CHAPTER-1
INTRODUCTION

CENTRAL PROBLEMS OF AN ECONOMY:

As we know the Central problems of an economy arises due to the following reasons.

1 Human wants are unlimited. 2. Resources are limited 3. Resources have alternative uses.

The resources available to the human are limited, but their wants are unlimited. Due to the scarcity of resources, the economy faces the problem of choice. This mismatch between unlimited wants and limited resources that gives rise to three Central problems faced by every economy.

1 WHAT TO PRODUCE AND IN WHAT QUANTITIES?

Every society wants thousands of goods and services. Since resources are scarce, all these goods and services cannot be produced, so it has decided to what type goods are produced.

2. HOW TO PRODUCE:

It is the problem related with the technique of production. There are two techniques of production ---Labour intensive and Capital intensive. Labour intensive is a production technique, which uses more amount of labour and less amount of capital. Capital intensive is a production technique, which uses more amount of capital and less amount of labour.

3. FOR WHOM TO PRODUCE:

It is the problem related with distribution. It means distribution of output among the factors of production. This is called functional distribution.

ORGANISATION OF ECONOMIC ACTIVITIES:

Every economy tries to solve Central problems differently. According to the way to solve Central problems economies broadly divided into three.

1. Centrally Planned Economy OR Socialist Economy.

   It is an economic system where all the means of production are under the ownership and control of the government. Centralized planning, public welfare, public sector etc. are the important features of centrally planned economy.

2. Market Economy OR Capitalist Economy:

   It is an economic system where all the means of production are under the ownership of private individuals. Price mechanism, Private sector, Profit motive etc. are the features of market economy.

3. Mixed Economy:

   It is an economic system where all the means of production are under the ownership and control of both private individuals and government.

BRANCHES OF ECONOMICS. Economics is broadly dived into two branches. They are the following.

MICRO ECONOMICS: It is the branch of Economics which deals with individual units. It is also called price theory, demand theory, cost theory etc. Example Salary of a person, demand for a pen,

MACRO ECONOMICS: It is another branch of Economics which deals with aggregates. John Maynard Keynes is considered as the father of Macro Economics. It is otherwise called income theory.Example National income, aggregate demand, inflation, money supply.

CHAPTER-2
THEORY OF CONSUMER BEHAVIOUR

UTILITY

Utility of a commodity is defined it's want-satisfying capacity.

Cardinal Utility Analysis

Cardinal utility analysis assumes that level of utility can be expressed in numbers. It can be measure with the unit Utile.

Total Utility (TU): Total utility of a commodity is the total satisfaction derived from consuming the given amount of the commodity. Consumption of More units of a commodity provide more satisfaction to the consumer. Total Utility depends on the quantity of the commodity consumed. Therefore, TU_n refers to total utility derived from consuming n units of a commodity.

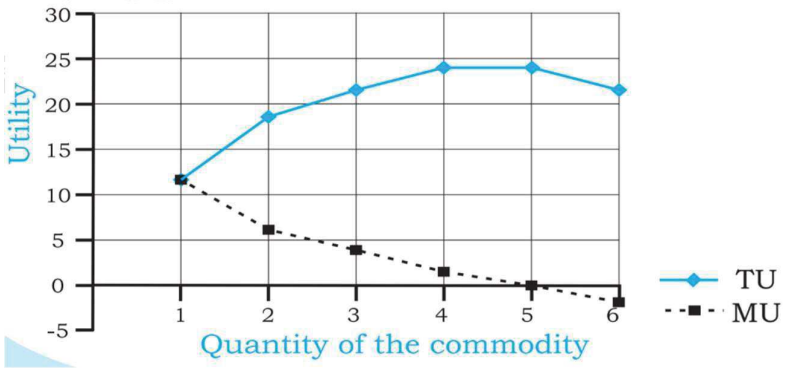
Marginal Utility: Marginal utility (MU) is the change in total utility due to consumption of one additional unit of a commodity. In general, $MUn = TUn - TU(n-1)$, here n refers to the n^{th} unit of the commodity

In other way we can say that Total utility the sum total of marginal utility. Total utility and marginal utility can also be related in the following way.

$$TUn = MU1 + MU2 + \ldots + MU(n-1) + MUn$$

LAW OF DIMINISHING MARGINAL UTILITY

Law of Diminishing Marginal Utility states that marginal utility from consuming each



additional unit of a commodity declines as its consumption increases, while keeping consumption of other commodities constant. The following table and diagram show the law of diminishing marginal utility.

Units	Total utility	Marginal utility
1	12	12
2	18	6
3	22	4
4	24	2
5	24	0
6	22	-2

3The above table and diagram show that the total utility increases but at a diminishing rate. The marginal utility diminishes with increase in consumption of the commodity from 12 to 6, 6 to 4 and so on. This follows from the law of diminishing marginal utility. MU becomes zero at a level when TU remains constant. In the example, TU does not change at 5th unit of consumption and therefore MU = 0. Thereafter, TU starts falling and MU becomes negative.

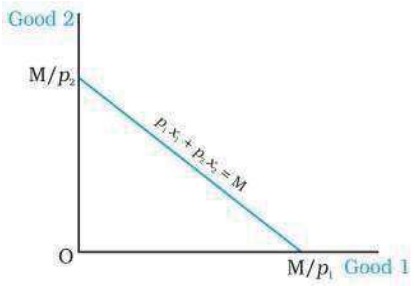
Ordinal Utility Analysis

Under this analysis the consumer cannot measure utility, but he can able to rank the utility obtained from the consumption of different bundles. We use Indifference curves to represent this. The points representing bundles which give the consumer equal utility can be joined to obtain a curve it is called Indifference curve. The consumer is said to be indifferent on the different bundles because each point of the bundles gives the consumer equal utility.

BUDGET SET:

The set of two goods available to buy a consumer with his income is called budget set. The equation of the budget set is $P1X1 + P2X2 \leq M$. Here P1Price of first good. X1 is the amount of good 1.P2 is the price of second good and X2 is the amount of second good. There is an inequality in the budget set equation is called budget constraint. P1, P2 and M are the budget constraints.

BUDGET LINE: The line which shows the locus of points of budget sets which costs exactly equal to income of the consumer. Equation of the budget line is $P1X1 + P2X2 = M$. *Here* P_1 Is the price of first good, P_2 is the price of second good, X1 quantity of first good, X2 quantity of second good and M is consumer's income. The following is a budget line.

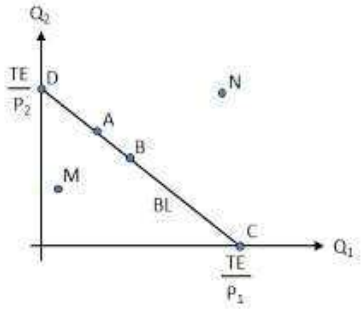


VERTICAL INTERCEPT = $\frac{M}{P2}$

HORIZONTAL INTERCEPT= $\frac{M}{P1}$

SLOPE OF BUDGET LINE = $-\frac{P1}{P2}$

Points on the budget line shows preferred bundle, points above the budget line shows superior bundle, and point below the budget line shows inferior bundles. This shown by the following diagram.



POINTS A, B, C AND D SHOW PREFFERED BUNDLES

POINT M SHOWS INFERIOR BUNDLE

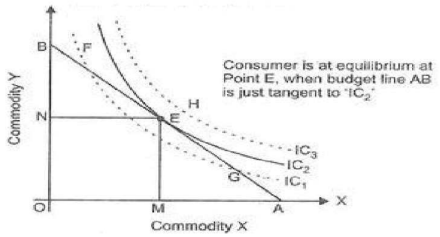
POINT N SHOWS SUPERIOR BUNDLE

PRICE RATIO OR SLOPE OF THE BUDGET LINE:

The amount of Good2 sacrificed to buy one extra unit of Good1 is called ratio or slope of the budget line.

CONSUMERS EQUILIBRIUM OR CONSUMER'S OPTIMUM: It is a point where a consumer can enjoy maximum satisfaction with his income. In other words, it is a point where budget line is tangent to the budget line. At this point MRS = Slope of the budget

line. Mathematically it can be expressed as $\frac{X2}{\Delta X1} = -\frac{P1}{P2}$ It can be shown as follows.



AT POINT 'E' $\frac{\Delta X2}{\Delta X1} = -\frac{P1}{P2}$

In the above diagram 'AB' is the budget line.IC_1, IC_2, IC_3 are the indifference curves. IC_1 touches the point'F' and 'G' but these points don't consider as the consumers equilibrium, because IC_2 gives more satisfaction than IC_1. Budget line is tangent to the IC_2 at the point 'E'. It is considered as consumer's ~~equilibrium~~, because AT POINT 'E"

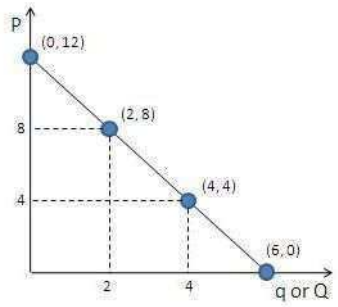
DEMAND: Demand is a desire backed by ability and willingness to pay for a commodity. The functional relationship between demand and demand determining factors is called demand function. Algebraically q= f (P, Pr, M, T).

