

Module 1

BUSINESS ECONOMICS

ECONOMICS

- As an individual, what do you think is the essence of studying economics?????
- In front of you are candies that you could get and eat....come on, everybody is invited to get it...don't be shy!!!!
- What's your observation?????



ECONOMICS

- The wise production and use of wealth to meet the needs and wants of the people.
- It is a branch of knowledge concerned with the production, consumption, and transfer of wealth.
- From the Greek word **OIKONOMIKOS**
Oikos = Household / Home
Nomos = Management

ECONOMICS

- Economics is a social science which studies the economic behaviour of the people and economic phenomena.
- It is fundamentally the study how people allocate their limited resources to produce consumer goods and services to satisfy their endless wants or to maximize their gains.
- All societies have more wants than resources, hence a society must allocate the limited resources appropriately.

ECONOMICS

- Father of modern economics 'ADAM SMITH'
- Economics - The science of wealth
- Concerns of economics
 - Production
 - Distribution
 - Consumption
 - Public finance [govt expenditures(taxes & borrowing) and revenue]

Streams of Economics

MICROECONOMICS

- specific
- Branch of economic analysis which studies the economic behaviour of the individual unit, may be a person, a particular firm or a particular household.
- Goal – explain the prices and quantities of individual goods and services

MACROECONOMICS

- General/ economy as a whole
- Branch of economic analysis which studies the economic behaviour of not one particular unit, but of all the units combined together
- Goal – explain average prices, total employment, income and production

MICROECONOMICS

- Studies the flow of economic resources /factors of production from any individual owner to any individual user.
- study of economic decision - making by micro units
- Advantage – helps to formulate appropriate policies for resource allocation at the firm level

MACROECONOMICS

- Studies the flow of income and expenditure between different sectors of the economy
- Deals with the management of income, expenditure, wealth or resources of a nation
- Advantage – helps to formulate appropriate policies for controlling inflation, unemployment etc

Types of Economics

- A. **Household economics** – common use of economics is for family. At this level anyone who knows the economic principles will be able to improve the running of the household.
- B. **Business economics** - Business economics is the application of economic theory and methods to business decision making. Business economics deals with issues such as business organization, management, expansion and strategy.
- C. **National economics** – it deals with the management of income, expenditure, wealth or resources of a nation
- D. **International economics** – it is the highest stage of economic activities which involves the business of one country with the other countries.

IS ECONOMICS A SCIENCE ?????

Explain why, if YES.....

Explain why not ,if NO.....

ANSWER

- It is a social science because the subject matter of economics is people /societies and their behaviour, unpredictable in nature

Needs vs. Wants

- Needs – what people must have to live.

Food
Clothing
Shelter



- Wants – the things we would like to have, but can live without.



Supply and Demand

- Supply is the amount of a good or service available.
- Demand is what people are willing and able to buy.



I would like to buy one candy cane, please.



Concepts in economics

1) SCARCITY

- Not enough resources to meet demand
- Limited resources but unlimited wants
- Most of the goods and services satisfying human wants are scarce / limited. These goods and services are called scarce because their demand is more than the supply , **(D>S)**
- It is the fundamental economic problem
- All economic activities revolve around trying to solve this problem
- It is a measure of supply

SCARCITY



"I scream, you scream, we all scream
for ice cream! La, la, la, la, la!"



Oh no! Ice cream is scarce!

Economic good

- Economic goods are presumed to be scarce in supply, they can't at one time meet the demand of humans.

Eg : Product is scarce, then supply is low, but many people want to buy that is demand is high.

‘Demand is high because of a low supply caused by scarcity’

2) CHOICE

- Having scarcity of resources, we need to choose which resources to use and how to utilize them
- Alternative use of resources give rise to the problem of choice.

Eg: Piece of land –factory/farming/constructing school- choose what is best for us

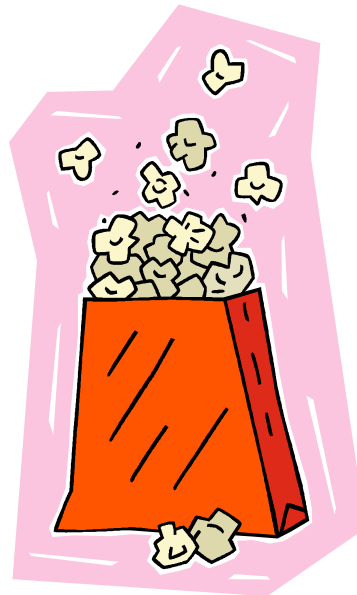
- Problem of choice is an economic problem

Choice

You make an economic choice when you only have money for certain items, not all.

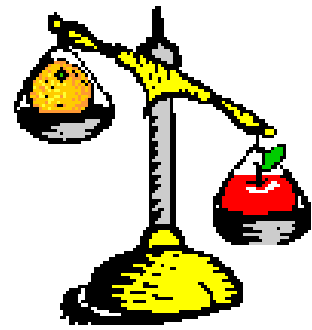
Example:

I do not have enough money for both popcorn and a pretzel. I must choose, so I buy the popcorn. That is my economic choice.



YUM!

Opportunity cost



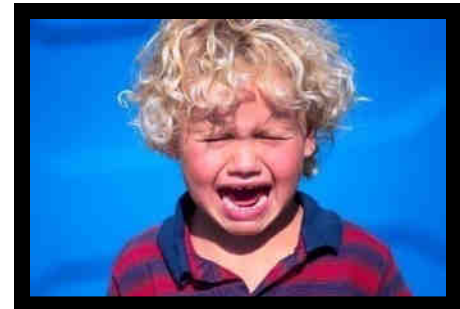
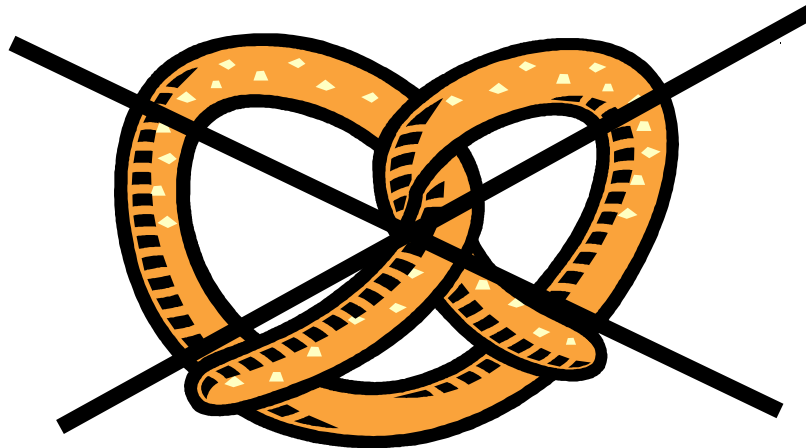
- The true cost of choosing one alternative over the other.
- Opportunity cost of putting the use of resources for a given purpose is measured by the benefits sacrificed on account of not putting the same in the next best alternative use.
- It measures the cost of the given quantity of a good in terms of the quantities other goods that could be obtained in its place.
- Scarcity of means and their alternative uses are the main causes giving rise to economic problems.

