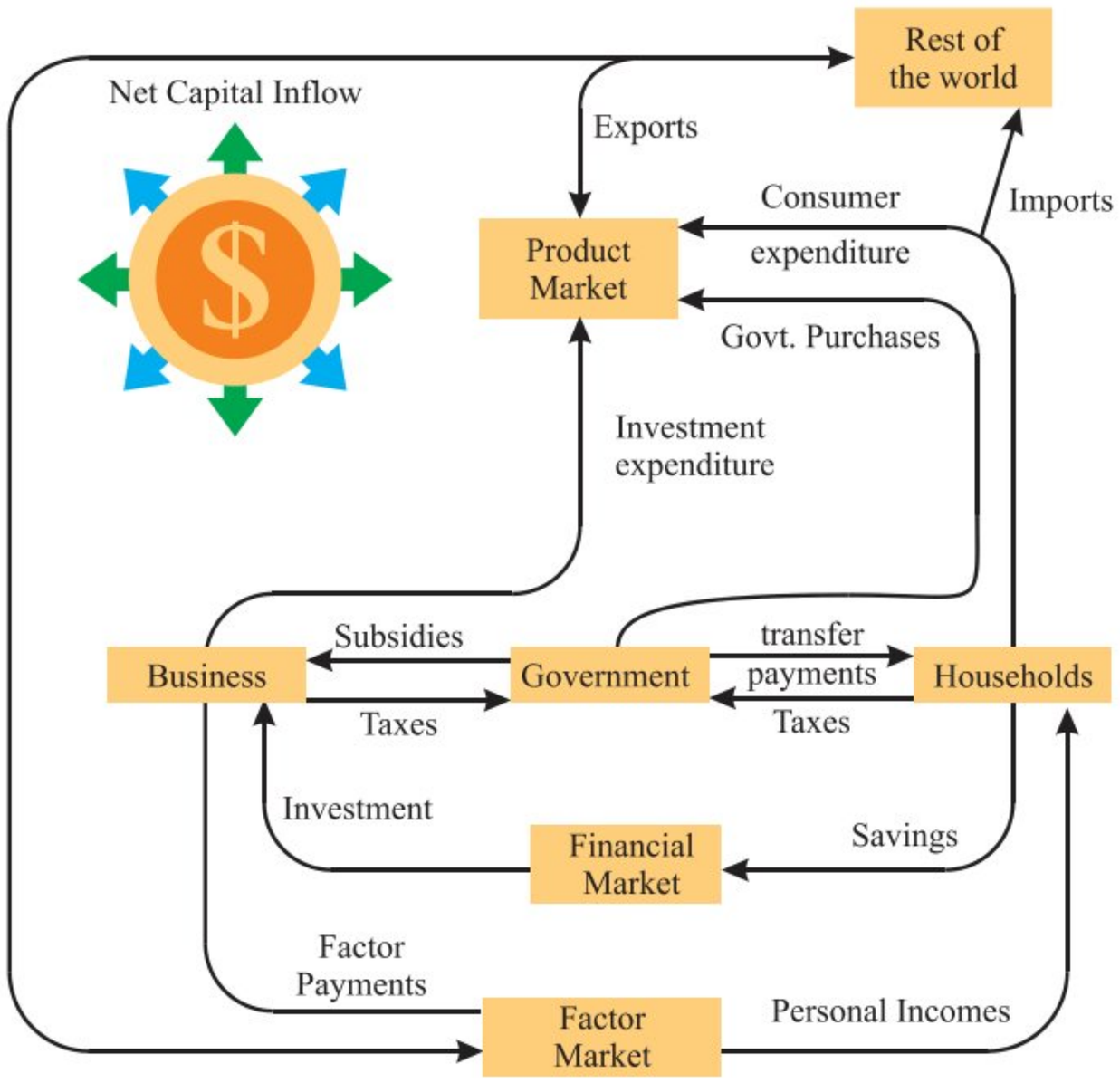
- Equilibrium is achieved when –

AD = AS

or

I + G + X = S + T + M



Demand for exports-

1. Depends on foreign income.
2. Exogenously determined.
3. Autonomous.

- demand for imports -

Depends on marginal propensity to import, i.e., increase in import demand per unit increase in GDP.

- $\bar{M}$ = Autonomous import.
- m = marginal propensity to import.
- Y = Income

- **Equilibrium condition -**

$$Y = C + I + G + (X - M)$$

$$C = a + b(Y = \bar{I})$$

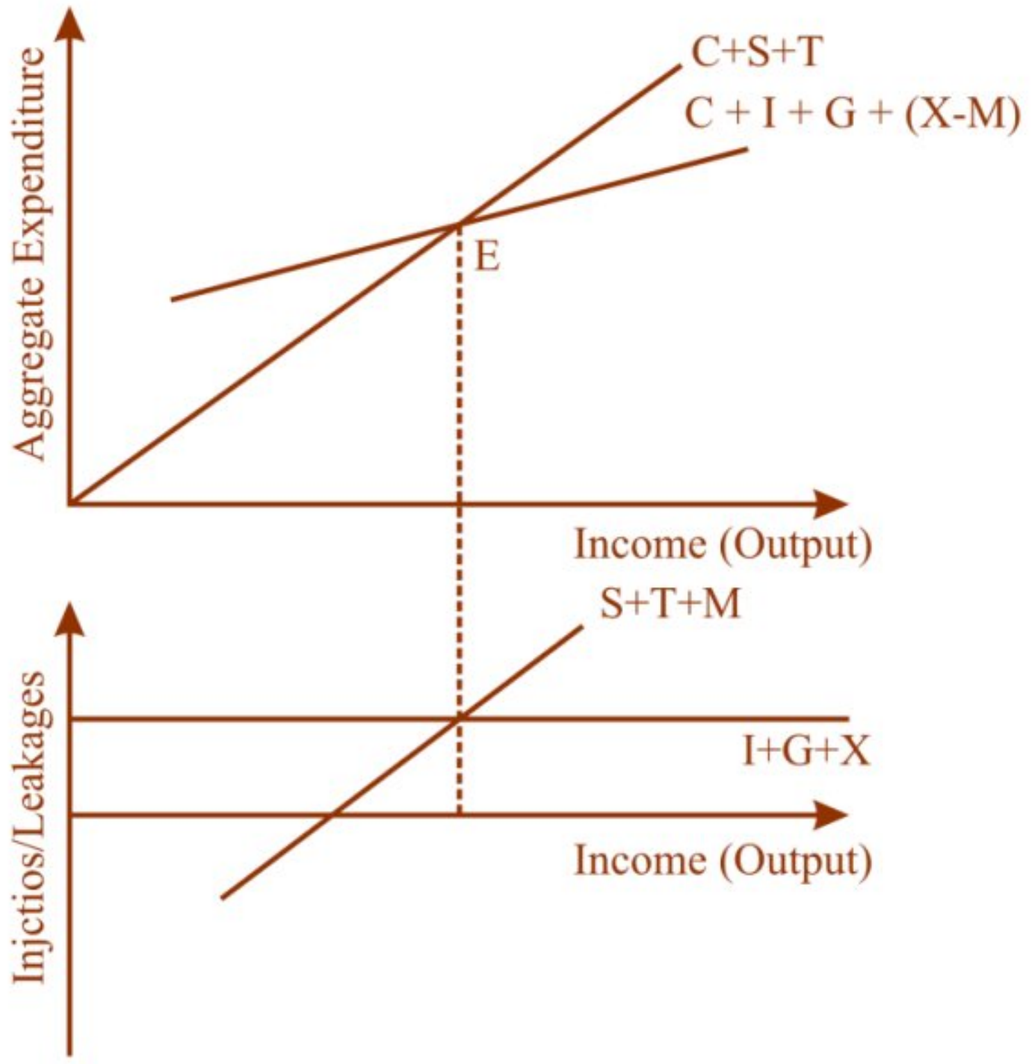
$$M = \bar{M} + mY$$

- **Equilibrium level of National Income-**

$$Y = C + I + G + (X - M)$$

$$Y = a + b(Y - T) + I + G + X = \bar{M}$$

$$Y = \frac{1}{1-b+m}(a - bT + I + G + X - \bar{M})$$



Leakages = S + T + M; Injections = I + G + X

INJECTIONS	LEAKAGES
X > M	X < M
Exports are positive	Net withdrawal
Income increases	Income decreases

LEAKAGE and INJECTIONS IN DIFFERENT SECTORS

- Leakage- It is referred to as an outflow of income from the circular flow model. Leakages are that part of the income which is not used to purchase goods or what households withdraws.
  - In 2 sector Model: Leakages = Savings
  - In 3 sector Model: Leakages = Savings + Taxes
  - In 4 sector Model: Leakages = Savings + Taxes + Imports
- Injection- It is an inflow of income to the circular flow. Due to injection, the volume of income increases.
  - In 2 sector Model: Injection = Investment
  - In 3 sector Model: Injection = Investment + Govt. Exp.
  - In 4 sector Model: Injection = Investment + Govt. Exp. + Exports

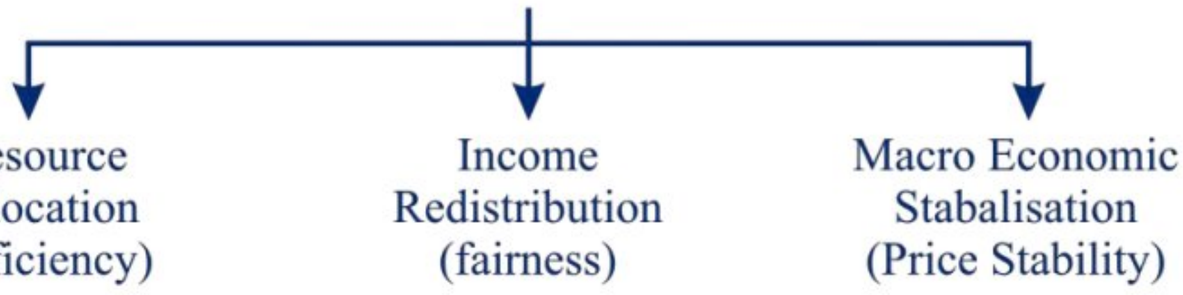
CHAPTER – 7 : Public Finance

UNIT-1 : Fiscal Functions: An Overview, Centre and State Finance

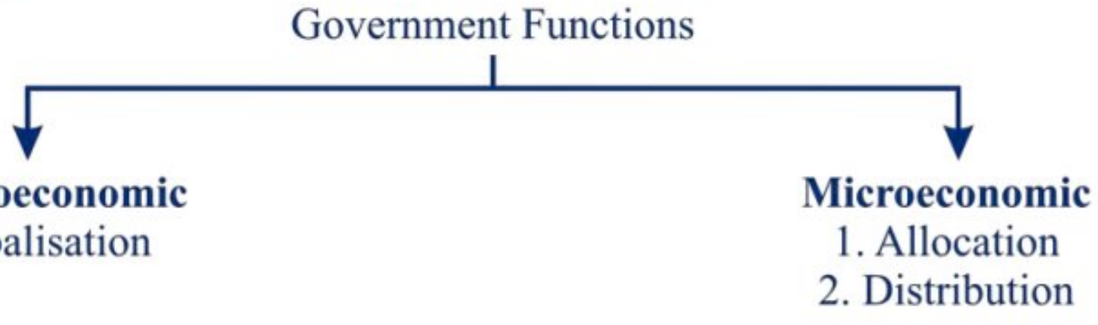
There are three main macroeconomic goals for any nation.