LAW OF DEMAND: If other things remaining the same, price of a commodity increases its quantity demanded will be Decreases and vice versa. This inverse relationship between price and quantity is called Las of Demand. The other things mean Income of the consumer, price of related goods, Taste and preferences of the consumer, Climate, Fashion etc. These factors are called demand determining factors.

DEMAND CURVE: The graph, which shows the inverse relationship between price and quantity demanded is called Demand Curve. The Demand Curve is a downward sloping curve because of the following reasons

1. Price effect: Change in demand due to the change in price is called price effect.
2. Substitution effect: It is the effect between two commodities. If the price of one commodity increases, the quantity demanded of the other commodity increases.
3. Income effect: Change in the quantity demanded of a commodity due to the change in the real income of the consumer. It is called substitution effect. The following is a demand curve.

Price	Quantity Demanded
$12	0
$8	2
$4	4
$0	6



SUBSTITUTE GOODS OR SUPPLEMENTARY GOODS: The goods which used as substitute to satisfy a need are called substitute goods.eg coffee and tea, bus and train.

COMPLEMENTARY GOODS: The goods which used together are called complementary goods. Eg. bread and jam, pen and ink.

NORMAL GOODS: when Income of the consumer increases, quantity Demand of certain commodities also increases. Such goods are called normal goods. Eg. Television, computer.

INFERIOR GOODS: When consumers Income increase Demand of certain commodities Decreases. Such commodities are called inferior goods. Eg. beedi, tapioca

CHAPTER-3
PRODUCTION AND COST

PRODUCTION FUNCTION: The relationship between inputs used and output produced by a firm is called production function. If there are only two factors of production, the Production function can be written as follows.

$$q = f(X_1, X_2)$$

SHORT RUN AND LONG RUN

SHORT RUN	LONG RUN
Short period of time	Long period of time
Factors of production are fixed	Factors of production are variable
Production function is called Law of variable proportion	Production function is called Law of Fixed proportion

TOTAL PRODUCT (TP) OR TOTAL PHYSICAL PRODUCT (TPP): Total output produced with the given quantity of inputs.

AVERAGE PRODUCT (AP) OR AVERAGE PHYSICAL PRODUCT(APP) AP is the output per unit of

Variable input. By dividing Total output with Variable factors, we get AP. $AP\ OR\ APP == \frac{TP}{Q}$

Here Q= quantity of inputs. TP= TOTAL PRODUCT

MARGINAL PRODUCT (MP) OR MARGINAL PHYSICAL PRODUCT (MPP) It is the additional product produced with the employment of an additional unit of input. $MP\ OR\ MPP = \frac{\Delta TP}{\Delta Q}$

ΔTP= CHANGE IN TOTAL PRODUCT, ΔQ= CHANGE IN QUANTITY OF INPUTS

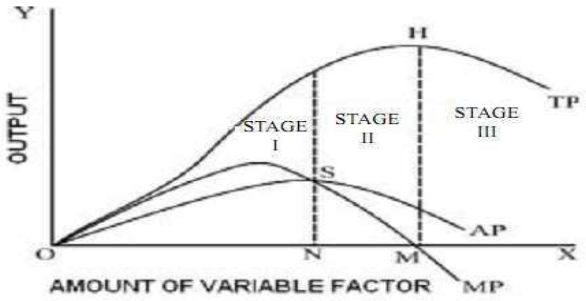
THE LAW OF VARIABLE PROPORTION OR LAW OF DIMINISHING MARGINAL PRODUCT

Law of variable proportions or the law of diminishing marginal product say that the marginal product of a factor input initially rises with its employment level. But after reaching a certain level of employment, it starts falling. This is because of unproportionate factor proportions. Factor proportions represent the ratio in which the two inputs are combined to produce output. As we hold one factor fixed and keep increasing the other, the factor proportions change. Initially, as we increase the amount of the variable input, the factor proportions become more and more suitable for the production and marginal product increases. But after a certain level of employment, the production process becomes over crowded with the variable input. This is shown by the following table.

Units of Land	Units of Labour	Total Production	Average Production	Marginal Production	
10 Acres	0	–	–	–	
"	1	20	20	20	1st stage MP > AP
"	2	50	25	30	
"	3	90	30	40	
"	4	120	30	30	AP = MP
"	5	140	28	20	2nd stage MP=0 and TP Maximum
"	6	150	25	10	
"	7	150	21.3	0	
"	8	140	17.5	–10	3rd stage MP < 0

The above table illustrates several important features of a typical production function with one variable input- labour, here both Average Product (AP) and Marginal Product (MP) of labour first rise, reach maximum - then decline. The total output increases at an increasing rate till the employment of the 4th worker. The rate of increase in the marginal product reveals this. Any additional labour employed beyond the 4thlabour clearly faces the operation of the Law of Diminishing Returns. The

6maximum marginal product is 30 after which it continues to fall, ultimately becoming negative. Thus when more and more units of labour are combined with other fixed factors the total output increase first at an increasing rate then at a diminishing rate finally it becomes negative. The graphical representation the above table is shown below.



In the above diagram TP, AP and MP are Total product curve, Average product curve and MP is the Marginal product curves. The three stages of the law is illustrated. In the first stage TP increases at an increasing rate. AP and MP also increase. It is called Increasing returns to a factor. In the second stage TP increases at a decreasing rate, and AP and MP decline. It is called Diminishing returns to a factor. In the third stage TP starts decline and MP becomes negatie and AP declines. It is called Negative returns to a factor.

COST: It refers to the expenses incurred by the producer to produce goods and services.

TOTAL COST: Total Cost refers the sum total of all costs incurred by the producer to produce goods and services. If is the sum of Total Variable Cost and Total Fixed Cost.

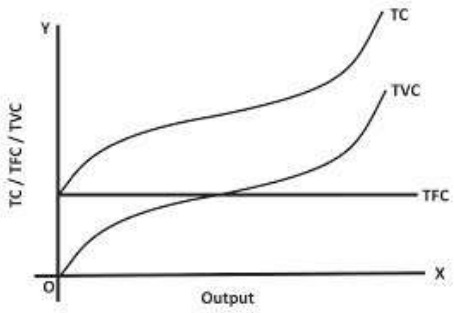
$$\boldsymbol{TC = TFC + TVC}$$

TOTAL FIXED COST: The total cost incurred by the producer to buy fixed inputs is called Total Fixed cost. It includes Rent, salary for permanent employees, interest on loans, insurance premium etc. It is the difference between Total Cost and Total Variable Cost.

TFC = TC - TVC

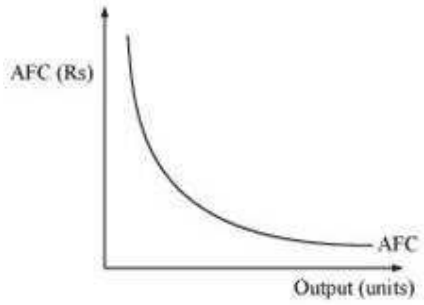
TOTAL VARIABLE COST: The total cost incurred by the producer on variable factors is called Total Variable Cost. It includes Cost of raw materials, energy cost, salary of temporary employees etc. When there is no production TVC become zero. It is the difference between TC and TFC. The following diagram shows the shape of TC, TFC and TVC.

$$\boldsymbol{TVC = TC - TFC}$$



AVERAGE FIXED COST: Fixed cost per unit of output is called Average Fixed cost. AFC Curve is a rectangular hyperbola. $AFC = \frac{TFC}{Q}$, $\boldsymbol{TFC \times Q = AFC}$ $\boldsymbol{here\ Q = Quantity\ of\ output}$.

The following is an AFC Curve



SHORT AVERAGE VARIABLE COST [SAVC]: SAVC is the variable cost per unit of output. AVC curve is a 'U' shaped curve

$$SAC = \frac{TVC}{Q}, TVC = AVC \times Q$$

SHORT RUN AVERAGE COST [SAC]: Cost per unit of output is called SAC. It is a 'U' shaped curve.