Opportunity Cost

Opportunity cost what you must give up when you make an economic choice.

Example:

I chose the popcorn, so I have to give up the pretzel. That is my opportunity cost.



3) Resource allocation

- Economic problems arise in an economy because of the unlimited wants of human being, scare means and alternative use of means
- Economics is concerned with the efficient allocation of scare resources
- Three problems of economy
 1. What to produce and how much to produce?
 2. How to produce?
 3. For whom to produce?

1) What to produce and how much to produce?



- In an economy first problem is what goods and services to be produced with the scarce resources so that maximum wants of the people are satisfied
- The main cause to this problem is that the resources are scarce in relation to their wants.
- It is the problem of allocation of scarce resources
- What is the point of making a product that no one is going to buy. Businesses need to make money...so they choose products that people want.

- A number of choices are available in the economy. ie we can produce a number of commodities with our limited resources
- When an economy decides about the goods and services it is to produce, it also decides about the quantity to be produced
- This decision depends upon the knowledge on how much production of different goods is possible with the available resources.
- For a rational allocation of resources, a society must set priorities among their needs.

2) How to produce?



- Societies have to decide the best combination of factors to create the desired output of goods and services.
 - Here arise a problem of which technique is to be adopted.
 - Two types of techniques are there
 1. Labour intensive technique - more labour and less capital
 2. Capital intensive technique - more capital and less labour
 - Choice depends on the prices of the factors of production
- ie if labour is cheap and capital is expensive then Labour intensive technique is adopted.

3) For whom to produce



- All societies need to decide who will get the output from the country's economic activity, and how much they will get
- The distribution of goods can be done equally or on the basis of needs or on the basis of the contribution of an individual in the production of goods and services.

Did Apple market the ipod to the large population of elderly people in the U.S. or the youth? Why?

Trade-Offs & Opportunity Costs



- Scarcity makes us to make choices. Because of scarcity every choice involves a trade off – comparison of costs and benefits.
- Because people cannot have everything they want, they face trade-offs, or alternative choices
- This will lead to giving up something to get something else.

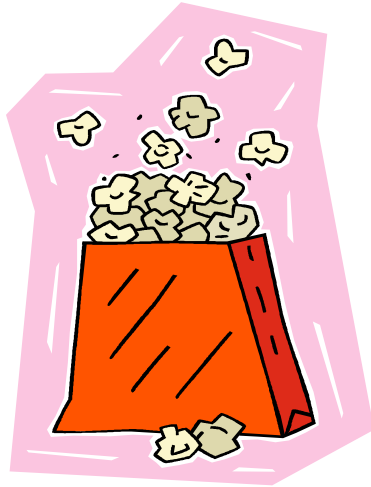
For example

- 'Should I go out to dinner tonight, or would I rather save my money so I can go to the movies tomorrow?'
- Since your resources - such as time and money - are limited, you must choose how to best allocate them by making some trade-offs.
- Most of us don't have so much money that we are in a position to buy everything we desire. We must put thought into every purchase and how it affects our bank account. We also must think about what type of satisfaction that purchase will give us.
- As a result, to get one thing that we like, we usually have to give up another thing that we also may like. Making decisions requires trading off one item against another.

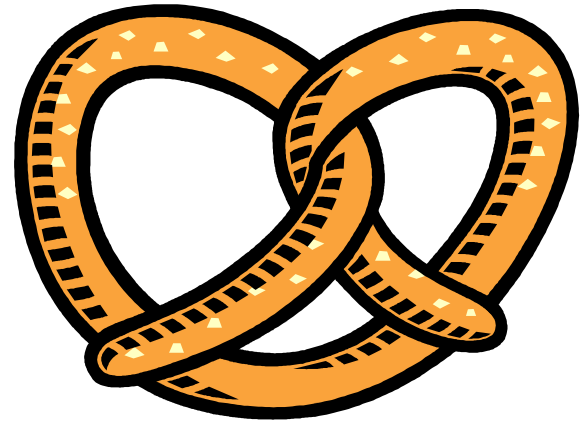
- In economics, the term **trade-off** is often expressed as an **opportunity cost**, which is the most preferred possible alternative.
- A trade-off involves a sacrifice that must be made to get a certain product or experience.
- A person gives up the opportunity to buy 'good B,' because they want to buy 'good A' instead.
- After determining trade off ,a cost can be assigned to what you have given up
- Opportunity cost is the value of the alternative you gave up.