1. economic growth.
2. high levels of employment.
3. stable price levels.

- Adam Smith advocates limited govt. role
  1. Defense (national)
  2. Justice system
  3. Public infrastructure like railway etc.
- Richard Musgrave, in his classic treatise 'The Theory of Public Finance' (1959), introduced the three-branch taxonomy of the role of government in a market economy.



- Central govt's functions : Economic stabilization & Income redistribution
- State govt & Local govt's functions : Resources allocation



Allocation Function

- Distribution of limited resources among various uses
- Determines goods and services produced in economy
- Challenge - addressing unlimited wants with limited resources

Economic Efficiency

Seeks	using resources optimally, minimizing wastage & inefficiency
Ensures	allocation benefits each person
Private sector	allocation relies on market supply, demand, prices, consumer sovereignty & profit motive
Govt's role	budgeting activities

- Market Failure- it is a situation where goods are either under provided or over provided

  (1) Private goods are sufficiently provided whereas public & merit goods are not provided sufficiently

  (2) Missing markets or non-existent markets is common

- Causes of Market Failure

Imperfect Competition	Varying degrees of monopoly power leading to low production and high prices.
Public Goods	Markets fail to provide collective public goods (e.g., defense), consumed by all.
Incomplete Markets	Underproduction of merit goods (e.g., education and health care).
Resources	Overuse and exhaustion of resources like the environment for self-interest.
Externalities	-ve effects caused by production/ consumption affecting third parties
Immobility	Causes unemployment and inefficiency.

- Govt. Intervention

  To connect, efficient resource allocation, social welfare

  - Examples of Govt. Intervention
    - Property rights establishment
    - Addressing externalities
    - Providing merit goods
    - Controlling demerit goods
    - Stability of market system

- Govt. Policy for Resource Allocation

Expense	Tax policy	deciding who is taxed	govt. spending	mix of social goods

- Instruments for Resource Allocation (allocation instruments)
  - direct production (economic goods, e.g. electricity)
  - price mechanism may be used by the govt.
  - legislation like ban of single use plastic
  - competition & merger policies
  - regulatory activities like licensing, minimum wages etc.
  - legal & administrative frameworks

- Redistribution Function
  - govt's intervention for fair redistribution (income & wealth)
  - It is related to 'for whom' to produce in an economy

- Aims
  - Distribution: Equitable distribution of societal output among households
  - Welfare: Social welfare enhancements
  - Wellbeing: Improve wellbeing of deprivation (of varied types) facing individuals
  - Standard of living: Promote income, wealth & opportunities equality, security & standard of living

- Example
  1. Taxation policies- progressive taxation of rich & provision of subsidy to poor households
  2. Proceeds from progressive taxes used for financing public services that benefit low-income households
  3. Employment reservations & preferences to protect certain segments of population
  4. Unemployment benefits and transfer payments to provide support to deprived sectors
  5. Families below the poverty line are provided with monetary aid and aid in kind
  6. Regulation of manufacture and sale of certain products to ensure health and well-being
  7. Special schemes for backward regions & for vulnerable sections

- Stabalisation Function
  - Stability exists when economies
    - output matches production capacity
    - total spending matches total output
    - labour resources fully employed
    - inflation - low & stable

- Keynesian Theory
  - Market economy doesn't reach full employment and price stability alone, it needs govt. intervention
  - Market tendencies cause business cycles & without govt's intervention thus will be prolonged inflation & recession
  - Tools used by govt.
    - monetary policy, fiscal policy

Challenges

- Stagflation
- Contagion effect
- Prolonged inflation or recession
- unresolved economic disruptions caused by market fluctuation

Role of Fiscal and Monetary Policy

- Fiscal Policy: eliminates fluctuation through expenditure& taxation decisions
- Govt's expenditure: injects money in economy
- Taxes: reduce disposable income & effective demand

	Govt. Expenditure	Taxes
Recession	Increases	Decreases
Inflation	Decreases	Increases

Budget Surplus	Budget Deficient
Stimulates economic activity	Slows down economic activity

Conflicts

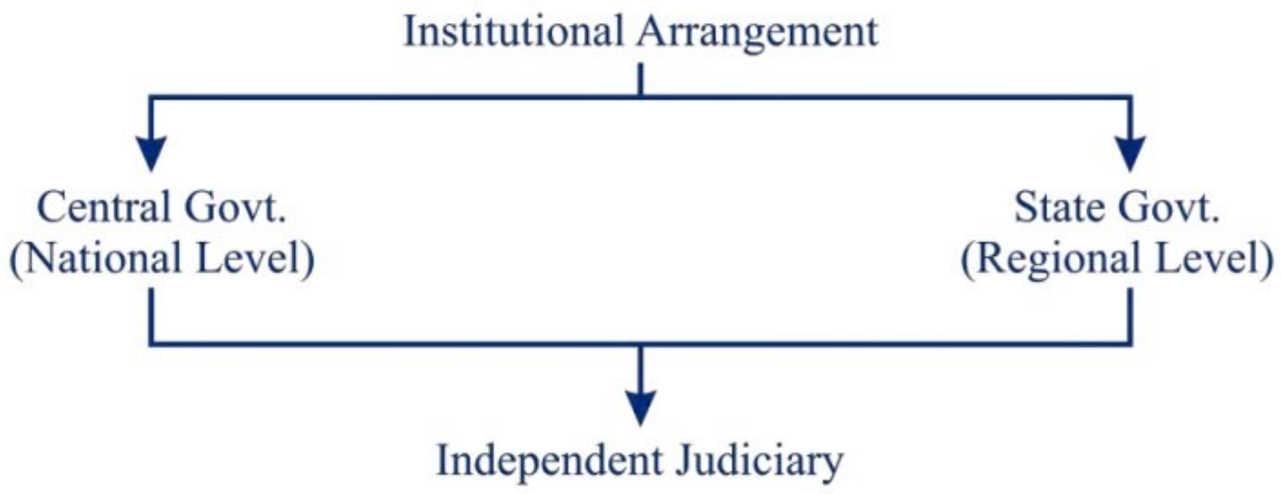
Conflicts among various goals & budgetary policy

- Effective policy designs: Balance multiple govt. objectives without jeopardizing one for the sake of others

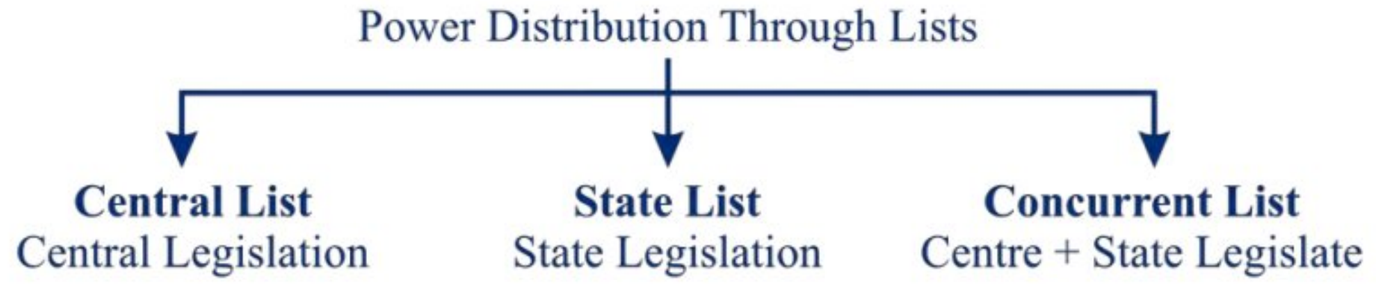
Center and State Finance

- Fiscal Federalism: (by Richard Musgrave) division of govt. functions and financial relations among diff levels of govt.
- Central govt's functions : Economic stabilization & Income redistribution
- State govt & Local govt's functions : Resources allocation

Federal Structure



- Federal Structure



In case of a conflicting legislation in concurrent list, decision of center prevails.

- Revenue Expenditure Allocation
  - It is crucial in federation
  - Distinct central & state revenue sources
  - Centre and state levy taxes
  - Center has greater revenue raising powers
    - ➢ Taxes income tax, central GST, etc.
  - State taxes: agriculture, electricity, mineral rights etc.

Article 268	Duties levied by the union but collected and appropriated by states.
Article 269	Taxes levied and collected by the union but assigned to the states.
Article 270	Surcharge on certain duties and taxes for purposes of the union
Article 271	Taxes levied and collected by union & distributed between union and states as prescribed in clause 2nd States.
Article 275	Statutory Grants - in-aid from the union to certain states.
Article 282	Grants for any public purpose
Article 293	Loans for any public purpose

- Finance Commission (Article 280)

  Facilitates transfer of resources (financial between center and state)

- Functions:
  - Tax sharing
  - Assessing finances
  - Grant distribution
  - Recommends President regarding financial decisions

- Criteria of Distribution of Center Taxes
  - Income distance
  - Area
  - Tax & Fiscal efforts
  - Population
  - Demographic performance
  - Forest & ecology

Fifteenth Finance Commission

- Formed November 2017
- Recommendation
  - ➢ state receive 41% of central taxes for 2021-2026
  - ➢ Additional 1% for newly formed UT's. Eg- J&K

Introduction of GST (1 July2017)

GST	Goods and Service Tax
SGST	State Goods and Service Tax
IGST	Integrated Goods and Service Tax
CGST	Central Goods and Service Tax

- Aim – consolidated indirect taxes

Supreme court verdict May 2022

- Union & state legislation has equal powers to make laws on GST, GST council recommendations are not binding

GST Compensation

- A fund was created to offset revenue losses for state
- It was implemented for 5 year but was extended for another 5 years to tide over pandemic induced economic slow down
- CESS was limited on some luxury & demerit goods, process of which are credited to compensation fund