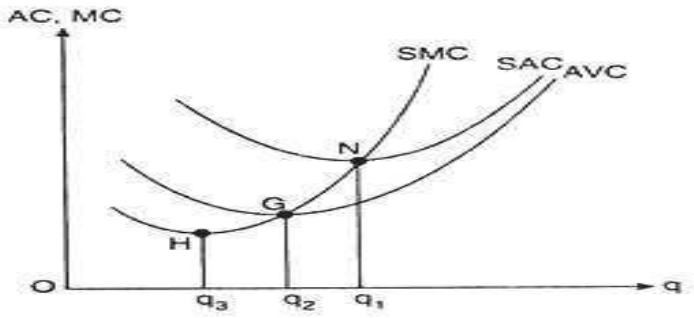
$$\mathbf{SAC} = \frac{\mathbf{TC}}{\mathbf{Q}}, \quad \mathbf{TC} = \mathbf{SAC} \times \mathbf{Q}$$

SHORT RUN MARGINAL COST[SMC]: SMC is the additional cost incurred for producing an additional unit of output. SMC curve is a 'U' shaped curve.

$$SMC = \frac{\Delta TC}{\Delta Q} \; OR \; TC_n - TC_{(n-1)}$$

The short run marginal cost (SMC), average variable cost (AVC) and short run average cost (SAC) curves are all U-shaped curves. The reason behind the curves being 'U 'shaped is the law of variable proportion. In the initial stages of production in the short run, due to increasing returns to labour, all the costs (average and marginal) fall. In addition to this in the short run MP of labour also increases, which implies that more output can be produced by per additional unit of labour, leading all the costs curves to fall. Subsequently with the advent of constant returns to labour, the cost curves become constant and reach

their minimum point (representing the optimum combination of capital and labour). Beyond this optimum combination, additional units of labour increase the cost, and as MP of labour starts falling, the cost curve starts rising due to decreasing returns to labour. The following is SAVC, SAC and SMC curves.



RELATIONSHIP BETWEEN AVC AND MC OR SAC AND SMC.

1. AVC and MC initially falls and later rise.
2. When AVC falls, MC will be less than AVC.
3. When AVC rises, MC will be more than AVC.
4. MC cuts minimum point of AVC from below.

RELATIONSHIP BETWEEN SAC AND SAVC.

1. The difference between SAC and AVC indicates AFC.
2. The difference between SAC and AVC Decreases as the output increases.
3. The minimum point of AVC is on the left of the minimum point of SAC.

CHAPTER-4
THEORY OF A FIRM UNDER PERFECT COMPETITION

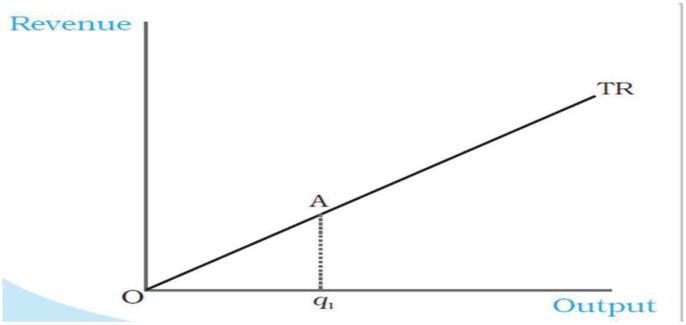
Perfect competition: It is a market situation in which very large number of buyers and sellers buy and sell homogeneous products. The following are the features of perfect competition.

1. Large number of buyers and sellers.
2. Homogeneous products.
3. Free mobility of factors of production.
4. Perfect knowledge about the market conditions.
5. Freedom of entry and exit.
6. Absence of transportation cost.
7. Uniform price.
8. Absence of selling cost.

The most important features of perfect competition are- Homogeneous products and every buyers and sellers are price takers. Price takers mean every buyers and sellers in the market receive the price determined by market forces such as Demand and Supply. Perfect Competition is not exist in the real world because the features such as homogeneous products, absence of transportation cost.

REVENUE: The Income earned by a producer by selling products in the market is called Revenue. There are three types of Revenue.

- Total Revenue (TR): Income earned from selling of all the units of output in the market is called Total Revenue. It is the product of price(P) and quantity sold(q). Total Revenue curve is an upward sloping straight line.



We use the following formula to find TR.

$$TR = P \times Q$$

- Average Revenue (AR): Total Revenue per unit of output is called AR. It is calculated dividing TR by quantity of output sold AR curve is a horizontal straight line. It is also the price line, Demand curve.

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

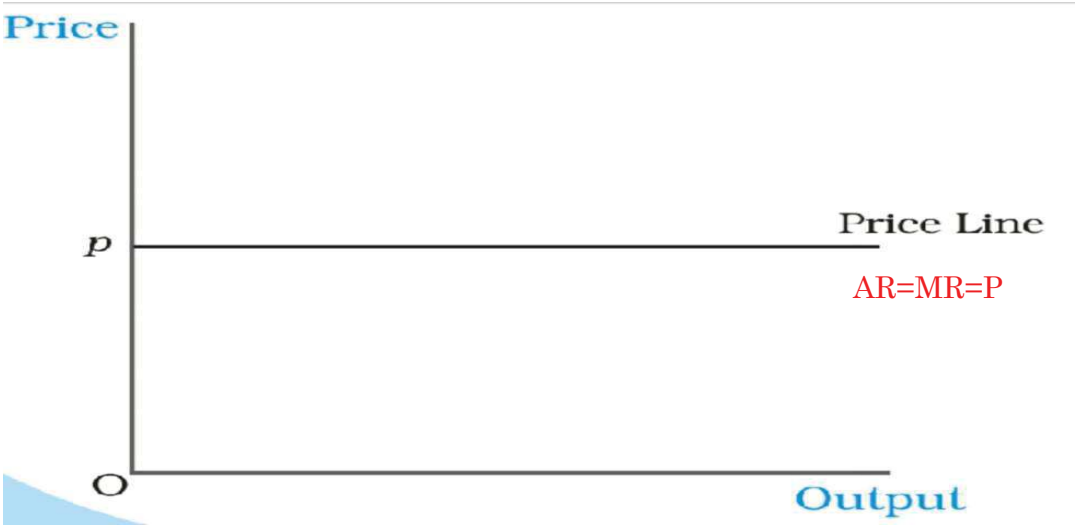
- Marginal Revenue (MR): MR is the additional Revenue by selling of an additional unit output in the market. We use the following equations for finding MR.

$$MR = \frac{\Delta TR}{\Delta Q} \; OR \; MR = TR_n - TR_{(n-1)}$$

$$MR = \frac{Pq_2 - pq_1}{(q_2 - q_1)}$$

$$= \frac{p(q_2 - q_1)}{(q_2 - q_1)}$$

$$= p$$

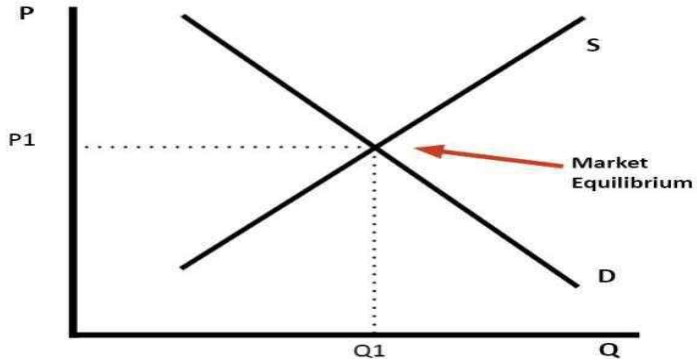


CHAPTER-5
MARKET EQUILIBRIUM

Equilibrium: Equilibrium means balance or equal. Market equilibrium means a point where market demand and market Supply are equal. The price at which Demand and Supply are equal is called equilibrium price. The quantity of goods and services sold and bought at equilibrium price is called equilibrium quantity. Mathematically it can be written as follows.

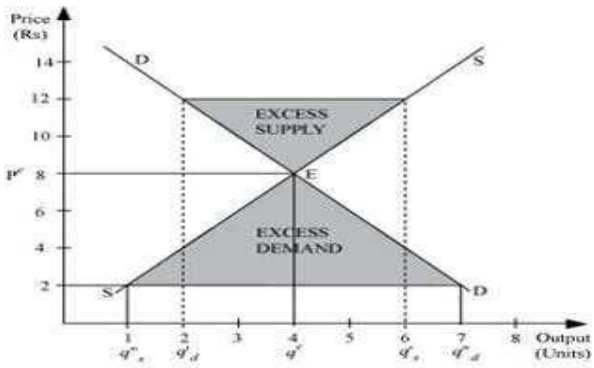
$\underline{q^d(p^*) = q^s(p^*)}$

If can be graphically written as follows.



In the above diagram p1 is the equilibrium price and Q1 is the equilibrium quantity. The situation in which market demand is higher than market Supply at a given price is called excess demand. The situation in which market Supply is higher than market Demand at a given price is called excess Supply.

MARKET EQUILIBRIUM WITH FIXED NUMBER OF FIRMS: When the number of firms is fixed, as a result the market forces attain equilibrium. So the price is determined by Demand and Supply in such a market. It can be explained with the help of the following diagram.



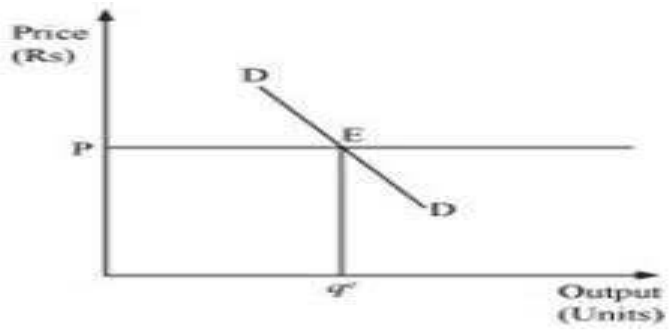
In the above diagram₹ 8 is the equilibrium price and 4 units of output is the equilibrium quantity. All prices above the equilibrium price leads to excess Supply. Price below the equilibrium price leads to excess demand.