Opportunity Cost

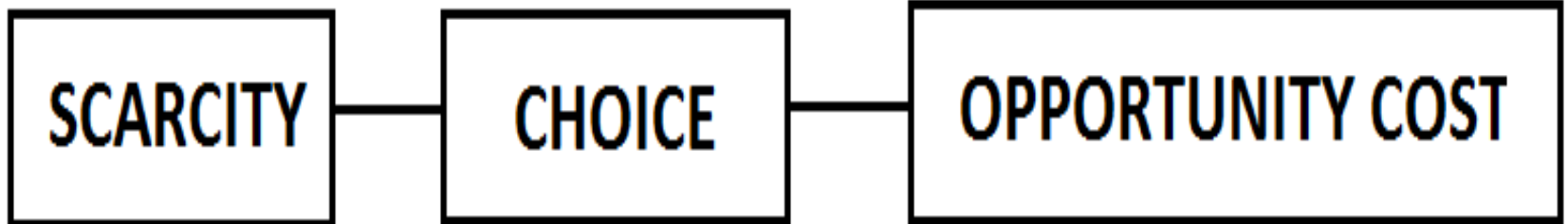
- Popcorn



- Pretzel



MAKE A CHOICE



- Opportunity cost of a decision is the cost of sacrificing the alternatives to that decision .
- The question of sacrificing arises because of the fundamental economic problem of scarce resources which forces an individual to choose the best out of the available alternatives.
- Choosing the best automatically means leaving behind all the remaining alternatives
- Opportunity cost includes more than just the monetary cost of something.
- It can also include time and really anything else that has to be given up to get something.

- Scarcity, choice and opportunity cost are interlinking concepts in economics
- As the economic resources are scarce, individuals /companies must make a choice about which resources to use.
- The opportunity cost represents the value of the alternative given up when choosing one resource over other
- ie Scarcity of resources bring about choice,whereby there is a selection of one among the many available resources; when choice is made, opportunity cost is realized which is an alternative foregone.

Marginal analysis

- Marginal analysis is the analysis of the benefits and costs of the marginal unit of a good or input
- It examines the effects of additions/subtractions from a current situation
- It is concerned with finding out the change in the total arising because of one additional unit
- Marginal analysis is used to assist people in allocating their scarce resources to maximize the benefit of the output produced
- It is a very valuable tool in the economic way of thinking because it considers the marginal effects of change.
- This concept deals with a unit increase in cost/revenue/utility

Marginal revenue (MR)

- Total revenue (TR) is the total amount receives from the sale of total goods
- Average revenue (AR) is the total amount receives from the sale divided by the number of units of goods sold
- Marginal revenue (MR) is the change in total revenue resulting from selling an extra unit of goods

$$\mathbf{MR = TR_N - TR_{N-1}}$$

TR_N = total revenue of 'n' products

TR_{N-1} = total revenue of 'n-1' products

Marginal cost (MC)

Fixed Costs	=	Cost incurred at zero production
Variable Costs	=	Vary with output at constant rate
Total Cost	=	Sum of fixed and variable costs
Average Cost	=	Total cost ÷ no of units of output
Marginal Cost	=	Additional cost of producing one extra of output

$$MC = TC_N - TC_{N-1}$$

TC_N = Total cost of 'n' products

TC_{N-1} = Total cost of 'n-1' products

Marginal utility (MU)

- Utility represents the satisfaction people derive from consumption of goods and services
- Total Utility is the total satisfaction a person receives from consuming a particular quantity of good.
- Marginal Utility is the additional utility gained from consuming an additional unit of some good

$$\mathbf{MU = TU_N - TU_{N-1}}$$

TU_N = total utility of 'n' products

TU_{N-1} = total utility of 'n-1' products

Marginal analysis

- Marginal analysis forms the basis of most managerial decisions
- It supports decision making based on marginal/incremental changes to resources instead of one based on totals or averages
- Any decision would be worth only when the marginal benefit occurring from it would be more than the marginal cost



EXAMPLE



Company name: S4 ECE CLASS

- Product:
- Total cost : 25000/-
- No of product produced: 50
- Price of each product: 800/-
- Total revenue: $800 * 50 = 40000/-$

If situation changes

- No of product produced: 51
- Price of each product: 800/-
- Total revenue: $800 * 51 = 40800/-$
- Total cost : 25850/-

TAKE A DECISION

Production possibility curve

- The problems of an economic system can be explained with the help of production possibility schedule and production possibility curve.
- Production possibility schedule is the schedule that shows alternative production possibilities of two sets of goods with the given resources and technique of production.
- Production possibility curve is graphic representation of production possibility schedule, showing alternative production possibilities of two sets of goods with the given resources and technique of production.
- Production possibilities curve – a tool to formalize the concepts of scarcity and cost.

Production possibility curve

- A production possibility curve measures the maximum combination of outputs that can be achieved from a given number of inputs.
- It slopes downward from left to right.
- Why is the production possibility curve is not a straight line? If the shape of the PPF curve is a straight-line, the opportunity cost is constant as production of different goods is changing. But, opportunity cost usually will vary depending on the start and end points

Assumptions

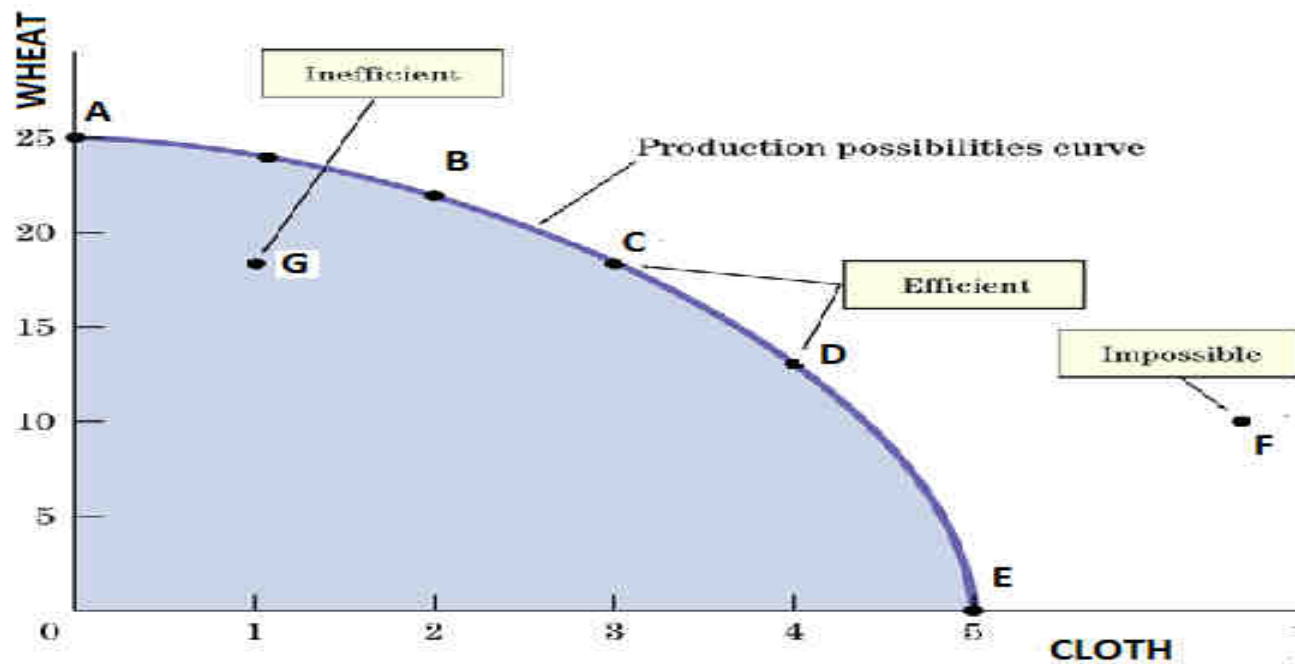
1. Economy is operating efficiently
2. Available supply of resources is fixed in quantity and quality at this point of time
3. No new development in technology during analysis
4. Economy produces only 2 types of products