Expenditure Decentralization

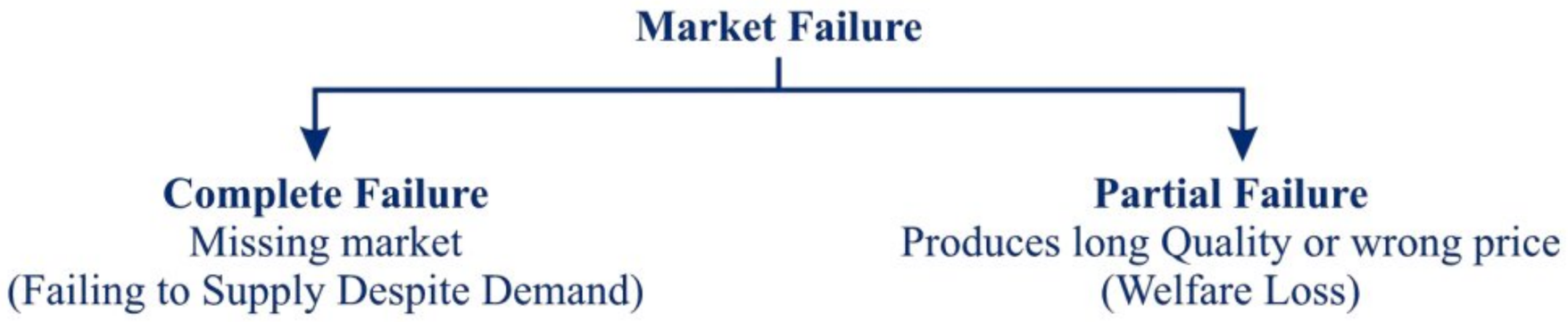
It assigns responsibilities

- **Central Govt.** Defense, forgein affairs etc
- **State Govt.** agriculture, social, services
- **Local Govt.** Public utilities

Borrowing (Article 292/293)	
Central Govt.	• within limit set by parliament • guarantee upon securities of consolidated funds of India
State Govt.	• within limits of state legislation • provide guarantee + obtaining center's consent in case of previous loan
Centre's Role in State Borrowing	• within limits fixed under Article 292 • give guarantees in respect of loans raised by the states

Unit – 2 : Market Failure

- **Concept of Market Failure**
  - Inefficient allocation of resources in an economy
  - It means the market is not functioning optimally (not that it isn't functioning at all)
  - Types of Market Failure



1. **Market Power**
   - It is monopoly power where Firm can profitably raise market price over its marginal cost.
   - firm acts as price maker.
   - Excess market powers cause one or less producer, restricting output.
   - Prices higher than what would prevail under perfect competition
   - Operating efficiency < Price domination
2. **Externalities**
   - Indirect effects of an individual's actions on others
   - Operates through price mechanism, causing price change
   - But if these changes do not reflect in market prices, it results in externalities.
   - Other names: Spillover effect, neighborhood effects, third party effects' or side-effects

- Production Externalities

Negative Production externalities	Positive Production externalities
Imposes external cost on others.	Confers external benefit on others
No incentive to account for external cost of decision making.	External factors not considered for production decision
Uninternalized costs not reflecting in product price.	Uninternalized benefits not factorial into production choices
Eg – pollution affecting fish output, reducing cath for fisherman.	Eg – individual creating attractive garden, benefits passers-by.

- Consumption Externalities

Indirect affects of an individual's consumption action on others

Negative Consumption externalities	Positive Consumption externalities
Produces external cost on others.	Confers external benefit for others
Eg – smoking in public places causing passive smoking/litter	Eg – immunization against contagious diseases preventing others from infection.

- Effect of Externalities on Efficiency and Market Failure

Private Cost	• Money cost of production incurred by firm • Eg – wages, raw materials etc
External Costs	• These are not included in firm's income statement or consumer decisions, although they are important for society
Social Cost	• Total cost to society • Social Cost= Private Cost + External cost

3. Public Goods

- Product enjoyed collectively one person's consumption first substance from others consumption
- Others names: collective consumption goods, social goods

Private Goods	• Scarce goods that must be purchased for consumption • Excludable: prevent consumers to use without paying for it fixtures Eg - cars, food, etc
Public Goods	• Consumption or social goods that can be used freely in common sense. Characteristics • non rival in consumption (eg- parks) • non excludable • Indivisibility (TC same for each individual)

- Market Failure in Public Goods
  - Free rider problem: Tendency of individuals to benefit from public goods without contributing to their costs
  - Profit maximizing firms: Firms produce socially optimal amounts only if they change a +ve price for it.
  - Under-production: Public goods are either not produced at all or less, causing market failure.

4. Incomplete Information
   - Complete information is crucial for competitive
   - market and helps buyers & sellers in decision making
   - Challenges - Real market
   - complexity of products + services
   - difficulty in gathering correct info.
   - deliberate misinformation (advertisement)

- Asymmetric Information
  - Imbalance of information b/w buyer and seller i.e. when the buyer knows more than the seller or the seller knows more than the buyer.
    Eg – second hand car market, landlords and tenants
  - Asymmetric Information leads to adverse selection and moral hazard

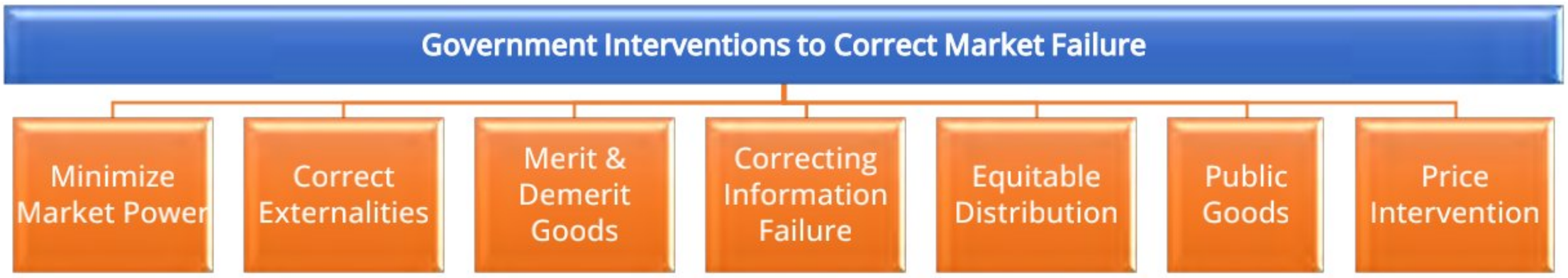
- Adverse Selection (sellers knows more than buyer)
  - Asymmetric information causes adverse selection, hence impacting transaction
  - Health insurance companies could offer low premium
  - To low risk buyers, due to asymmetrical information
  - People with higher risk are preferred by insurance company.

- Lemon Problem (in used car markets)

- Adverse Selection causes Market Failure
  - elimination of high quality cars
  - economic agents choose sub-quality goods or leave the market
  - low quality cars dominates the market

- Moral Hazard (buyer knows more than seller)
  - It arises when economic agents shift some of its cost to others
  - It takes advantage of less-informed person
    Eg - Insurance market leads to increased risk taking by policy holders, causing inefficiency & distrust.

- Hence making governing intervention crucial to combat market failure by :
  - ➢ legal and regulatory framework
  - ➢ infrastructure. Eg. roads, airport etc
  - ➢ enforcing competition
  - ➢ consumer protection law



- Govt. Intervention - Minimize Market Power

  Indian competition act 2002 (amended in 2007) promotes and sustains market competition.

  Methods
  - Market liberalization (competition in monopolistic sectors Eg- telecom etc)
  - Controls on merger & acquisition (to avoid market domination)
  - Price capping and regulation
  - Profit on rate of return regulation
  - patronage to consumer association
  - restriction on Monopoly powers of firm
  - investigate unfair practices
  - reduction in impact controls
  - nationalism

- Moral Hazard
  - It arises when economic agents shift some of its cost to others
  - It takes advantage of less-informed person

    Eg – Insurance market leads to increased risk taking by policy holders, cussing inefficiency and distrust.
  - Hence making governing intervention crucial to combat market failure by:
    - ➢ legal and regulatory framework
    - ➢ infrastructure. Eg roads, airport etc
    - ➢ enforcing competition
    - ➢ consumer protection law

Govt. Intervention - Correct Externalities

Towards negative externalities

- Direct control or regulation (actions on source of negative externalities) - prohibits specific activities creating -ve externalities. Eg-
  - ➢ Smoking banned in many places
  - ➢ Production, use and sale of many commodities
- Market based policies -
  - ➢ Pollution taxes
  - ➢ Cap and trade system (limits total emission & permits tradables)
  - ➢ Govt, schemes and mechanisms

Towards positive externalities

- Corrective subsidies to consumers and producers
- Direct govt. production: goods and services with significant +ve externalities, govt. directly enters market as producers, Eg – Health

Govt. Intervention in Public Goods

Public Goods	1. Some Public Goods are provided only by the government. Examples: Defense, fire protection, Legal system Atomic Energy, Nuclear Power Facility, Security at Airports, etc. 2. For Public Goods where Entry Fees can be charged (Excludable Public Goods), the Government can- (a) Itself provide such Goods, and charge Entry Fees (which can be used to finance the cost of providing such Goods), (b) Grant Licenses to Private Firms to build a public good facility, and (c) Setting Maximum Prices of Foodgrains during times of scarcity, (d) Government Procurement and stocking of Foodgrains to stabilize prices and Consumption.

Govt. Intervention in case of Demerit Goods

- Demerit Goods - (a) are socially undesirable, (b) involve high negative externalities in their consumption.
- Examples: Tobacco, Cigarettes, Alcohol, Intoxicating Drugs, Narcotic Substances, etc.

- Measures are below-
  1. Complete Prohibition/ban
  2. Persuasion: Negative Advertising Campaigns which emphasize the dangers associated with consumption of Demerit Goods, are launched to provide information to Consumers, and persuade them to reduce or avoid the consumption, e.g. Cigarettes.
  3. No Promotion: Govt. may prohibit the Advertising or Promotion of Demerit Goods in whatsoever manner.
  4. Time & Space Restrictions:
  5. Higher Tax Rates:
  6. Price Controls:

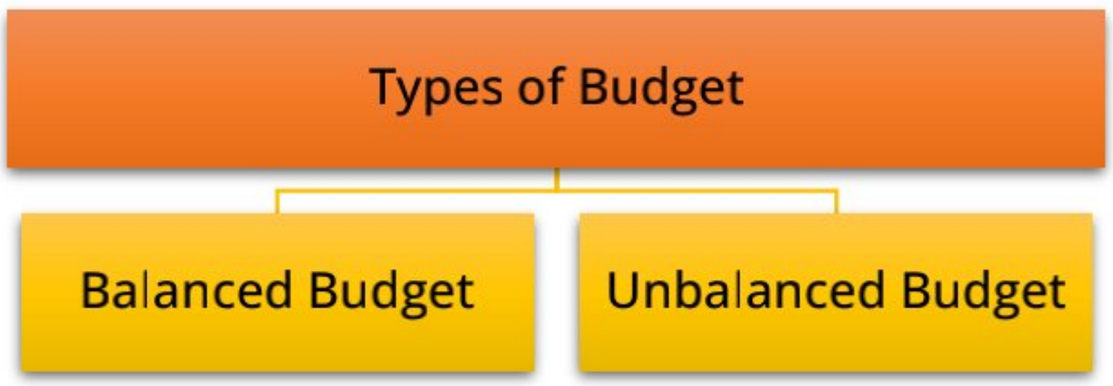
Govt. Intervention

Non-Market Pricing	• Price flooring (minimum price) • Ceiling price (maximum price) • Minimum wages, rent controls • Minimum Support Price (MSP) for steady and assured income, govt. intervenes in agriculture crop pricing
Information failure	• Mandatory labeling/content disclosure • Disclosure of information • Public dissemination (spreading) goods • Regulation of advertisement
Inequitable Distribution	• Redistribution policy (progressive income taxation) • Combating block economy • Ensuring equity (e.g., land reforms)