MARKET EQUILIBRIUM WITH FREE ENTRY AND EXIT :

A firm in the market with free entry and exit earn only normal Profit. Firms earn normal profit when price is equal to minimum Average Cost. So where there is free entry and exit, equilibrium price will be equal to the minimum point of average cost.

P = minimum AC

Equilibrium of a firm under free entry and exit can be shown by the following diagram.



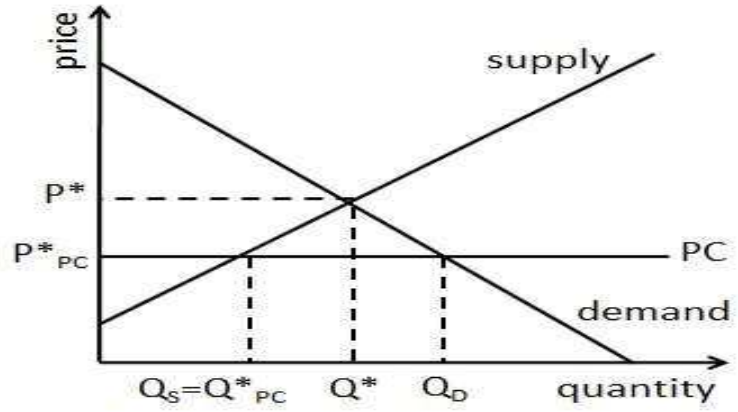
11In the above diagram 'E' is the equilibrium point. 'OP' is the equilibrium price and 'OQ' is the equilibrium quantity.

PRICE CEILING

The government-imposed upper limit on the price of a good or service is called price ceiling. Price ceiling is generally imposed on necessary items like wheat, rice, kerosene, sugar and it is fixed below the market-determined price since at the market-determined price some section of the population will not be able to afford these goods. When the government imposed price ceiling the market faces excess demand. Then the government issues. ration coupons to the consumers so that no individual can buy more than a certain amount of goods and this stipulated amount of goods are sold through ration shops which are also called fair price shops. Price ceiling Causes the following problems.

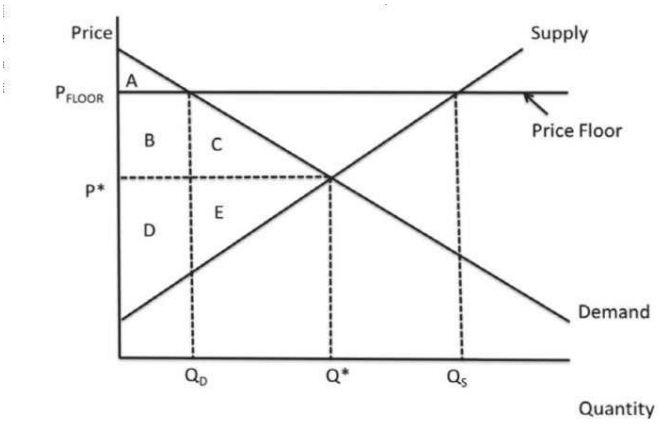
1. Long queues in the ration shops.
2. Activities such as black markets

The following diagram shows the price ceiling in a market.



PRICE FLOOR

For certain goods and services, fall in price below a particular level is not desirable and hence the government sets floors or minimum prices for these goods and services. The government imposed lower limit on the price that may be charged for a particular good or service is called **price floor**. Most wellknown examples of imposition of price floor are agricultural price support programmes and the minimum wage legislation. It causes excess Supply in the market. Such a situation is shown by the following diagram.



CHAPTER – 6

NON - COMPETITIVE MARKETS

Monopoly Market

A market situation in which a single seller or firm controls the entire supply of a product which has no close substitutes. Mono means single and poly means seller So monopoly means single seller. Examples of Monopoly market are INDIAN RAILWAY, KSEB.

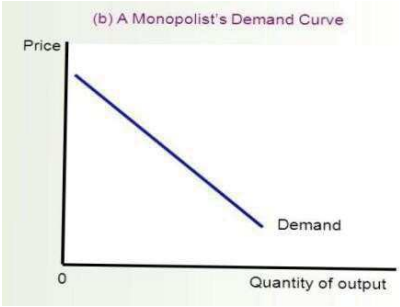
FEATURES OF MONOPOLY MARKET

1. Singles seller for a product
2. Absence of close substitutes
3. Entry of new firms to market is denied
4. Monopolist has complete control over supply of the product
5. Firm and Industry are the same
6. Producer is the Price maker.

Monopolist is the Price-maker, because Being the single seller, the Monopolist can control the price. So he is called the Price maker. He can sell less by increasing price or sell more by decreasing price.

Market Demand Curve of Monopoly

In a monopoly market the firm and industry are the same. So the firm's Demand curve and market Demand curve would be the same. Demand curve of a Monopoly firm is negatively sloped. This is because the monopolist can sell more quantity at a less price and less quantity at a higher price. Market demand curve is shown by the following.

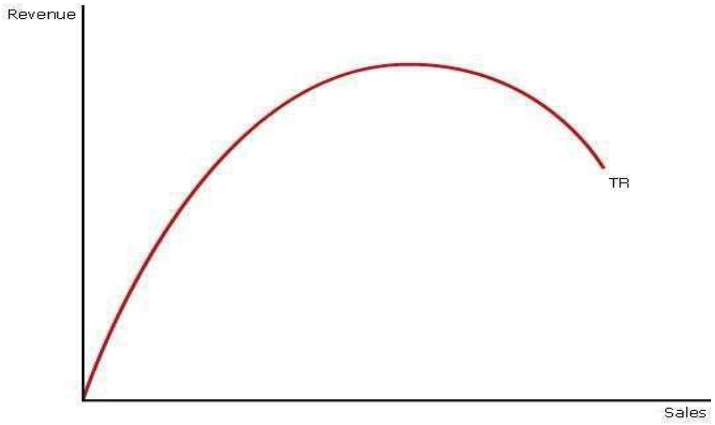


TOTAL REVENUE - TR

Total Revenue is the total amount of revenue earned by a firm By selling output in the market.

TR = P x Q P = PRICE Q = Quantity

Shape of TR Curve is inverted parabola. It is shown by the following diagram.



AVERAGE REVENUE – AR

Average Revenue is Revenue per unit of output AR is calculated by dividing TR by quantity of output sold.

$$\boldsymbol{AR = \frac{TR}{Q} = P \times Q = P \ \therefore AR = P}$$

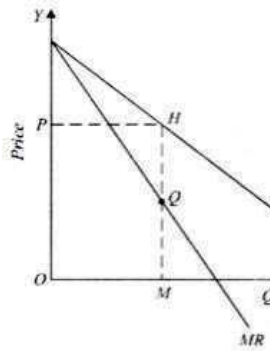
In Monopoly AR is equal to 'P' So AR curve and market Demand curve would be the same.

MARGINAL REVENUE – MR

Marginal Revenue is the addition to the Total revenue,when an extra unit of output is sold. It is the rate of change in TR

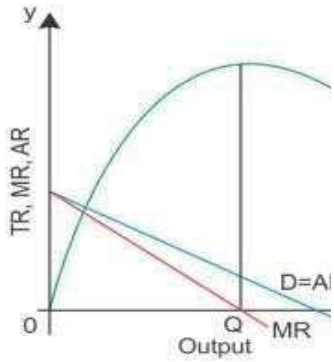
$$\boldsymbol{MR = \frac{\Delta TR}{\Delta Q} \ MRn = MRn - MR(n-1)\ \Delta Q}$$

The following diagram shows AR and MR curves of a monopoly firm.



Relationship between AR and MR
MR will always be less than AR. At any Output MR curve is below AR
If the slope of AR curve is high, MR curve will be far below AR curve If the slope of AR curve is low, the Vertical distance between AR and MR Will be small.
AR and MR curves have negative slopes. MR may be zero or negative. But AR will Never be zero or negative

RELATIONSHIP BETWEEN 'TR' AND 'MR'



- When TR decreases, MR is negative
- When TR is maximum, MR is zero
- When TR increases at a diminishing Rate, MR diminishes

MR and Price Elasticity of Demand

- When MR is positive, price elasticity of Demand will be more than one.(e > 1)
- When MR is zero, price elasticity of Demand will be one.(e = 1)
- When MR is negative, price elasticity of Demand will be less than one.(e < 1)

SHORT RUN EQUILIBRIUM OF A FIRM UNDER MONOPOLY

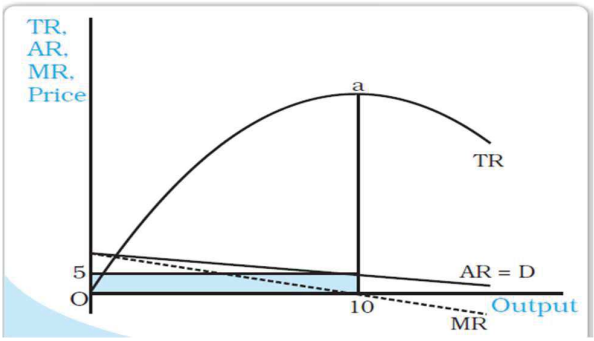
Short run equilibrium can be explained with the following situations.