- Choices will be necessary because resources and technology are fixed
- A production possibilities table indicates some of the possible choices

Example

- An economy can produce two commodities – WHEAT and CLOTH
- If all the resources of production are used for the production of wheat alone, then 100 lakhtonnes of wheat can be produced
- On contrary, if all resources of production are used for the production of cloth alone, then 400 bales of cloth can be produced
- If the economy produces both the goods, then within theses limits various combinations of two goods can be produced

<u>GOODS</u>	<u>WHEAT</u> (lakh tones)	<u>CLOTH</u> (1000 bales)
A	100	0
B	90	1
C	70	2
D	40	3
E	0	4



- Representing various production possibilities on a graph ,we get production possibility curve.
- In the graph point F represents unattainable combination (scarcity) and point G represents inefficient use of resources
- production possibility curve illustrates three concepts
 1. Scarcity
 2. Choice
 3. Opportunity cost

Utility

- Utility represents the satisfaction people derive from consumption of goods and services
- It is subjective
- Utility is different from person to person
- It can be measured in two ways
 1. Cardinal utility
 2. Ordinal utility

Cardinal utility

- Cardinal utility analysis is based on the cardinal measurement of utility which assumes that utility is measurable and quantifiable.
- This theory was developed by neo-classical economist Alfred Marshall
- It is expressed as a quantity measured in hypothetical units which called utils
- Since utility can be measured in specific units, it can also be added ie we have total utility and marginal utility

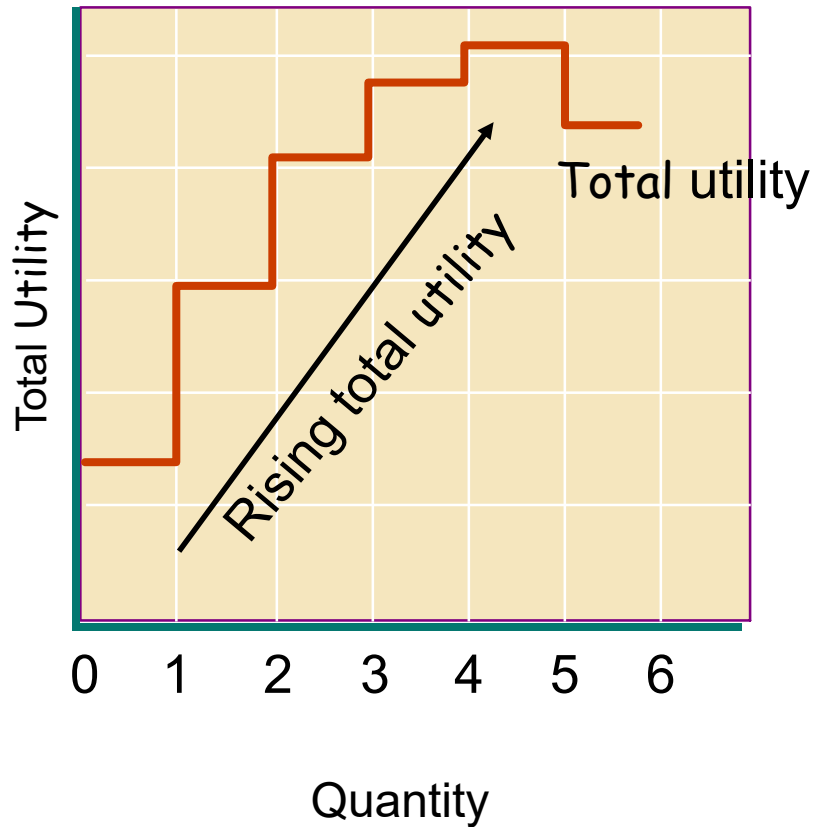
- Total utility(TU) is a measure of overall satisfaction
- It is the total satisfaction derived from the consumption of all units of a good/service.
- Marginal utility(MU) is the additional satisfaction a consumer gains from consuming one more unit of a good/service
- For a consumer TU from the consumption of a good is the summation of utilities derived from all the 'n' units
- The utility gained from a unit depends upon the intensity of the desire for it
- When a person consumes successive units of a good ,his need is satisfied to various degrees in the process of consumption and the intensity of his need goes on decreasing
- For first unit of good,TU and MU are same. then the MU falls with successive units and therefore TU increases at a decreasing rate.
- If U_i stands for utility of i^{th} unit of good ,then