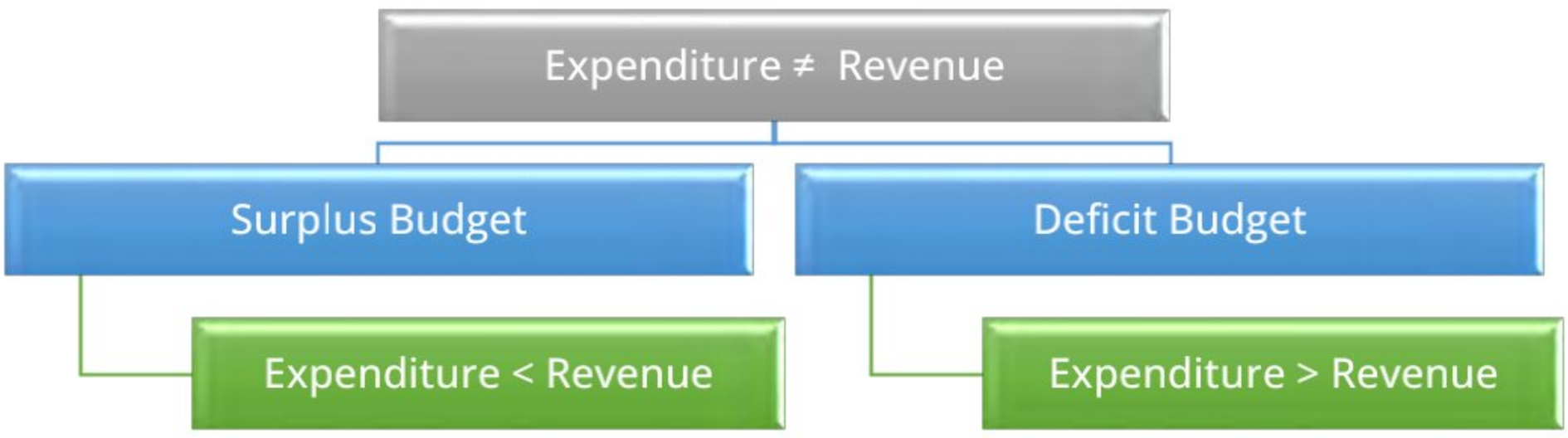
Unit – 3 : The Process Budget Making

Budget:– Budget is a powerful financial policy instrument. It involve estimated revenues and estimated receipts of govt. during a fiscal year.

The process of making budget is referred to as budgeting and the fact is that the term 'budget' has not been used in the Indian Constitution. Article 112 of the constitution gives Annual Financial Statement.



Exp = Revenue



Budget prepared by Ministry of finance +NITI Aayog+other relevant ministries.

Budget Division Sends budget circular

↓

Ministries, States, UT,

Asking detailed estimates of expenditure

↓

Suggestions on Budget

↓ MoF

There presented in LokSabha

↓

Budget Speech is 2 parts

↓

Part – A Present Macro-Economic Situation, estimates of next FY, expenditure allocations for different sectors and fresh schemes.

Part – B it includes details the progress the government has made on various developmental measures, the direction of future policies, Govt. tax proposals

+

Annual Financial Statements (AFS)

Contingency Fund, Public accounts

+

Documents → (i) AFS

(ii) Demand for grants (DG)

(iii) Finance Bill

(iv) Statements as per FRBM Act 2003

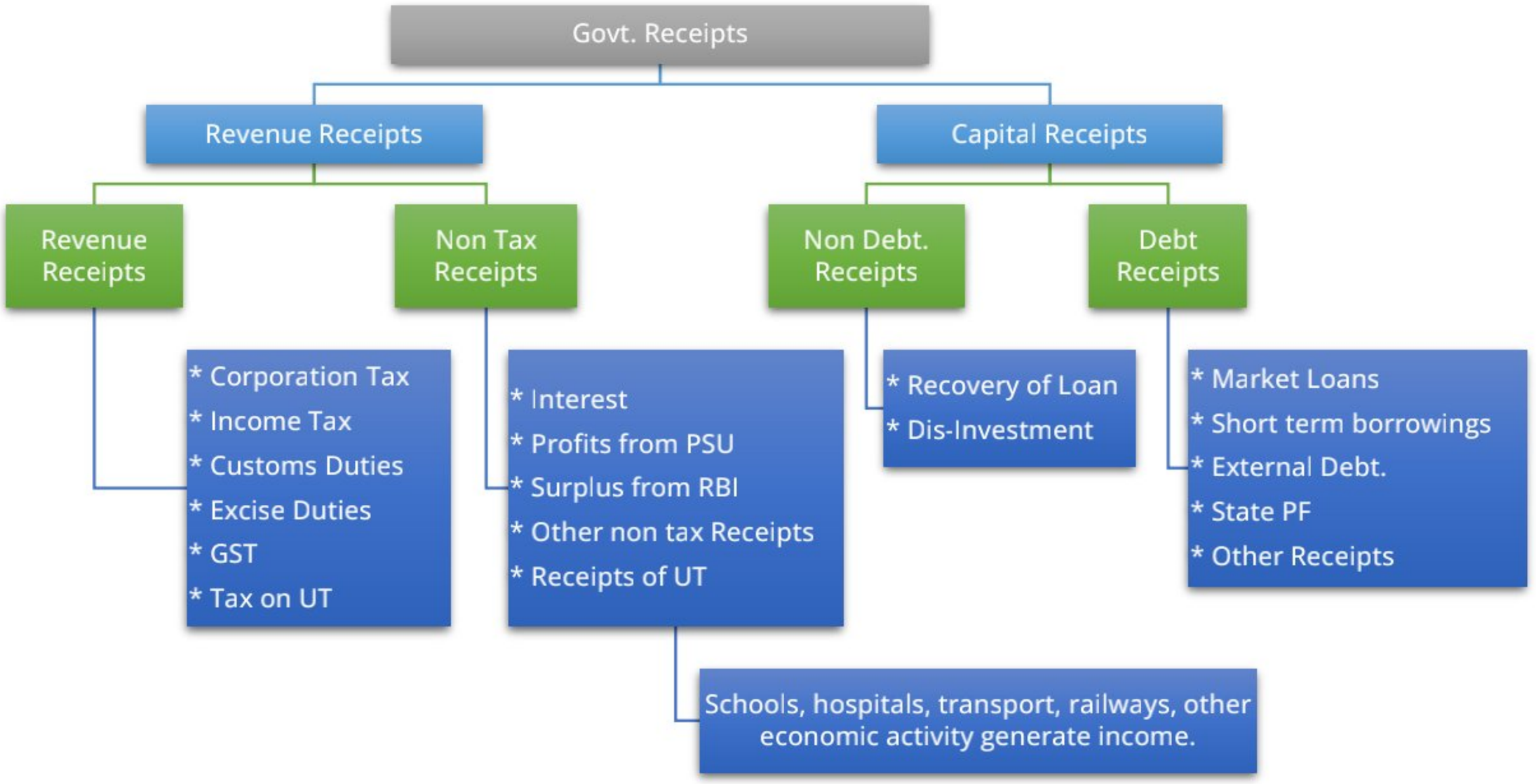
(a) Macro Economic Framework Statement

(b) Medium Term Fiscal Policy Cum Fiscal Policy Strategy Statements

(v) Nine other documents which are in the nature of explanatory statements supporting the mandated documents are also presented along with the documents mentioned above.

- Budget Discussions:
  - First there is discussion on General Budget and then parliament is adjourned for a fixed period.
  - During this period, demand for grants of various ministries are discussed by standing committees.

- After the reports on DG are submitted voting on DG takes place. In Lok Sabha.
- Lok Sabha can cut / reduce any demand for grants.
- Budget is presented in Rajya Sabha after Lok sabha.
  In Rajya Sabha general discussion on Budget is done and no voting of DG
- After budget discussions and voting of DG, Govt. Introduce the appropriation Bill. Appropriation Bill gives authority to govt. To make expenditure from CFI.
- Motions for reductions for DG are in the form of 'cut motions'
- After appropriation bill, Finance bill is taken up for consideration.
- Parliament has to pass the bill within 75 days of its introduction.
- Guillotine discussion on DG is put for voting only with specified time.
- After Loksabha Finance Bill Presented Rajya Sabha.
- Rajya Sabha has 14 days to return the money bill with or without recommendations.
- These recommendations may be accepted or rejected by LokSabha.
- Since 2017-18 Budget date has been advanced to 1st February.
- Also since 2017-18 Railway Budget was merged with General Budget.



Corporation Tax = Corporate Tax It is income tax paid by companies It is collected by union Govt.

- Capital Receipts = ↓ in assets
  ↑ in liability

  Eg. sale of asset. Disinvestment, recovery of loans etc.

- Revenue Receipt -

  They neither create any liability nor reduces assets of govt.

  Govt. has 2 sources of revenue receipts (i) Tax revenue, (ii) Non-Tax revenue.

- Revenue Expenditure Are required for
  (i) Normal functioning of Govt.
  (ii) Interest payment (on debt.)
  (iii) Payment of grants to states |UT| others

- Capital Expenditure = Expenditure which result in creation of assets or reduction of liability.

  Eg. Purchase of machinery, repayment of loans etc.

- Public Debt. Management (Debt ≡ Loans)
  - 2 types of govt. Debts
    (i) Internal debt. (Domestic debt)
    (ii) External debt.
  - Public Debt. Management is crucial to achieve macro economic stability.
  - Debt. Management is based on 3 pillars
    (i) Low lost of borrowing
    (ii) Risk Mitigation
    (iii) Market development
  - Domestic Debt. $\xrightarrow{\text{Managed by}}$ IDMD of RBI

    External Debt. $\xrightarrow{\text{Managed by}}$ Dept. of Economic Affairs in MoF.

    There is a PDMC under Dept. of Economic Affairs.

    IDMD = Internal Debt Management Dept.
  - Internal Debt. (from Public)

    Treasury Bills → Short Term Cash Requirements of Govt.

    Dated Securities → are issued to generate long term resources to finance fiscal deficit.

    Ways and means Advance (WMA) → RBI Short term credit upto 3 months → State Govt.