1. The simple case of zero cost.
2. Total Revenue and Total Cost Curve approach
3. Marginal Revenue and Marginal Cost approach.

14 The simple case of zero cost

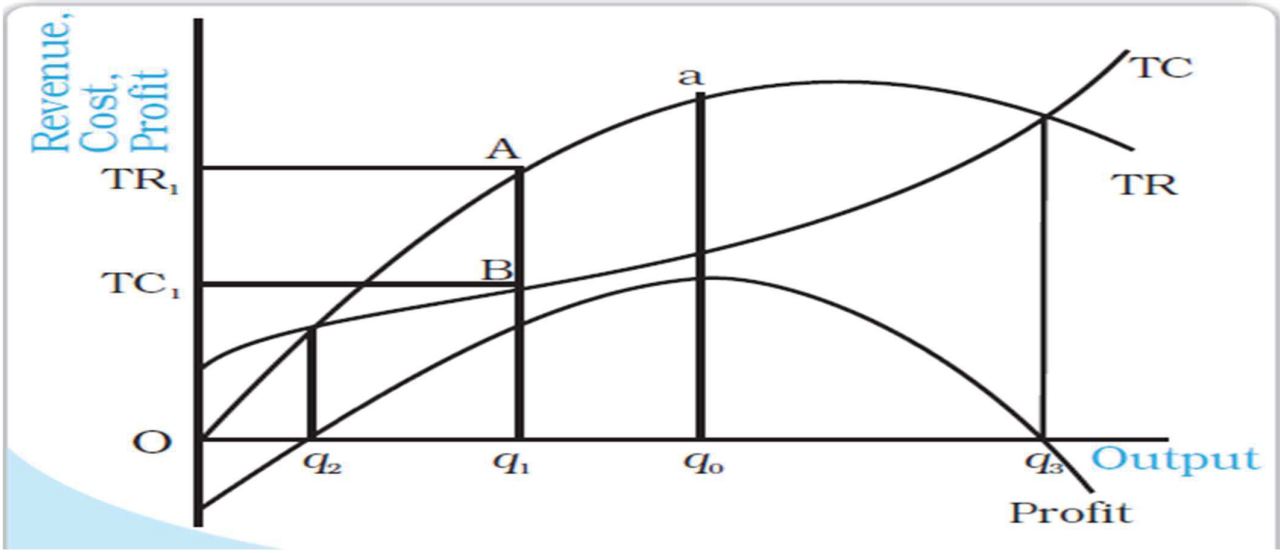
It is a rare situation. In such a situation the monopolist reach equilibrium, when the total revenue reaches maximum. The equilibrium quantity of a monopoly with zero cost will be half of the market demand when price is zero. This is shown by the following diagram.

In the diagram equilibrium price is 5 and equilibrium quantity is 10. So The Total Revenue is 10 ×5= 50.In this situation Total Cost is zero. So the profit = TR -TC = 50 -0= 50.



Total Revenue and Total Cost Curve approach

Under such a situation the firm reaches equilibrium when the difference between Total Revenue and Total Cost is maximum. This is shown by the following diagram.



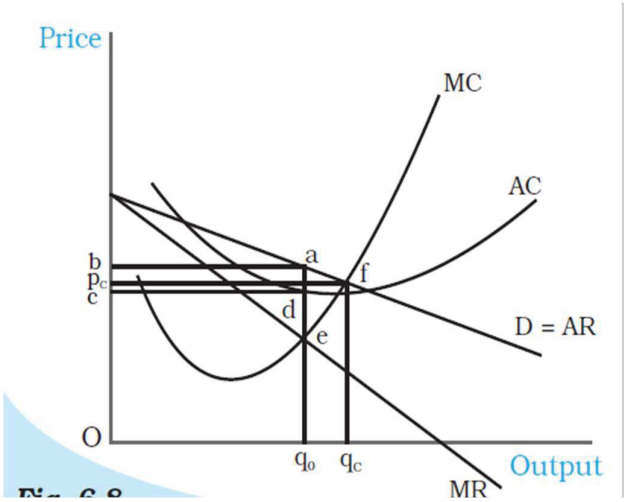
In the above diagram, the points A and C are the breakeven points. Q is the equilibrium quantity. At the equilibrium the earns maximum profit.

Marginal Revenue and Marginal Cost approach

Under such a situation a firm under Monopoly reaches equilibrium when the following conditions are satisfied.

1. Marginal Revenue and Marginal Cost should be equal.[MR=MC] 2. MC curve cuts MR curve from below.

This is shown by the following diagram.



Long Run Equilibrium

In the monopoly market has only one seller both in Short Run and in Long run. So there is no difference between short run and long run under Monopoly.

MACRO ECONOMICS

CHAPTER-1

INTRODUCTION

EMERGENCE OF MACRO ECONOMICS:

Classical Economists like Adam Smith, David Ricardo, J.B. Say etc. are believed in and argued for 'Laisses faire' and 'Say's law of market'. Laissez faire means least intervention of government in the economy.' Say's law means "supply creates its own demand". They believed the invisible hand' will ensure equilibrium and full employment. Classical ideas were proved wrong by the Great Depression of 1929-1930 period in USA. During this period unemployment rate rose from 3% to 25% and the aggregate output in USA fell by about 33%, during this period in 1936 John Maynard Keynes published his book 'The General Theory of Employment Interest and Money'. According to Keynes "Output of an economy is determined by aggregate demand and aggregate supply". This is why a new branch of Economics is emerged. It is called Macro Economics. And John Maynard Keynes is considered as the father of Macro Economics.

CHAPTER-2

NATIONAL INCOME ACCOUNTING

NATIONAL INCOME: National Income is the sum total of the money value of all final goods and services
produced in a country during a financial year. It is the income of the people of a nation during a year.

FINAL GOODS: Goods used for final consumption and not again subjected to the process of production is called final goods. Final goods itself are of two types- consumption goods and Capital goods.

CONSUMER OR CONSUMPTION GOODS: Goods are not subjected to a further process of Production and used by the Consumer directly are called consumer or consumption goods.eg. pen, pencil.

PRODUCER GOODS OR CAPITAL GOODS: Goods once produced and which can be used again for Production are called Producer or Capital Goods. Eg Machines, buildings.

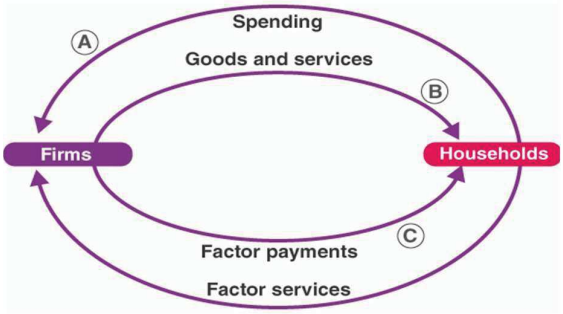
INTERMEDIATE GOODS: Goods used as an input for producing other goods are called Intermediate goods. Eg wood in a paper factory, leather in a shoe factory.
INVESTMENT: Investment means Capital formation. It is the addition to the existing stock of Capital. It is a Flow variable.
GROSS INVESTMENT: Total durables or Capital goods produced during a year in an economy is called Gross Investment.
NET INVESTMENT: The addition to the existing stock of capital is net investment. It is the new capital formation. NET INVESTMENT = GROSS INVESTMENT – DEPRECIATION
DEPRECIATION OR CONSUMPTION OF FIXED CAPITAL: The loss of value of fixed assets due to wear and tear is called Depreciation. It is also called Consumption of fixed capital.
STOCK VARIABLE A Variable that can be measured at a point of time is called a STOCK. It is a static concept. It has no time limit. It is measured at a particular point of time. Eg. Wealth, Capital, Inventory.
FLOW VARIABLE A Variable that is measured in a specific period of time is called FLOW. It is a dynamic concept. It is measured over a period of time. Eg. Consumption, income, change in inventory.
INVENTORY The quantity of output that a firm could not be sold is called Inventory. In short, it is the unsold stock. Inventory is a stock variable. It may accumulate or de cumulate.
ACCUMULATION OF INVENTORY If the value of Inventory at the end of year is more than the value of inventory at the beginning of the year, it is called accumulation of Inventory.
DECUMULATION OF INVENTORY If the value of Inventory at the end of year is less than the value of inventory at the beginning of the year, it is called decumulation of Inventory.
PLANNED ACCUMULATION OF INVENTORY The deliberate increase in the stock of goods of a firm is called Planned Accumulation of Inventories
PLANNED DECUMULATION OF INVENTORY The deliberate decrease in the stock of goods of a firm is called Planned decumulation of Inventories
UNPLANNED ACCUMULATION OF INVENTORY The unexpected increase in the stock of goods due to the fall in sales is called Unplanned accumulation of Inventories.
UNPLANNED DE CUMULATION OF INVENTORY The unexpected decrease in the stock of goods due to the rise in sales is called Unplanned decumulation of Inventories.