$$TU_n = \sum U_i$$

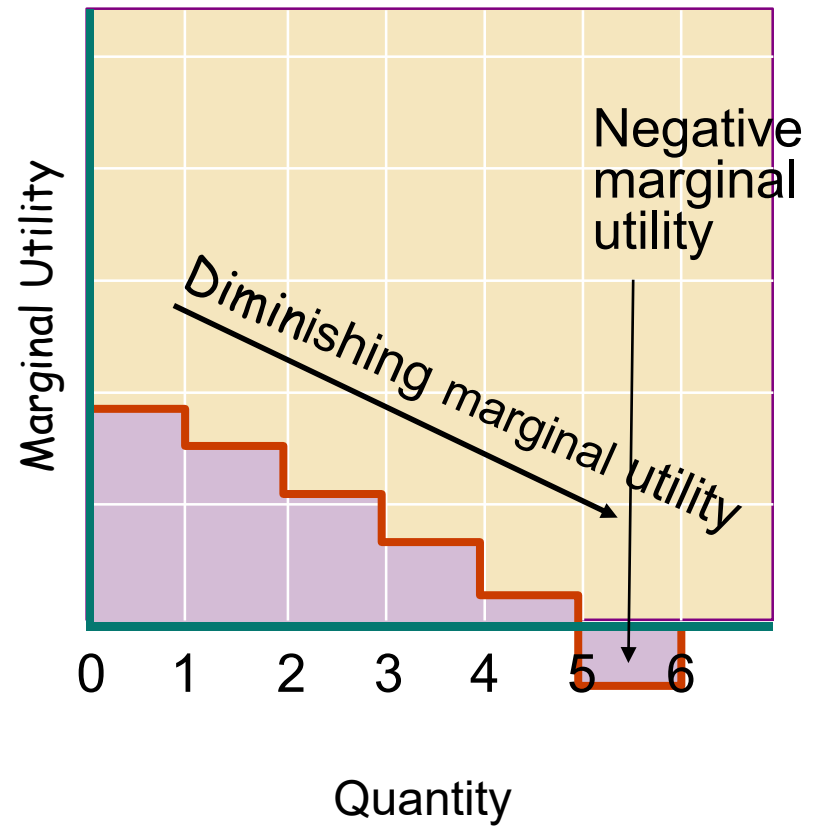
$$MU_n = TU_n - TU_{n-1}$$

Comparison

TOTAL UTILITY



MARGINAL UTILITY



Ordinal utility

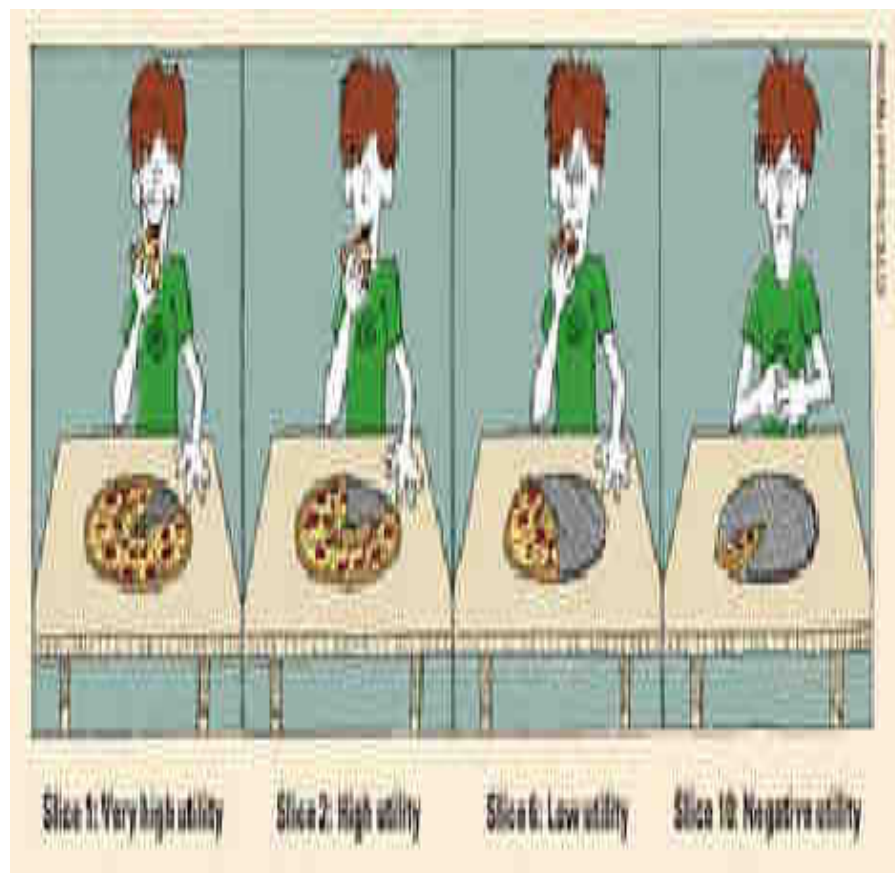
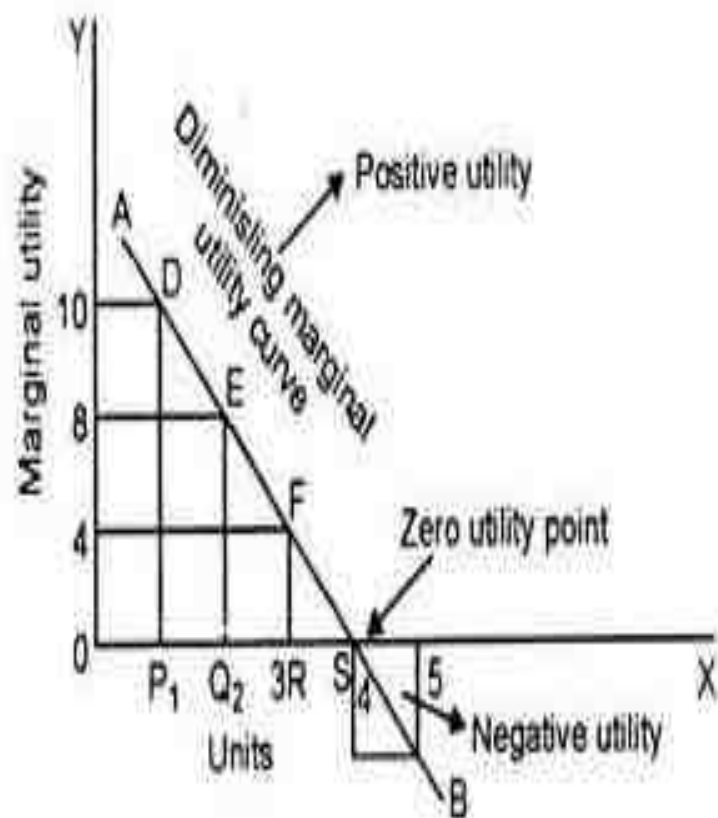
- It is purely subjective and is immeasurable
- Ordinal measurement of utility is the one in which utility cannot be expressed in absolute units
- Preferences among goods can be ranked using ordinal numbers such as first, second etc
- Utility from one source may be equal to, more than, less than utility from another source. but it is impossible to state the difference in absolute or numerical units.
- Cardinal utility is a theoretical phenomenon and has less validity in practice. Utility is best measured in ordinal terms.
- To overcome this limitation ,Marshall advocated that utility of a good should be measured in units of money which the consumer is ready to pay for buying it.