    ↓

    To meet temporary mismatches in cash flow.
  - External Debt → Loans from Asian Development Bank / International banks

    ↓ → Long term and fixed int rate

    Risk is Depreciation in value of domestic currency
  - RBI announced RBI Retail Facility on 5th Feb. 2021 to ↑ retail participation in G-Sec. (More investors through online access)

- G-Sec. = Govt. Securities

Outcome Budget - The outcome budget is a progress card on what various ministries and departments have done with the outlays in the previous annual budget.

Consolidated Fund of India - Money can be spent through this fund only if appropriated by the parliament.

Contingency Fund of India - Contingency fund enables the government to meet unforeseen expenditure and does not require prior legislative approval, unlike with the Consolidated Fund

Public Account - Under provisions of Article 266(1) of the Constitution of India, public account is used in relation to all the fund flows where government is acting as a banker. Examples include Provident Funds and Small Savings.

Deficit = Exp. – Income

Rev. Deficit = Rev. Exp – Rev. Income

Fiscal Deficit = Total Exp. – Total Receipts (Excluding Borrowing)

Fiscal Deficit = Rev. Exp + Cap Exp – [Rev. Receipts + Cap Receipts Excluding borrowings)

= Rev. Exp. – Rev. Receipt + Cap Exp. – Cup Receipts

= Rev. Deficit + Cap Exp. – Cap Receipt Excl Borrowing.

Fiscal deficit indicates governments borrowing requirement. It is indicated as % of GDP.

Primary Deficit = Fiscal Deficit – Interest Payment

Interest Payment means Debt Service payments.

Unit – 4 : Fiscal Policy

Objectives

- Achievements & maintenance of full employment
- Maintenance of price stability
- Acceleration of rate of economic development
- Equitable distribution of income & wealth

Fiscal policy's ability to influence output by affecting aggregate demand makes it potential tool for economic stabilization

Types of Fiscal Policy

(i) Expansionary Fiscal Policy

(ii) Contractional Fiscal Policy

Expansionary Fiscal Policy

Objective

- To increase AD
- To stimulate economy during contractionary phase of business cycle.

"Demand Deficient/recession occurs when –

(1) Falling real GDP

(2) Low aggregate demand

(3) Reduced consumer spending

(4) Rising Unemployment

Measures:

- Tax cuts – increase purchasing power – increase in AD
- Decrease in Govt. expenditure

Impact

- May lead to budget deficit because tax cut reduce govt. income and expenditure exceeds tax revenues

Contractionary Fiscal Policy

Objective

- Reduces AD
- Restrain economic activity during inflationary phase or anticipation of business cycle expansion likely to induce inflation.

Implemented phase

- Economy has high growth rates
- Inflation
- Asset Bubbles

Measures

- Decrease in Govt. Spending
- Increase in Taxes

(1) Govt. Expenditure

Govt. expenditure Includes

- Revenue expenditure
- Capital expenditure

(2) Taxes

Most significant revenue source for government used to establish economic stability.

During Recession	After Recession
• Income tax reduction and low corporate tax • Disposable income	• Increase tax rates reduce disposable income

(3) Public Debt.

(i) Internal Debt. (Borrowed from own people)

(ii) External Debt. (Borrowed from other sources)

Public debt can be categorized in 2 broad categories

(1) Market Loans – Treasury bills, Govt. loans

(2) Small Savings – Non Negotiable, not traded

Impact

- Borrowing curtails aggregate demand
- Debt repayment inc. money available, boosting AD

(4) Budget

(1) Balanced - No net effect on AD

(2) Surplus - May have -ve effect on AD

(3) Deficit - +ve effect on AD

■ Fiscal Policy for Long Run

Important for sustainable development

- Incentive effect of fiscal policy:

Infrastructure Spending	• +ve supply side effects • happens when govt. interests in infrastructure • provides necessary overhead for private sector
Public Goods Provision	• Enhances human capital formation, physical capital becomes more productive • Eg – healthcare, education, etc
Tax impacts	• can have +ve or –ve effect • depends on its encouragement for savings/investment
Well Designed Tax Policies	• Rewards innovation & entrepreneurship • Does not discourage incentives • Promote private investment in business
Market Failure Correction	• Tax & spending policies corrects market failure • environment taxes (cost of firm, output) • Subsidies - boost output

- Fiscal Policy for Reduction in Inequalities of Income and Wealth
  - Progressive Direct Tax System: greater ability to pay higher taxes, tax burden is equally distributed
  - Differential Indirect Tax System: luxury goods taxes and necessities taxed
  - Planned Expenditure: redirects income from rich to poor through target spending programs.
    Eg. poverty - alleviation program

- Challenges
  - Progressive Tax- shouldn't discourage work, savings & investment
  - Redistribution Policy - shouldn't be generous enough to reduce incentives to work and save

- Limitations of Fiscal Policy

Types of Lags in Fiscal Policies:

Recognition lag	• lag in recognizing need for policy change due to complex economic variable & data collection challenge
Decision lag	• lag in evaluating alternative policies
Implementation lag	• bureaucratic delays in enacting & implementation
Impact lag	• outcomes are not visible for a time

- Bad Timing: Poorly timed changes in fiscal policy, due to lags, can cause initiation of expansionary policy at the time of economy recovery
- Policy change: Instant policy change not possible
- Expenditure: like defense & on going capital projects are hard to alter
- Disincentives: Supply side economists concern over certain fiscal measures causing disincentives
- Inflation: Deficit financing purchasing power of people. (leads to inflation/price spiraling)
- Govt. borrowings: creates a burden on future generations as debt
- If govt. borrowing to compete with private sector, cause rise in interest rates, reduced private sector investment, etc.

Crowding Out (here fiscal policy becomes ineffective)

Increased govt. spending can replace private spending, diminishing the effectiveness of expansionary fiscal policy

Fiscal Policy effects	• if govt. spending substitutes private spending, it reduces impact on AD
Ineffective Fiscal Policy	• govt's deficit spending during recession leads to borrowing, rising interest rates and crowding out private investors
Growth implication	• crowding out weakens long term economic growth prospects by reduced private sector investment
Exception	• deep recessions may limit crowding out as investments (private sector) are already low, allowing govt. borrowing without rise in interest rates

CHAPTER – 8 : Money Market

UNIT-1 : The Concept of Money Demand

Theories of Demand for Money

- **1. Classical Approach: Quantity Theory – Money (QTM)**

This theory was given By - Irving Fisher (Yale University)

Book - The Purchasing Power of Money, Published- 1911

- **As per this theory**
  - money is demanded only for transaction purpose
  - There is a relationship b/w money & price level i.e. quantity of money mainly determines the price levels , income & interest rates ,
- **equation**
- Supply of money = Demand of money

$$MV = PT$$

M = Total amount of money in circulation

V = Transaction velocity of circulation

P = Average price level

V = Total no. of transaction

- Extension of earlier equation when credit money is considered

$$MV + M'V' = PT$$

- M' = Total quantity of credit money
- V' = Velocity of circulation credit money
- PT = denotes demand of money
- T remains fixed in short run due to full employment
- There is aggregate demand of money for transaction purpose
- More no. of transactions, greater demand for money

- **2. The Cambridge Approach**

By - Alfred Marshall, A.C. Pigou, D.H. Robertson, John Maynard Keynes (Cambridge)

Known as Cash Balance Approach in Early 1900's

- **As per this approach there are 2 Ways that money increases utility**
  - 1. enabling split up of sale & purchase into different points in time
  - 2. being a Hedge against uncertainty
- demand for money depends partly on income and partly on other factors like wealth & interest rate .
- higher the income, greater the quantity of purchase, this will result in greater need for money a "temporary abode" of value to overcome transaction cost.
- Approach (eq)

$$M_d = kPY$$

M_d = demand for money

V = Cambridge K (proportion of nominal income held as cash

Captain Love Kaushik

P = average price levels (good/services)
PY = nominal income
Y = national output

3. Keynesian Theory of Demand for Money

This theory was given By – John Maynard Keynes

This theory is also known as – Liquidity Preference Theory

Book – General theory of Employment, Interest and Money known in 1936

- As per this theory there are 3 Motives of to hold money
  - Transaction motive
  - Precautionary motive
  - Speculation motive

Transaction motive

- It relates to the need for cash for current transactions for personal and business exchange

Income Motive (Individuals) ← Classification of Needs → Trade Motive (Business Firms)

- Direct relationship b/w transaction demand and level of income. (unaffected by interest rates)
- **Equation:**

$$M_r = kY$$

Lr = Transaction demand for money
k = ratio of earning

- **Conclusion:**

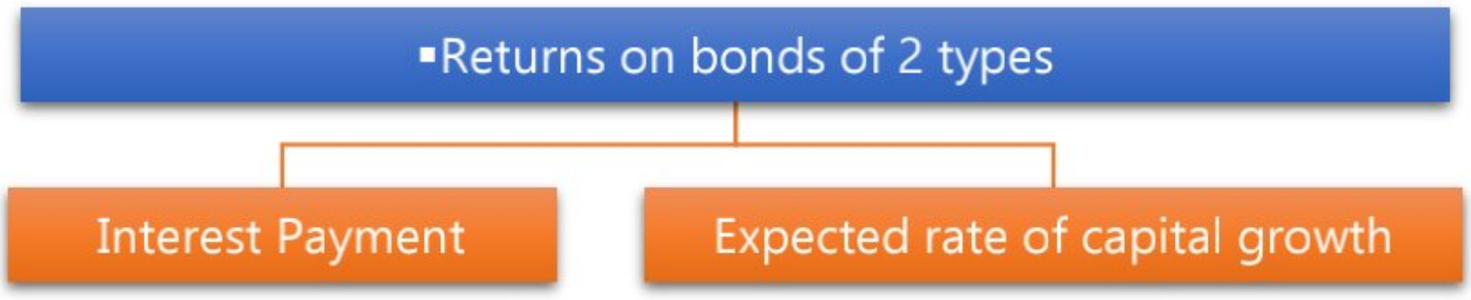
Aggregate demand for money for transaction purpose = f (national income)

Precautionary Motive

- Individuals and businesses keep a portion of income to finance uncertainties (unanticipated expenditure)
- **As per this motive , money demand Dependents on :**
  - Size of income
  - Prevailing economic and political conditions
  - Personal characterization (pessimistic / optimistic)
- **Conclusion:**
  - Precautionary motive cash balance is income elastic
  - Not sensitive to interest rates

Speculative Demand for Money (SDM)

- SDM Desire to hold cash in order to be equipped to exploit any attractive instrument opportunity requiring cash expenditure
- In Keynes theory interest (i) = equal interest of bond
- Assuming interest of money holding in cash = 0



- markets rate of interest and market value of phones are inversely related
- higher interested means lower speculation demand for money vice versa

If current rates > Critical Rates (Rn > Rc)

Interest Expects: fall in interest rates i.e. rise in bond prices and hence will convert cash to bonds as–

1. can earn high rate of returns on bonds
2. expect capital gains from rise and price