Change in inventory = Closing stock - Opening stock.

NET INDIRECT TAX (NIT): Indirect Tax are the tax imposed by the government on goods and services. Sometimes government gives Subsidies to encourage producers. The difference between Indirect Tax and Subsidies is called Net Indirect Tax.

NET INDIRECT TAX = INDIRECT TAX – SUBSIDIES.

TRANSFER PAYMENT OR TRANSFER INCOME OR TRANSFER RETURNS. If is a unilateral payment for which no services are rendered. Usually It is paid by the government. Eg. Old age pension, Scholarship, Widow pension etc.
NET FACTOR INCOME FROM ABROAD (NFIA). It is the difference between the factor income earned by the domestic factors of production employed in the rest of the world and the factor income earned by factors of production of the rest of the world employed in the domestic country.
MACRO ECONOMIC MODEL: functioning of an imaginary economy is called Macro Economic Model.
CIRCULAR FLOW OF INCOME IN A TWO SECTOR ECONOMY. It is a flow which shows how income of an economy circulate different sectors in an economy. The two sectors exist in an economy are Firms and Households. Firms are the Production units and they receive factors of production from the households and give rewards for the factors production. The households spent the entire income received from the forms and nothing to save. This is shown by the flow chart.



In the above diagram the lower most arrow from the household to firms shows the flow of factor services such as Land, Labour, Capital, Entrepreneurship from the household to firms. The flow just above the factor service flow is the counter flow of factor service flow. The firms produce goods and services and it flows into the households. It's counter flow is spending. The flow of factor services and goods and services is called real flow and the flow of factor rewards and spending is called money flow.

SEMINAR ON THE TOPIC 'MEASUREMENT OF NATIONAL INCOME OR GDP'

Respected teachers and My dear friends, the topic of my seminar paper is 'MEASUREMENT OF NATIONAL INCOME' The concept of National Income occupies an important role in Macro Economics. National Income is the sum total of the money value of all final goods and services produced in a country during a financial year plus net factor income from abroad (NFIA). In this seminar paper I would like to present various methods for measuring National Income

INTRODUCTION:

National Income can be measured in three different methods. They are the following.

1. PRODUCT METHOD OR VALUEADDED METHOD
2. INCOME METHOD
3. EXPENDITURE METHOD

PRODUCT METHOD OR VALUEADDED METHOD Under this method National Income can be measured

by adding all the final goods and services produced by each firm in the economy during a financial year. Then the problem of Double Counting arises. Double Counting means value of a good or service is added more than once in the calculation of National Income. To avoid double counting we use Value Added Method.

Value added or Gross Value Added is difference between value of output and intermediate Consumption.

Value Added OR Gross value added = Value of output – Value of intermediate Consumption.

GVAi ≡ Value of sales by the firm (Vi) + Value of change in inventories (Ai) – Value of intermediate goods used by the firm (Zi)

Value of output = market price ✕ quantity of output.

GVAi ≡ Value of sales by the firm (Vi) + Value of change in inventories (Ai) – Value of intermediate goods used by the firm (Zi)

change of inventories of a firm during a year = production of the firm during the year – sale of the firm during the year.

Under value added method we calculate NI by adding GVA of all firms in the economy during a financial year. If there are N firms in the economy, each assigned with a serial number from 1 to N, then

GDP ≡ Sum total of the gross value added of all the firms in the economy ≡ $GVA_1 + GVA_2 + ... + GVA_N$

$$\text{Therefore } GDP \equiv \sum_{i=1}^{N} \text{GVAi}$$

INCOME METHOD: Under this method NI is calculated by adding all the factor income received by owners of factors of production. Income received by land is called Rent (Ri), Income received by labour is called Wages and salaries (Wi), Income received by Capital is called Interest (Ini) And Income received by entrepreneurship is called Profit (Pi). Thus GDP can be written as follows.

$$GDP \equiv \sum_{i=1}^{N} Ri + \sum_{i=1}^{N} Wi + \sum_{i=1}^{N} Ini + \sum_{i=1}^{N} Pi \equiv R + W + In + P$$

EXPENDITURE METHOD Under this 4method of calculating NI on the final expenditure on domestic product. Final expenditure categorized under four heads. The Final Consumption expenditure (Ci),

The Final Investment expenditure (Ii), The Government final Consumption expenditure (Gi) and the export revenue (Xi). Then we substract import expenditure from the sum of C+I+G+X. Then the GDP can be written as follows

$$GDP \equiv \sum_{i=1}^{N} Ci + \sum_{i=1}^{N} Ii + \sum_{i=1}^{N} Gi + \sum_{i=1}^{N} Xi - M \equiv C + I + G + X - M$$

GDP ≡ $RVi \equiv C + I + G + X - M$

CONCLUSION We use three different methods to calculate GDP or NI. Whatever be the method we get identical results because the value we get through production is the value of factor rewards such as Rent, Wages and salaries, Interest and Profit, these income is spent for different expenditures.

$GDP \equiv GVAi \equiv R + W + In + P \equiv C + I + G + X - M$

CHAPTER – 3
MONEY AND BANKING

MONEY: It is very difficult to give a precise definition of money. Various authors have given different definition of money. According to Crowther, "Money can be defined as anything that is generally acceptable as a means of exchange and that at the same time acts as a measure and a store of value". Professor D H Robertson defines money as "anything which is widely accepted in payment for goods or in discharge of other kinds of business obligations.

FUNCTIONS OF MONEY: The major functions of money can be classified into three. They are: The primary functions, secondary functions and contingent functions.

I. Primary functions of money The primary functions of money are;

• Medium of exchange and • Measure of value

i Medium of exchange: The most important function of money is that it serves as a medium of exchange. In the barter economy commodities were exchanged for commodities. But it had experienced many difficulties with regard to the exchange of goods and services.

ii Measure of value: Another important function of money is that the money serves as a

common measure of value or a unit of account. Under barter system there was no common measure of value and the value of different goods were measured and compared with each other.

Secondary functions The secondary functions of money are;

i. Standard of deferred payments Another important function of money is that it serves as a standard for deferred payments. Deferred payments are those payments which are to be made in future. If a loan is taken today, it would be paid back after a period of time. ii. Store of value: Money acts as a store of value. Money being the most liquid of all assets is a convenient form in which to store wealth. Thus money is used to store wealth without causing deterioration

II. CONTIGENT FUNCTIONS The important contingent functions of money are;

i. Basis of credit: It is with the development of money markets the credit market began to flourish.
ii. Distribution of national income Being a common measure of value, money serves as the best medium to distribute the national income among the four factors of production.
iii. Transfer of value: Money helps to transfer value from one place to another.
iv. Liquidity
v. Guarantor of Solvency.

DEMAND FOR MONEY The desire of people to hold Money in hand is called Demand for Money. It is otherwise called liquidity preference. The desire of people to hold money can generally be classified into three motives. They are the following.

I. Transactive Motive: People hold Money in hand for meeting their day to day expenses is called Transactive Motive. Transaction depends on the volume of transactions. When the volume of transaction increases, Transactive Demand for Money also increases. Transactive Demand for Money is a fraction of the volume of transactions in the economy over a period of time. It can be written as follows.

$M^{d}_{T} = KT$ Here M^{d}_{T} = Transaction demand for money, T= Total volume of transaction K = A positive fraction.

In other words 'K' is the inverse of velocity of circulation of money. Velocity of money is the number of times a unit of money changes hands during a period of time. It can be written as follows.

$$M^{d}_{T} = KT, \quad T = \frac{M^{d}_{T}}{K}, T = M^{d}_{T} \times \frac{1}{K}, \quad V = \frac{1}{K}, \quad T = M^{d}_{T} \times V, \; V = \frac{T}{M^{d}_{T}}$$

In a real Economy Transactive Demand for Money depends on the GDP. If GDP increases, Transactive Demand for Money also increases. Then the equation can be written as follows.

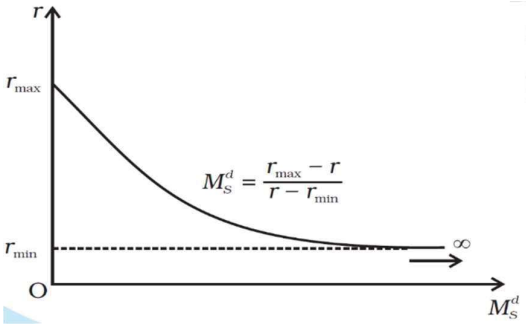
$M^{d}_{T} = KPY$ *Here* $k = positive\ fraction, P = Price\ level, Y = Real\ GDP$

II. SPECULATIVE MOTIVE: The desire of people to hold money in order to gain from bonds is called speculative motive. Here bonds mean any assets like gold, land etc. In addition to bonds. The relationship between interest rate and bond price is inverse.ie, when the market rate of interest is high the bond price will be less. Suppose the market rate of interest is high, then the price of the bond will be low. Expecting a fall in Market rate of interest in future, people will invest in bonds now to make profit in future. Then the Speculative Demand for Money will be low here, on the other hand suppose the market rate of interest is very low now. Expecting a rise in Market rate of interest in future people will keep Money with them. Here Speculative Demand For Money will be infinity. Such a situation Speculative Demand for Money is perfectly elastic, it is called Liquidity Trap. Speculative demand for money can be written as follows.

$$M^{d}_{s} = \frac{r_{max} - r}{r - r_{min}}$$

here rmax &rmin = maximum &minimum rate of interest, r = currenrt rate of interest.