Law of diminishing marginal utility

- Perfected and popularized by Alfred Marshall
- The law of diminishing marginal utility states that as a person increases consumption of a product while keeping consumption of other products constant, there is a decline in the marginal utility that person derives from consuming each additional unit of that product
- MU can eventually falls to zero and become even negative

Diminishing marginal utility



- Law describes a familiar psychological tendency of human beings.
- The idea of declining MU is based on the assumption that even though human wants are unlimited, the desire for any particular product is limited
- If MU of a product declines, it must eventually fall to zero
- If consumption keeps on increasing, MU actually becomes negative
- Negative MU means disutility- the product become bad

Assumptions

1. Cardinal measurement of utility (Utility is measurable)
2. Monetary measurement of utility (Utility is measurable in monetary terms)
3. Consumption of reasonable quantity (Suitable and proper quantity of the commodity should be consumed)
4. Consumption is a continuous process.
5. No change in Quality (All the units of commodity are homogeneous)
6. Rational consumer (The consumer is assumed to be rational who measures, calculates and compares the utilities of different commodities and aims at maximising total satisfaction.)
7. Independent utilities (One person's utility is not affected by the utility of any other person)
8. Fixed Income and prices (Income of the consumer and prices of the goods which the consumer wishes to purchase remain constant)

Applications

- Serves as foundation for other economic laws.
- Helps in business: Pricing of the products is one of the most important business decisions.eg. For a good A, MU_A is the marginal utility & P_A is the price per unit of that good , then MU_A / P_A must be one.
- Scheduling purchases.
- Public Finance: This law is the basis for progressive taxation
- Welfare measures could be understood.
- Paradox of value could be understood: A commodity may be understood with respect to value-in-use and value-in-exchange. Paradox of value helps in understanding the variation between these two terms.Eg: water and diamond For diamond the marginal utility is very high showing the high degree of intensity of the want as the availability is scarce and hence even at higher price these are bought by the people. But for water, it is available in larger quantities which makes marginal utility quite low and hence is also priced low.

Limitations / Exceptions

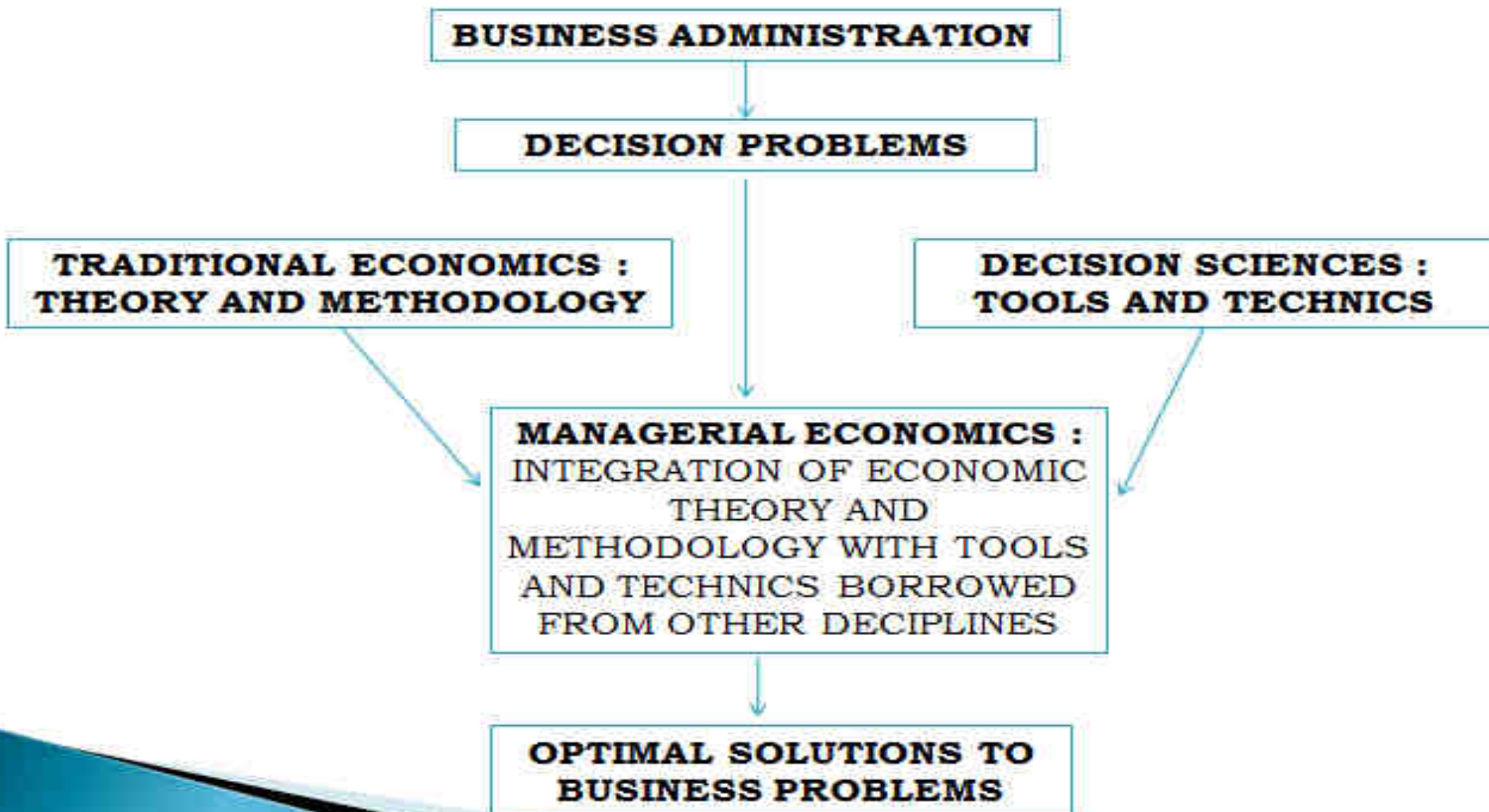
Law of Diminishing Marginal Utility Doesn't Apply for