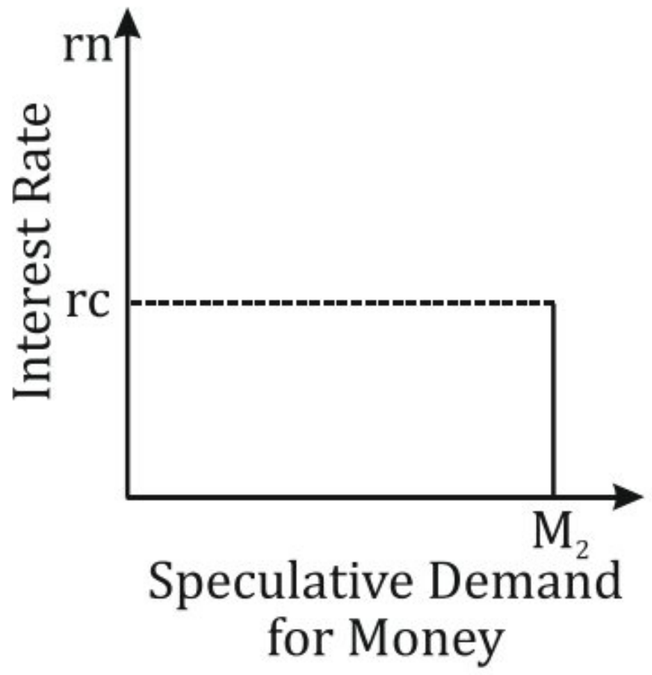
If current rates < Critical rates (Rn < Rc)

Interest expects: rise in interest rates will hold wealth in liquid cash as-

1. Loss by way of interest forgone in small
2. Anticipated capital loses are avoided
3. Return on money > bonds
4. If interest rate increases, bond prices will fall and ideal cash balance will be used to buy bonds at cheap prices.

1. Individual Speculation Demand

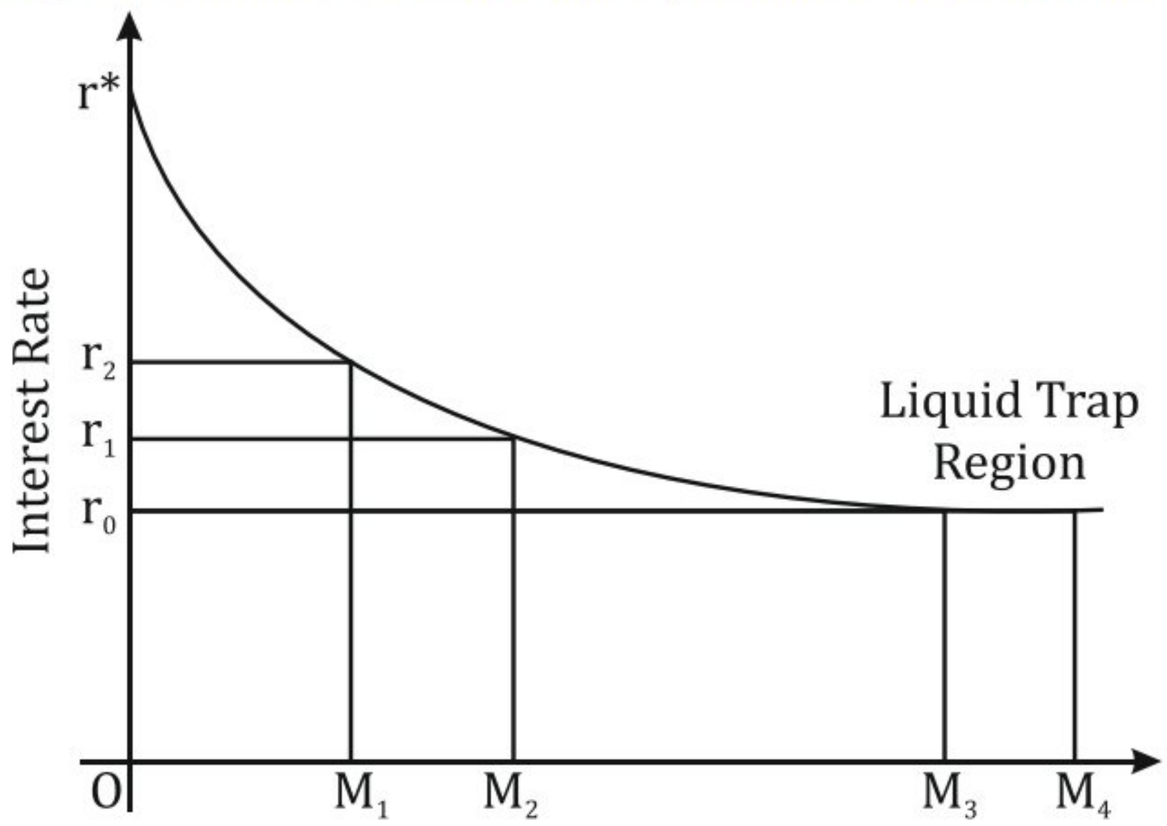
- Discontinuous portfolio decision of individuals
- Rn = current rate
  Rc = critical rate
- Rn > Rc, individuals hold extra wealth in form of bonds
- Rn < Rc, individuals hold wealth in form of speculation cash



2. Aggregate Speculation Demand

Observation

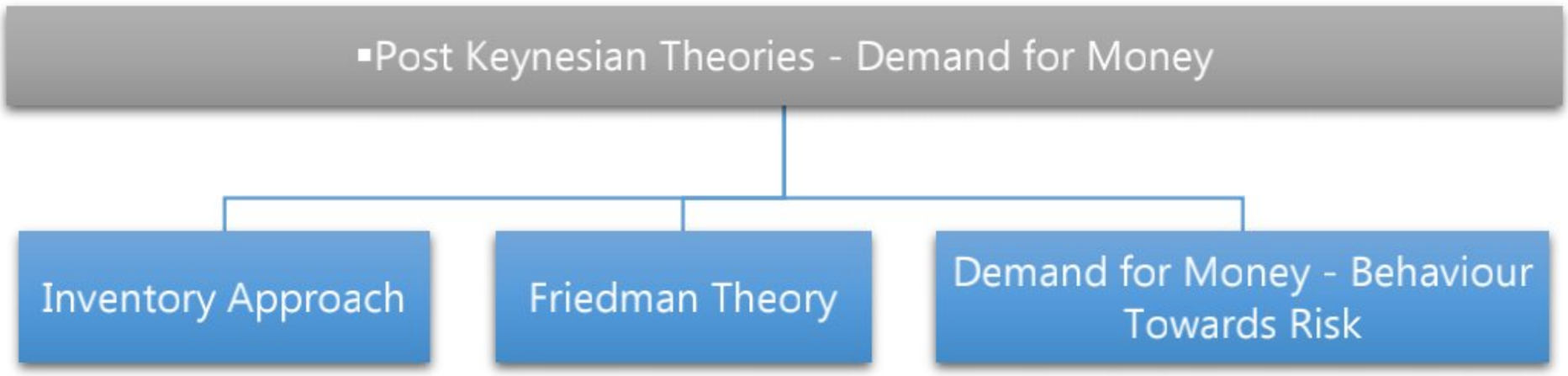
- When we go from individual speculation demand to aggregate speculation demand, discontinuity in demand curve disappears.
- We get Continuous downward sloping demand function
- Inverse relationship b/w current rate of interest and speculative demand for money.



Speculative demand for Money

Liquidity Trap	
Situation	• Expansionary monetary policy does not increase interest rates, income or stimulate the economy.
Preference	• Public prefers to hold money unaffected by interest rate, e.g., during war or deflation.
Investors	• Investors hold cash instead of bonds
Elasticity	• Speculative demand becomes perfectly elastic with respect to change in interest rates, curve becomes parallel to axis
Policies	• Monetary policies cannot stimulate economic growth. Expansionary monetary policy becomes ineffective.

Cost	• Opportunity cost of holding money is 0; with increased money supply, people still hold cash



1. Inventory Approach to Transaction Balance

This theory was By – Baumol (1952) and Tobin (1956)

This theory is also known as Known as – Inventory Theoretic Approach

As per this **Approach –** "Real cash balance" was viewed as inventory held for transaction purpose

- Inventory models assume 2 media of storing values
  - 1. Money
  - 2. Interest bearing alternative financial purpose
- Transfer Flow

- Liquid financial assets other than money (eg.- bank deposits) offer positive return which justify the above said transaction cost between money and assets.

Baumol's Approach	
Transaction	• Individuals hold money for transaction purposes
Cost	• Cost incurred while holding money inventory, i.e., interest foregone
Opportunity	• Foregone cost is called opportunity cost
Assets	• Alternative assets like bonds and shares are riskier than holding money
Savings	• Savings deposits in bank are relatively safe and earn some interest
Demand	• Transaction demand for money depends on the interest rate
Transfer	• Cost of transferring between money and assets (e.g., brokerage fees) affects the transfer frequency

- Baumol proves that the average amounts of cash withdrawal which minimizes cost is given by

$$C = \sqrt{\frac{2bY}{r}}$$

$b = brockers\ fee$

$Y = size\ of\ individual\ income$

$r = interest\ rate$

2. Friedman's Restatement of Quantity Theory

This theory was By – Friedman (1956)

As per this **Approach –** demand for money is treated as demand for capital assets

- Demand for money is affected by same factor as demand for any other asset such as
  - Permanent income
  - Relative return for assets (incorporates risk)
- Demand for money is determined by permanent income and not current income
- 4 Determinant for demand for money
  - 1. Function of total wealth = $\frac{Permanent\ income}{Discount\ rate}$

    It includes average return on 5 assets classes-money, bonds, equity, physical capital and human capital
  - 2. Positively related to price level
  - 3. Inversely related to opportunity cost of money holding
  - 4. Influenced by inflation

3. Demand for Money as Behaviour towards Risk

This theory was given By - James Tobin

- **Preference:** Emphasizes individual preference for more wealth and balance between non interest earning assets and investments
- **Portfolio:** Individuals diversifies their portfolios by holding a balanced combination of safe and risky assets
- **Risk:** individual's behavior shows risk aversion , which means they prefer less risk to more risk
- **Balance:** People prefer mix portfolio of money, bonds and shares with each person opting for a little different balance between risk and return

Tobin's Liquidity Preference Function	
Function	• Tobin's liquidity preference function links interest rate and money demand
Investment	• Higher bond interest leads to higher investment and less cash
Demand	• Increased interest rate reduces money demand and increases bond investments
Slope	• Depicts downward sloping demand function for money against interest rate
Observation	• As bond interest rates decline, the demand for money in portfolios rises
Conclusion	• Interest rate impacts money demand elasticity

CHAPTER – 8 : Money Market

UNIT-2 : The concept of Money Supply

- "Money Supply" Total quantity of money available with the people in economy
- Economic stability requires maintaining money supply at an optimal level to accurate estimation
- "Public" means all economic units except producers of money i.e. banking system and govt.
- Banking system comprises of RBI and banks
- Inter-bank deposits, holding by government and banking system not included in standard measure of money supply.