It can be shown diagrammatically as follows.



The Total money Demand in an Economy can be written as follows.

$$M^{d} = M^{d}_{T} + M^{d}_{s} = \text{KPY} + \frac{r_{max} - r}{r - r_{min}}$$

III. PRECAUTIONARY MOTIVE: People often demand money as a precaution against an uncertain future. Unexpected expenses, such as medical or car repair bills, often require immediate payment. They need to have money available in such situations is referred to as the precautionary motive for demanding money.

SUPPLY OF MONEY: The total amount of money available in the Economy at a specific point of time is called Money Supply. From 1st April 1977, RBI publishes 4 alternative Money Supply in India. They are the following.

$M1 = CU + DD$ CU = Currency DD = Demand Deposits.

M2 = M1+ saving bank deposits with post office.

M3 = M1 + Net time deposits with Commercial Banks.

M4 = M3+ Total deposits with Post Office savings organisations (excluding National Savings Certificates) M1 and M2 are together called Narrow Money. M3 and M4 are together called Broad Money. M1 is the most liquid money and M4 is the Least liquid money. M3 is referred to as aggregate monetary resources.

CHAPTER-4
DETERMINATION OF INCOME AND EMPLOYMENT

EX Ante and Ex Post

The planned or intended value of a Variable is called Ex Ante. The actual or realised value of a Variable is called Ex Post.

EX Ante Consumption:

The planned values of Consumption in an economy is called ex ante Consumption. People spent a major portion of their Income for Consumption and rest for saving. So Income is the sum of Consumption and Savings. $Y = C + S$. There is a functional relationship exist between Consumption and income. It is called Consumption function or propensity to consume. Mathematically it can be written as follows.

$C = f(y)$

The ratio between Consumption and Income is called Average Propensity to Consume (APC).

The ratio between Savings and Income is called Average Propensity to Save (APS).

$$\mathbf{APC} = \mathbf{C:Y} \therefore \frac{C}{Y} \qquad \mathbf{APS} = \mathbf{S:Y} \therefore \frac{S}{Y} \quad \mathbf{APC} + \mathbf{APS} = \frac{C}{Y} + \frac{S}{Y} = \frac{C+S}{Y} = \frac{Y}{Y} = 1$$

The ratio between change in Consumption and change in Income is called Marginal Propensity to Consume (MPC).

The ratio between change in Savings and change in Income is called Marginal Propensity to Save (MPS).

$$MPC = \Delta C : \Delta Y = \frac{\Delta C}{\Delta Y} \quad MPS = \Delta S : \Delta Y = \frac{\Delta S}{\Delta Y} \quad MPC + MPS = \frac{\Delta C}{\Delta Y} + \frac{\Delta S}{\Delta Y} = \frac{\Delta Y}{\Delta Y} = 1$$

Relationship between APC and APS. MPC and MPS.

APC + APS = 1; 1- APC = APS; 1- APS = APC *MPC+ MPS =1; 1- MPC = MPS; 1- MPS = MPC*

Ex ante Consumption includes both Autonomous Consumption and Income level Consumption. The level of Consumption at the Income level zero is called

21 Autonomous Consumption. It is denoted by $\bar{C}$ and Income level Consumption is denoted with **c.y.**(here c is MPC and y is level of income. Then we can write ex ante aggregate consumption Can be written as follows.

$$C = \bar{C} + c.Y$$

Here C = ex ante aggregate Consumption,

$\bar{C}$ = autonomous Consumption, c= MPC, y= income

EX ANTE AGGREGATE INVESTMENT

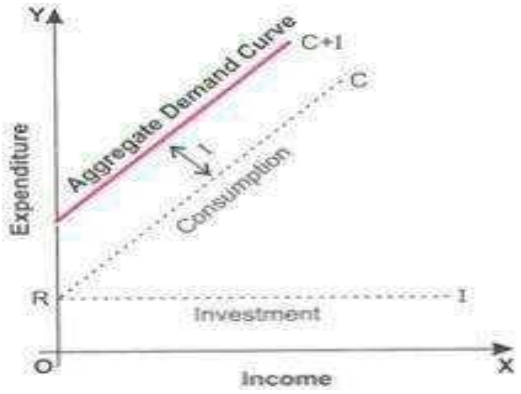
Ex ante investment is what the investors plan or intends to invest at different levels of income in the economy. Investment demand in an economy mainly depends on Marginal Efficiency of capital. MES is the expected annual returns of an additional unit of investment. We assume that the investment Demand I as autonomous investment in the economy.

So $I = \bar{I}$

EX ANTE AGGREGATE DEMAND (AD) :- Aggregate Demand is defined as the total demand for all final goods and services produced in the economy in an accounting year.It is the Aggregate Expenditure of the economy on goods and services. In a simple economy with two sectors, the aggregate demand is the sum of Consumption Expenditure and Investment Expenditure.

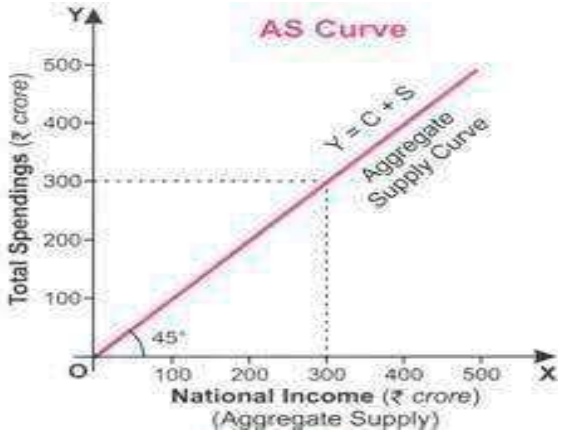
$$\mathbf{AD = C+I,\ AD = \bar{C} + cy + \bar{I},\quad AD = \bar{A} + cy}$$

The following is the aggregate demand curve.



Aggregate Supply

Aggregate Supply is defined as the total supply of all final goods and services produced in the economy in an accounting year. It is also termed as Aggregate output of final goods and services. It is always equal to Aggregate income of the economy. That is, AS = Y Aggregate Supply Curve is a 45° line.



INCOME DETERMINATION (PRODUCT MARKET EQUILIBRIUM)

In an economy, income and employment are in equilibrium when Aggregate Demand for final goods and services (AD) and Aggregate Supply or Aggregate Output (AS) are equal.

$$AD = AS. \quad OR \quad \bar{A} + cy = Y$$
$$= \bar{A} = Y - cY$$
$$Y^* = \frac{\bar{A}}{1-c}$$

EXCESS DEMAND & DEFICIENT DEMAND

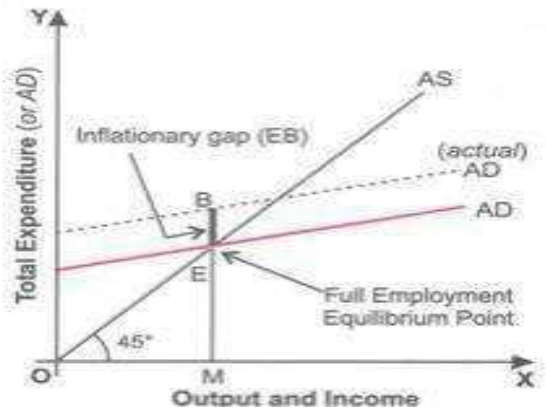
When AD rises above AS, there will be Excess Demand. (Inflationary Gap),When AD falls below AS, there will be Deficient Demand. (Deflationary Gap), When AD = AS, it is ealled Effective Demand

AD > AS ⟶ EXCESS DEMAND

AD < AS ⟶ DEFICIT DEMAND

AD = AS. ⟶ EFFECTIVE DEMAND

The following diagram shows equilibrium of a two sector economy.



CHAPTERS – 5

GOVERNMENT BUDGET AND THE ECONOMY

Objectives of Government Budget

A Government performs three distinct economic functions. They are the following.

Allocation Function. Allocation function refers to making available to all public goods to distributing effectively among all the people of the economy. Public goods are those goods which cannot bought and sold in the market. Eg. Roads, parks, street lights. Etc. Public goods must be provided by the government because of the following reasons

Non Excludability: No one can be excluded from the consumption of such goods.

Non rivalry: There is no rivalry exist in the economy for providing public goods.

Difficulty in charging price: It is very difficult to charging price for charging price for consumption of public goods.