- 1. Dissimilar units**
- 2. Unreasonable quantity**
- 3. Not a suitable time period** (If there is a long gap between the consumption of different units, then this law may not hold good)
- 4. Rare collection**
- 5. Change in taste and fashion of the consumer**
- 6. Abnormal person**
- 7. Change in income of the consumer**
- 8. Habitual goods** (The law will not be applicable for habitual goods such as consumption of cigarettes, alcohol, etc)
- 9. Durable and valuable goods**(buildings, vehicles, gems, gold, etc.)

Business/Managerial economics

- Business economics is the discipline which helps a business manager in decision making for achieving the desired results
- It is a special branch of economics that bridges the gap between abstract theory and business practice.
- It is the application of economic theory and methods to business decision making
- It links traditional economics and decision sciences to develop optimal solutions to business problems
- It can be thought of as applied microeconomics, which focuses on the decisions in the context of a single firm
- Decision making means the process of selecting one out of two or more alternative courses of action

Concept



Scope

1) Demand Analysis and Forecasting :

A business firm is an economic organisation which transform productive resources into saleable goods . A major part of business decision making depends on accurate estimates of demand, which minimises its costs of production and storage .A demand forecast can serve as a guide to management for maintaining and strengthening market position and enlarging profits. Demands analysis helps identify the various factors influencing the product demand and thus provides guidelines for manipulating demand.

2) Cost and Production Analysis :

A study of economic costs, combined with the data drawn from the firm's accounting records, can yield significant cost estimates which are useful for management decisions. Production analysis frequently proceeds in physical terms while cost analysis proceeds in monetary terms.

3) Pricing Decisions, Policies and Practices :

Price is the genesis of a firm's revenue and as such its success largely depends on how correctly the pricing decisions are taken.

4) Profit Management :

Business firms are generally organised for purpose of making profits and in the long run profits earned are taken as an important measure of the firm's success. In a world of uncertainty, expectations are not always realised so that profit planning and measurement constitute a difficult area of business economics.

5) Capital Management:

Capital management implies planning and control of capital expenditure. It is the most complex and troublesome business problem for the business manager.

Role of Business economics

1. Application of traditional economics

Business economics is concerned with the aspects of traditional economics which are relevant for decision making and are adapted /modified with a view to enable the manager to take better decisions

2. Solving economic problems

Uncontrollable human wants and limited resources give rise to economic problems. Business economics is an indispensable tool for the business people to formulate business policies for solving the economic problems

3. Use of ideas from other objects

Business economics incorporates useful ideas from other disciplines which are relevant for decision making

4. Variety of business decisions

Business economics helps in reaching a variety of business decisions in a complicated environment

5. An integrating agent

Business economics serves as an integrating agent by coordinating the activities in different areas like finance, marketing, personnel and production.

6. Social benefits

Business economics serves as an instrument in achieving economic welfare of the society through socially oriented business decisions

Relevance of Business economics

Decision making is the process of selecting particular course of action from among various alternatives. Business economics assists in the following areas of managerial decision making.

1. Demand decision
2. Input-output decision
3. Price-output decision
4. Profit related decisions
5. Investment decisions
6. Economic forecasting and forward planning

Economics Vs Business Economics

Economics

1. It is a pure Economics.
2. It consists of economic theories and principles.
3. Economics has similar emphasis on both Micro and Macro economics.
4. Micro economics part of Economics considers both Individual consumer as well as firm.
5. It's micro economic analysis deals with rent, Interest, wages and profit..

Business Economics

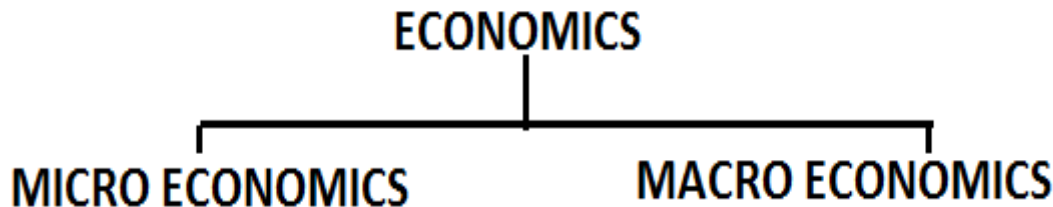
1. It is applied Economics
2. Managerial economics applies economic theories and principles to solve the business problems
3. Managerial economics relatively give more stress on micro economics than macro economics.
4. It's micro economic part considers only individual firm.
5. Micro Economic part of managerial Economics is related only with profit

MODULE 2

BASICS OF MICRO ECONOMICS

DEMAND & SUPPLY ANALYSIS

- A market is a group of buyers and sellers that interact to exchange a good or service



- Microeconomics is a logical starting point for the study of economics.
- Demand and supply analysis: fundamental subject in microeconomics.
- Demand and supply analysis is the study of how buyers and sellers interact to determine transaction prices and quantities.



- Demand is the willingness and ability of consumers to purchase a given amount of a good or service at a given price.
- Supply is the willingness of sellers to offer a given quantity of a good or service for a given price.
- Demand analysis focuses on the behavior of consumers.
- Supply analysis focuses on the behavior of producers.

- A product or service is said to have demand when three conditions are satisfied.