Rationale of Measuring Money Supply

- Facilitate analysis of monetary development which further helps understand cause of money growth
- Central banks worldwide use monetary policies to stabilize price level and GDP growth by managing supply of money

Sources of Money Supply

Central Bank (CB)	
Money	CB decision determines its supply in economy
Currency	can be issued by CB like fiat money
Source	Primary source of money supply and can issue high powered money which is source of all other forms of money
Fiat money	Issued by CB and backed by supporting reserves and value guaranteed by govt.
Gold and Forex Reserve	CB can issue currency to any extent keeping only its certain minimum amount, called 'Minimum Reserve System'

Banking System	
Policies	Response of commercial banks to policies of central banks determines supply of money.
Credit	Total money supply is determined by credit created by commercial banks
CBDC's	Central Bank digital currency (CBDC's) are emerging as digital and new forms of currencies i.e RBI is exploring CBDC's. eg- digital rupee
Crypto Currency	Not considered as money and legal tender by RBI as it face regulatory uncertainty

Measurement Money Supply

- Measurement of money is difficult due to different types of money and vary from country to country, time to time and purpose to purpose
- A range of monetary and liquidity measures are compiled by RBI

July 1935	• RBI compiling and disseminating monetary statistics
Till 1967- 68	• narrow measure of money supply • currency + demand deposits
From 1967-68 Broader	• Broader measure of money supply • aggregate monetary resources
April 1977	• recommended by second working group of money supply (SWG) • M_1, M_2, M_3, M_4 published

M_1, M_2, M_3, M_4

M_1 = Currency (notes + coins) with the people+ demand deposits with banking system(CASA) + other deposits with RBI

M_2 = M_1 + savings deposits with Post Office saving banks

M_3 = M_1 + Time deposits with banking system

M_4 = M_3 + deposits with Post Office saving organisation (excluding national savings certificate)

Determinants of Money Supply	
Two Alternative Theories	• Exogenous – Determined by Central bank • Endogenous – affected by economic activities
Current Explanation	• Money multiplier approach • Focus on money stock and money supply in terms of monetary space
Monetary Base	• Currency in circulation + bank reserve
Conclusion	• Total Supply of nominal money in determined by joint behavior of central bank, commercial banks and public

Concept of Money Multiplier
• Money created by Central Bank is high powered money • Banks create money through loan • Thus ₹ 1 increase in monetary base result in now more than ₹ 1 increase in supply of money • This increase in money supply is money multiplier

M = C + D	M = m × MB	M = Money Supply C = Currency D = Deposit m = Multiplier MB = Monetary base
Money Multiplier(m) = $\frac{\text{Money Supply (M)}}{\text{Money Base (MB)}}$		

- If the following 2 Assumptions are satisfied then,

$$\text{money Multiplier} = \frac{1}{\text{Required Reserve Ratio (R)}}$$

1. Banks never hold excess revenue
2. Individuals and non-bank corporation never hold currency means all money is deposited into banks

- Money Multiplier Approach – Supply of Money

By – Milton Friedman and Anna Schwartz in 1963

Factors determining money supply –

- Stock high powered money (H)
- Reserve ratio (Reserve / Deposit)
- Currency to deposit ratio (currency / deposit)

The Behavior of the Central Bank	
Supply	• Reflected in nominal high-powered money supply
Multiplier	• Money stock determined by multiplier
Control	• Monetary base is controlled by authority/RBI
Assumption	• Constant behavior of public and banks
Relationship	• Nominal money supply is directly proportional to high-powered money

The Behavior of the Commercial Bank	
Influence	Reserve ratio, lending and money supply
Multiplier	Smaller reserve ratio, higher money multiplier
Excess reserve (ER)	It determine money supply (ER = TR – RR)
Opportunity cost	Excess reserves incur opportunity cost, influencing bank on interest rate changes
Interest	Interest rate impacts reserve ratio (higher rates lower excess reserves)

The Behaviour of Public

- Demand deposits undergo multiple expansion, currency doesn't, reducing overall multiple expansion and money multiplier when deposit convert to currency
- Currency deposit ratio indicates the presence of banking habits, influenced by economic activity, financial sophistication, access of financial services
- Smaller currency deposit ratio larger the multiplier (high production of high powered money)
- Time deposit - demand deposit ratio (TD/DD), higher ratio means more free reserve enabling large deposits and monetary expansion
- Money multiplier is determined by
  - reserve ratio (r)
  - excess reserve ratio (e)
  - currency ratio (c)
- Money supply depends on
  - high power money (H)
  - money multiplier (m)
  - varying directly with change in MB, inversely with C and RR

In case of excess reserve $m = \frac{1+c}{c+r+e}$	Money Supply $(M) = \frac{1+c}{r+e+c} \times H$

- Money multiplier is a function of
  - Currency ratio (set by depositors, depends on public behaviour)
  - Excess reserve ratio (set by bankers)
  - Required reserve ratio (set by central bank)

Monetary Policy and Money Supply

- Central Bank stimulate economy through infusing liquidity into system
- Open market operation, e.g: purchase of government securities injects high powered money into system

$$\Delta \text{ Money Supply} = \frac{1}{R} \times \Delta \text{ reserve}$$

- Effect of open market sale is very similar to open market purchase but in opposite direction
- Money multiplier = 0, when invest rate are too low, Bank hold newly injected reserves as excess reserve with no risk

Effects of Govt. Expenditure on Money Supply

- Govt facing cash balance shortage can use ways and means advances (WMA) and overdraft (OD) facilities
- Under WHA/OD, RBI grants excess reserve to govt.
- This happens when govt. incurs expenditure
  - Dr. - govt. balances with RBI
  - Cr. - receivers (eg- Salary ac. of govt. employees)
- Excess reserve leads to money supply through multiplier process

Credit Multiplier

- Commercial banks create money by lending out excess reserves.

$$\text{Credit Multiplier} = \frac{1}{\text{Required Reserve Ratio}}$$

CHAPTER – 8 : Money Market

UNIT-3 : Monetary Policy

- RBI manages economic fluctuations like inflation to maintain price stability through adjustments in money supply (monetary policy)
- open market operations are done through buying and selling security in open market
- OMO (open market operations) impact short term interest rates, influencing long term interest rates

Lowering rates eases monetary policy raising rates tightens monetary policy

Monetary Policy - Framework

Basic components		
Objectives of Monetary policy	Analytics of Monetary Policy	Operating procedures

1. Objectives

- RBI act 1934:
  - Regulating issue of notes and keeping reserves for monetary stability
  - operating currency and credit system

Primary objectives (developing countries)

  - Maintenance of economic growth
  - adequate flow of credit to productive sectors
  - sustaining a moderate structure of interest rate to encourage investments
  - creation of effective market for govt. securities
- The primary objective is to maintain a balance between price stability and economic growth.

2. Analysis / Transmission

- The Reserve Bank's monetary policy changes impact economic activity and inflation through transmission.
- Stages of transmission
  - changes to monetary policy affecting interest rate
  - changes to interest rates affecting economic activity and inflation

Channels of Transmission

(a) Savings and investment channel

Interest	Lower interest rates encourage spending over savings
Loans	Reduced loan rates stimulate borrowing and increase demand for assets
Investment	Lower borrowing costs promote business investment in capital goods, boosting product demand

(b) Cash flow channel

Impact	Monetary policy affects interest rates, influencing spending decisions
Lending	Lower rates decrease interest payments, freeing cash for spending
Income	Lower rates reduce income from deposits, restricting spending
Economy	Lower rates spending in economy

(c) Asset price and wealth channel

Channel	Impacts consumption and investment, affecting borrowing and spending
Interest	Lower rates support asset prices and elevate future income
Equity	Higher asset prices increase equity, easing borrowing
Wealth	wealth boost utilization and investment

(d) Exchange rate channel

RBI	Lowers cash rate when India's interest rates are below global rates
Investment	Lower returns on Indian assets demand
Inflation	Lower rates make foreign goods costlier, potentially causing inflation

3. Operating Procedure and Instruments

(a) Quantitative Tools

Reserve Ratio	RBI sets a percentage of cash reserve that banks have to keep aside. Types: Reserve Ratio • Cash Reserve Ratio (CRR) - portion of cash set aside by RBI. Cannot lend nor earn interest on CRR • Statutory Liquidity Ratio (SLR) - portion of liquid assets (gold or RBI securities). Set aside by bankers as per RBI can earn interest but its low
Open Market Operations (OMO	RBI controls money supply through buying and selling govt, securities in open market • RBI sells reduces liquidity in market • RBI buys increases liquidity in market

(b) Qualitative Tools

Margin Requirement	• Difference between value of collateral and amount of loan
Moral Suasion	• RBI convinces banks to invest in govt. securities through persuasion
Selective credit control	• Controlling credit by not lending to certain industries

(c) Market Stabilization Scheme (MSS)

Policy Rates	• Bank Rates: Interest rate at which RBI lend long term loan to banks • But, RBI presently uses liquidity adjustment facilities (LAF) - Repo rate • RBI has set penalties for defaulter bank in non-maintenance of CRR and SLR
Liquidity Adjustment Facilities (LAF)	• Repo rate: Banks borrows form RBI, • short term against repurchase agreement • Reverse Repo Rates : RBI pays to banks to keep additional funds in RBI • Reverse Repo Rates = repo rate -1
Marginal Standing Facilities Rates	• MSF is panel rate at which Central Bank lends money to banks over rate available under Rep policy MSF rate = Repo rate + 1

CHAPTER - 9 : INTERNATIONAL TRADE

UNIT-4 EXCHANGE RATE AND ITS ECONOMIC EFFECTS

The Exchange Rate

A foreign currency transaction is a transaction that is denominated in or requires settlement in a foreign currency, including transactions arising when an enterprise either:

(a) Buys or sells goods or services whose price is denominated in a foreign currency.

(b) Borrows or lends funds when the amounts payable or receivable are denominated in a foreign currency.

(c) Becomes a party to an unperformed forward exchange contract; or

(d) Otherwise acquires or disposes of assets, or incurs or settles liabilities, denominated in a foreign currency.

The Exchange Rate Regimes

There are 3 broad categories of exchange rate systems.

(1) In one system, exchange rates are set purely by private market forces with no government involvement Values change constantly as the demand for and supply of currencies fluctuate. (floating exchange rate system)

(2) In another system, currency values are allowed to change through market forces of demand and supply but governments participate in currency markets in an effort to influence those values (managed floating / soft peg / dirty floating)

(3) Finally governments may seek to fix the values of their currencies, either through participation in the market or through regulatory policy. (Pegged/hard peg)

AN EXCHANGE RATE REGIME is the system by which a country manages its currency with respect to foreign currencies. It refers to the method by which the value of the domestic currency in terms of foreign currencies is determined. There are two major types of exchange rate regimes at the extreme ends; namely

(I) floating exchange rate regime (also called a flexible exchange rate), and

(II) fixed exchange rate regime

Free Floating Exchange Rate System

(1) A free floating system has the advantage of being self-regulation

(2) There is no need for government intervention if the exchange rate is left to the market

(3) The primary difficulty with free-floating exchange rates lies in their unpredictability

(4) Contacts between buyers and sellers in different countries must not only reckon with possible change changes in prices and other factors during the lives of those contracts, they must also consider the possibility of exchange rate changes.