Redistribution function: Distribution function refers to the activities of government to reduce inequality in income and wealth in the economy.

Stabilization function: It refers to the activities of government to maintain price and economic stability in the economy.

GOVERNMENT BUDGET AND IT'S COMPONENTS : It is the official financial statement of a government which shows ex ante receipts and expenditure over a financial year. Its main components are shown by the following flowchart.

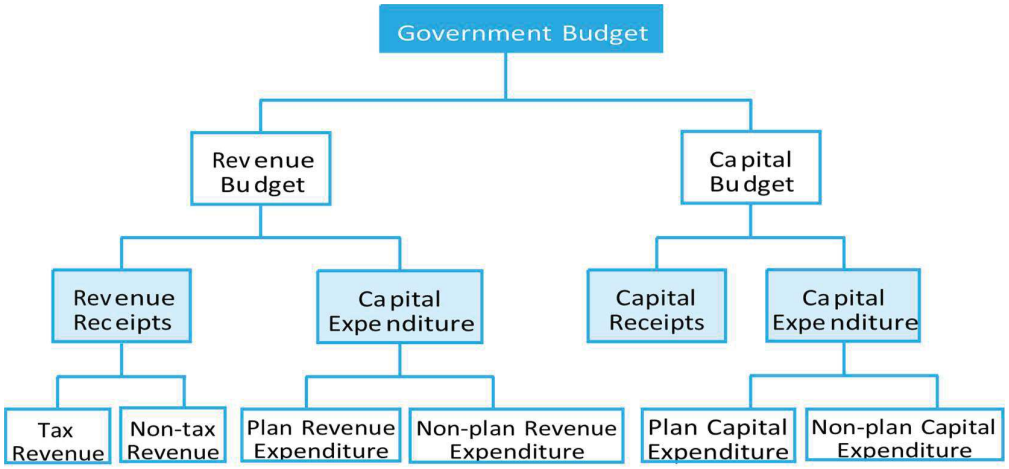


Chart 1: The Components of the Government Budget

Components of Government Budget : Government budget, comprises of two parts—(a) Revenue Budget and (b) Capital Budget.

(a) Revenue Budget: Revenue Budget contains both types of the revenue receipts of the government, i.e., Tax revenue and Non tax revenue ; and the Revenue expenditure.

(i) Revenue Receipts: These are the receipts that neither create any liability nor reduction in assets of the government. It includes tax revenues like income tax, corporation tax and non-tax revenue like fines and penalties, special assessment, escheat etc.

(ii) Revenue Expenditure: An expenditure that neither creates any assets nor cause reduction of liability is called revenue expenditure.

24 **(b) Capital Budget:** Capital budget contains capital receipts and capital expenditure of the government. (i) Capital Receipts: Government receipts that either creates liabilities (of payment of loan) or reduce assets (on disinvestment) are called capital receipts. Capital receipts include items, which are non-repetitive and nonroutine in nature.

(ii) Capital Expenditure: This expenditure of the government either creates physical or financial assets or reduction of its liability. Acquisition of assets like land, machinery, equipment, its loans and advances to state governments etc. are its examples.

TYPES OF BUDGET : According to Receipts and Expenditure Budgets are three types. They are the following.

Surplus Budget: When Receipts exceeds Expenditure, Such type of budget is called Surplus budget.

Surplus Budget → Receipts > Expenditure

Deficit Budget When Expenditure exceeds receipts, Such type of budget is called Surplus budget.

Deficit Budget → Receipts < Expenditure

Balanced Budget: When Receipts and Expenditure are equal, Such type of budget is called Balanced Budget.

Balanced Budget → Receipts = Expenditure

TYPES OF GOVERNMENT DEFICIT

Revenue Deficit: The revenue deficit refers to the excess of government's revenue expenditure over revenue receipts

Revenue deficit = Revenue expenditure – Revenue receipts.

Fiscal Deficit: Fiscal deficit is the difference between the government's total expenditure and its total receipts excluding borrowing

Gross fiscal deficit = Total expenditure – (Revenue receipts + Non-debt creating capital receipts)
Primary Deficit: It is the difference between fiscal deficit and the interest payments Gross primary deficit = Gross fiscal deficit – net interest liabilities

CHAPTER-6

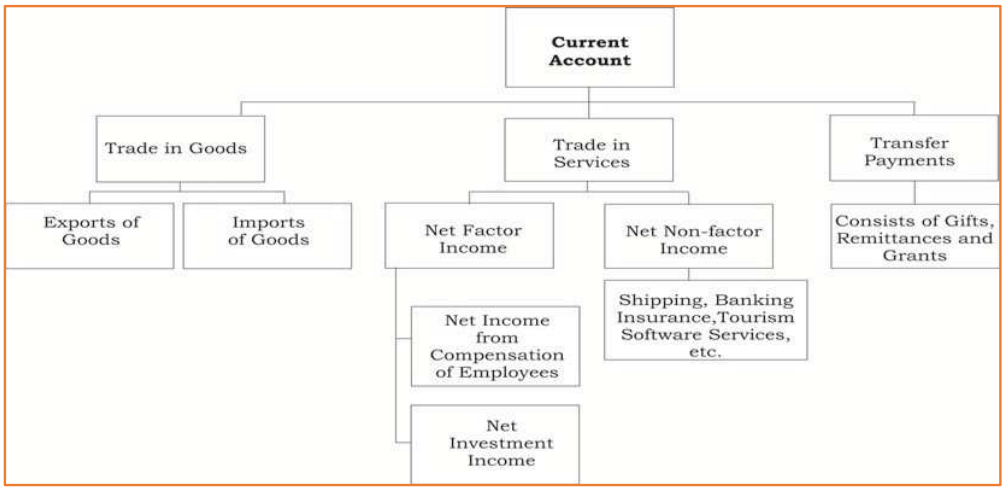
Open Economy Macro Economics

BALANCE OF PAYMENTS

The balance of payments (BoP) record the transactions in goods, services and assets between residents of a country with the rest of the world for a specified time period typically a year. There are two main accounts in the BoP — the current account and the capital account.

Current Account

Current Account is the record of trade in goods and services and transfer payments. Trade in goods includes exports and imports of goods. Trade in services includes factor income and non-factor income transactions. Transfer payments are the receipts which the residents of a country get for 'free', without having to provide any goods or services in return. They consist of gifts, remittances and grants. They could be given by the government or by private citizens living abroad.



Balance on Current Account

Current Account is in balance when receipts on current account are equal to the payments on the current account. A surplus current account means that the nation is a lender to other countries and a deficit current account means that the nation is a borrower from other countries.

Current Account Surplus	Balanced Current Account	Current Account Deficit
Receipts > Payments	Receipts = Payments	Receipts < Payments

Balance on Current Account has two components:

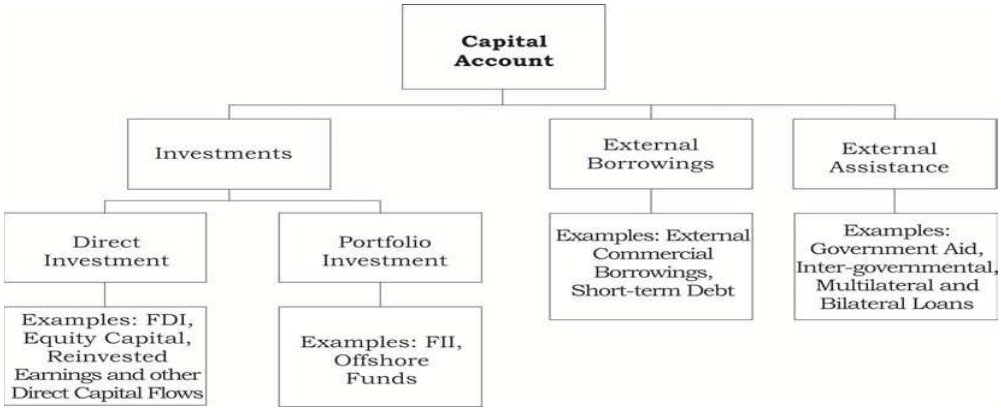
- ·Balance of Trade or Trade Balance
- ·Balance on Invisibles

Balance of Trade (BOT) is the difference between the value of exports and value of imports of goods of a country in a given period of time. Export of goods is entered as a credit item in BOT, whereas import of goods is entered as a debit item in BOT. It is also known as Trade Balance. BOT is said to be in balance when exports of goods are equal to the imports of goods. Surplus BOT or Trade surplus will arise if country exports more goods than what it imports. Whereas, Deficit BOT or Trade deficit will arise if a country imports more goods than what it exports.

Net Invisibles is the difference between the value of exports and value of imports of invisibles of a country in a given period of time.

Capital Account

Capital Account records all international transactions of assets. An asset is any one of the forms in which wealth can be held.



Balance on Capital Account

Capital account is in balance when capital inflows are equal to capital outflows. Surplus in capital account arises when capital inflows are greater than capital outflows, whereas deficit in capital account arises when capital inflows are lesser than capital outflows.