Managed Float Systems

Governments and central banks often seek to increase or decrease their exchange rates by buying or selling their own currencies.

Fixed Exchange Rates

In a fixed exchange rate system, the exchange rate between two currencies is set by government policy.

In an open economy, the main advantages of a fixed rate regime are:

1. A fixed exchange rate avoids currency fluctuations and eliminates exchange rate risks & transaction costs
2. A fixed exchange rate can thus, greatly enhance international trade and investment.
3. A reduction in speculation on exchange rate movements
4. A fixed exchange rate system imposes discipline on a country's monetary authority and lower levels of inflation.
5. The government can encourage greater trade and investment as stability encourages investment
6. Exchange rate peg can also enhance the credibility of the country's monetary-policy
7. However, in the fixed or managed floating exchange rate regimes (where the market forces are allowed to determine the exchange rate within a band), the central bank is required to stand ready to intervene in the foreign exchange market and, also to maintain an adequate amount of foreign exchange reserves for this purpose.

A floating exchange rate has many advantages:

- It allows a Central bank and/or government to pursue its own independent monetary policy.
- It allows exchange rate to be used as a policy tool: for example, policy-makers can adjust the nominal exchange rate to influence the competitiveness of the tradable goods sector.
- As there is no obligation or necessity to intervene in the currency markets, the central bank is not required to maintain a huge foreign exchange reserves.

The greatest disadvantage of a flexible exchange rate regime is

That volatile exchange rates generate a lot of uncertainties in relation to international transactions and add a risk premium to the costs of goods and assets traded across borders

Nominal Versus Real Exchange Rates

The real exchange rate is the rate at which a person can trade the goods and services of one country for the goods and services of another.

$$\text{Real exchange rate} = \text{Nominal exchange rate} \times \frac{\text{Domestic Price Inex}}{\text{Foreign Price Index}}$$

The Real Effective Exchange Rate (REER) is the nominal effective exchange rate (a measure of the value of a domestic currency against a weighted average of various foreign currencies) divided by a price deflator or index of costs.

$$\text{REER} = \text{NER} \times \frac{1}{\text{Price Deflator}} = \left(\frac{\text{NER}}{\text{Price Deflator}} \middle| \text{Cost Index}\right)$$

The Foreign Exchange Market

Commercial Banks and Brokerage Houses do not only execute currency exchange operations at prices set by other active players but come out with their own prices as well, actively influencing the price formation process and the market life. That is why they are called MARKET MAKERS.

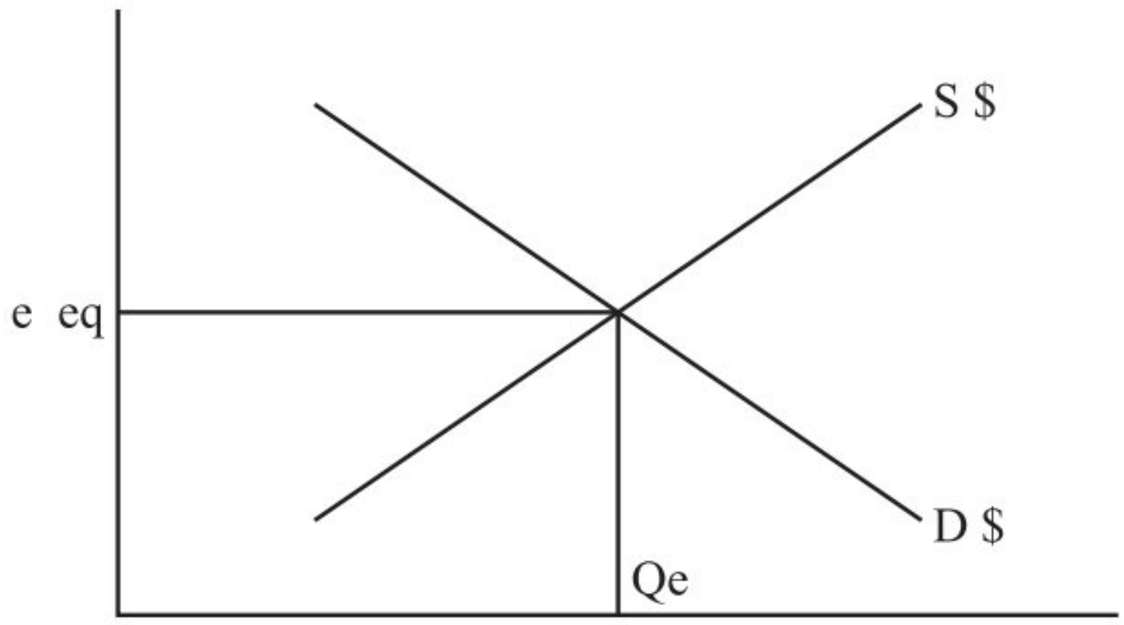
In the foreign exchange market, there are two types of transactions

(i) Current transactions which are carried out in the spot market and the exchange involves immediate delivery, and

(ii) Future transactions wherein contracts are agreed upon to buy or sell currencies for future delivery which are carried out in forward and/or futures markets On account of its critical role in the forex markets, the dollar is often called a 'vehicle currency'

Determination of Nominal Exchange Rate

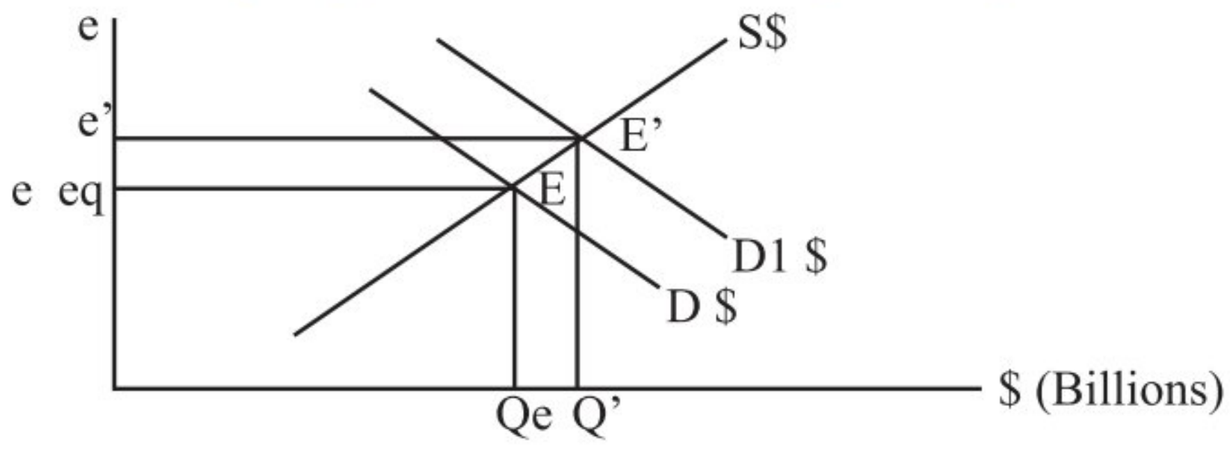
Determination of Nominal Exchange Rate



Changes In Exchange Rates

Currency appreciates when its value increases with respect to the value of another currency or a basket of other currencies. On the contrary, currency depreciated when its value falls with respect to the value another currency or a basket of other currencies

Currency Depreciation under Floating Exchange Rates



Devaluation (Revaluation) Vs Depreciation (Appreciation)

- DEVALUATION is a deliberate downward adjustment in the value of a country's currency relative to another country's currency or group of currencies or standard.
- In contrast, DEPRECIATION is a decrease in a currency's value (relative to other major currency benchmarks) due to market forces of demand and supply under a floating exchange rate and not due to any government or central bank policy actions.
- Revaluation is the opposite of devaluation and the term refers to a discrete official increase of the otherwise fixed par value of a nation's currency.
- Appreciation, on the other hand, is an increase in a currency's value (relative to other major currencies) due to market forces of demand and supply under floating exchange rate and not due to any government of central bank policy interventions

Impacts of Exchange Rate Fluctuations on Domestic Economy

(i) Fluctuations in the exchange rate have significant role in determining the nature and extent of country's trade

(ii) Fluctuations in the exchange rate affect the economy by changing the relative prices of domestically-produced and foreign-produced goods and services.

(iii) Exchange rate changes affect economic activity in the domestic economy. A depreciation of domestic currency primarily increases the price of foreign goods relative to goods produced, in the home country and diverts spending from foreign goods to domestic goods.

(iv) For an economy where exports are significantly high, a depreciated currency would mean a lot of gain.

(v) Depreciation is also likely to add to consumer price inflation in the short run, directly through its effect on prices of imported consumer goods and also due to increased demand for domestic goods.

(vi) The fiscal health of a country whose currency depreciates is likely to be affected with rising export earnings and import payments and consequent impact on current account balance.

(vii) Companies that have borrowed in foreign exchange through external commercial borrowings (ECBs) but have been careless and did not sufficiently hedge these loans against foreign exchange risks, would also be negatively impacted as they would require more domestic currency to repay their loans

(viii) Countries with foreign currency denominated government debts, currency depreciation will increase the interest burden and cause strain to the exchequer for repaying and servicing foreign debt. Fortunately, India's has small proportion of public debt in foreign currency.

(ix) Exchange rate fluctuations make financial forecasting more difficult for firms and larger amounts will have to be earmarked for insuring against exchange rate risks through hedging.

(x) With growth of investments across international boundaries, exchange rates have assumed special significance. Investors who have purchased a foreign asset, or the corporation which floats a foreign debt, will find themselves facing foreign exchange risk.

(xi) Foreign investors are likely to be indecisive or highly cautious before investing in a country that has high exchange rate volatility.

- **An appreciation will have the following consequences on real economy:**

(i) An appreciation of currency raises the price of exports and, therefore, the quantity of exports would fall.

(ii) The outcome of appreciation also depends on the stage of the business cycle as well. If appreciation sets in during the recessionary phase, the result would be a further fall in aggregate demand and higher levels of unemployment.

(iii) An appreciation may cause reduction in the levels of inflation because imports are cheaper.

(iv) With increasing export prices, the competitiveness of domestic industry is adversely affected and therefore, firms have greater incentives to introduce technological innovations and capital-intensive production to cut costs to remain competitive.

(v) Increasing imports and declining exports are liable to cause larger deficits and worsen the current account.

(vi) Loss of competitiveness will be insignificant if currency appreciation is because of strong fundamentals of the economy.