- 1. Desire to acquire**
- 2. Willingness to pay**
- 3. Ability to pay**

Factors determining the Demand / Demand Determinants

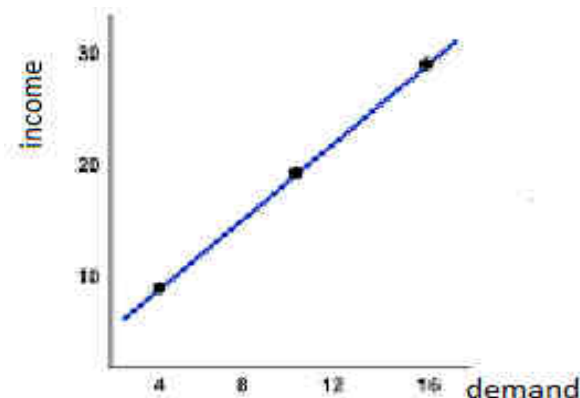
- **Price of the product (P) :**

It is the most important factor. The relation between price and demand is inverse relationship. A decrease in the price of a normal good leads to rise in demand of a product.

- **Income of the consumer (I):**

The income and demand moves in the same direction. Demand varies directly with consumer's income for superior goods and Demand varies indirectly with consumer's income for inferior goods.

Engel curve describes how household expenditure on a particular good or service varies with household income



- **Tastes and preference of the consumer (T) :**

Demand is directly related to taste, preferences etc. but they may change under the influence of changing fashions, advertisements etc

- **Price of the related goods (P_r)**

When a change in the price of one commodity influences the demand for other commodity. The related commodities are two types :

(a) Substitutes: When the price of one commodity increase, then the demand for another product will increase. eg: Tea and Coffee

(b) Complements: When the price of one commodity, will increase, then the demand for another product will decrease. eg: Pen and Ink

- **Expected change in price (E_p) :**

Demand is inversely related to the direction of expected change in price. If the consumer expects future price of the product will increase, then the consumer purchase more quantity of goods at present.

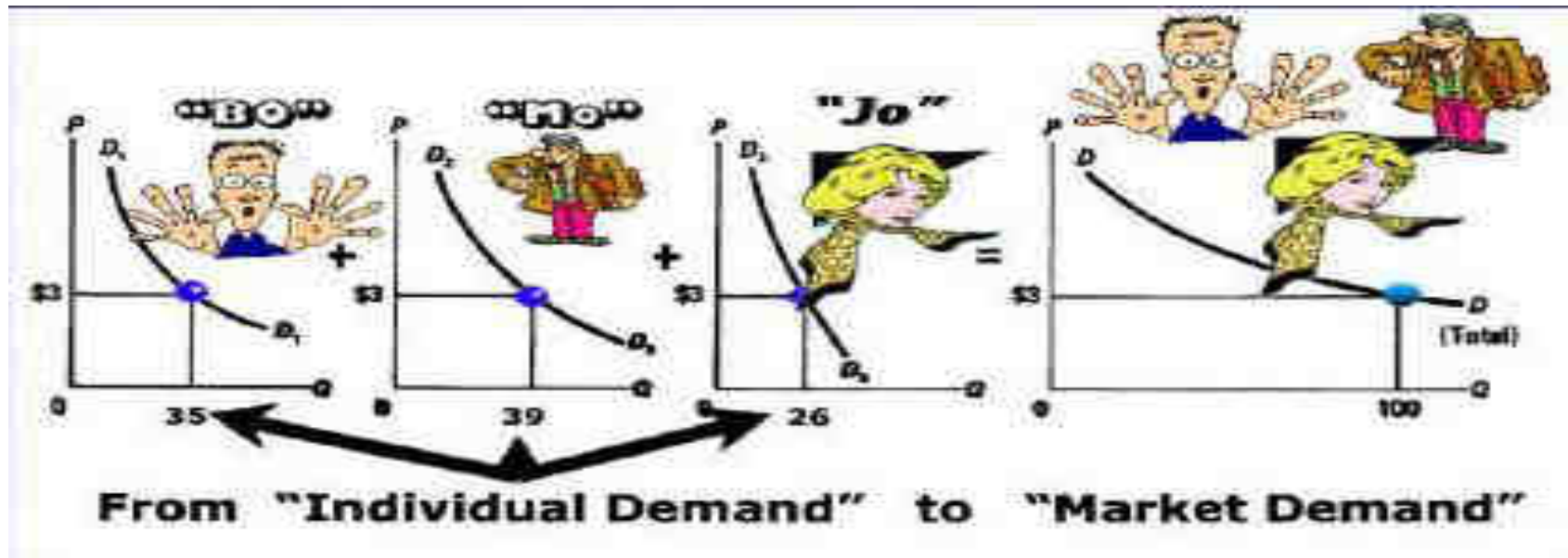
- **Expectations about future income of the consumer (E_f)**

- **Advertisement (AE):**

TYPES OF DEMAND

1) Individual demand Vs Market demand

- Individual demand means quantity of a good demanded by an individual consumer at various prices per time period.
- Market demand is the aggregate of the quantities demanded by all consumers at different prices per time period.



2) Direct Demand Vs indirect demand

- Direct demand (consumers goods demand) refers to the demand for goods that yield direct satisfaction to the consumers .

Eg: Demand for food, cloth and house etc.

- Indirect demand(producer's goods demand) refers to the demand for Commodities or services used for producing goods which satisfy our wants directly.

Eg: Demand for land, labour, capital, etc



3) Derived demand Vs autonomous demand

- Derived demand (induced demand) refers to the demand for a commodity or service which is a consequence of the demand for something else.

Eg: Demand for bricks is derived from demand for housing

- Autonomous demand refers to the demand for goods which is not tied with the demand for other goods.

Eg: Demand for food items.

4) Demand for durable goods Vs Demand for non-durable goods

- Durable goods are those which do not wear out easily and therefore they can be used for long period time.

Eg: cars, books, television

- Nondurable goods are those which wear out easily and therefore they can be used for short period of time only.

Eg: petrol, cosmetics items, soaps

5) Industry demand Vs Firm demand

- Firm Demand (company demand) denotes the demand for the products of a particular firm.

Eg: Demand for steel produced by TISCO (Tata Iron and Steel Company)

- Industry demand means the demand for the product of a particular industry.

Eg: Demand for steel produced by all companies in India is industry demand for steel in India.

6) Total market demand Vs Market segment demand

- Market segment demand refers to the demand for the product in a specific market segment.

Eg: Demand for Baskin Robbins ice creams by women

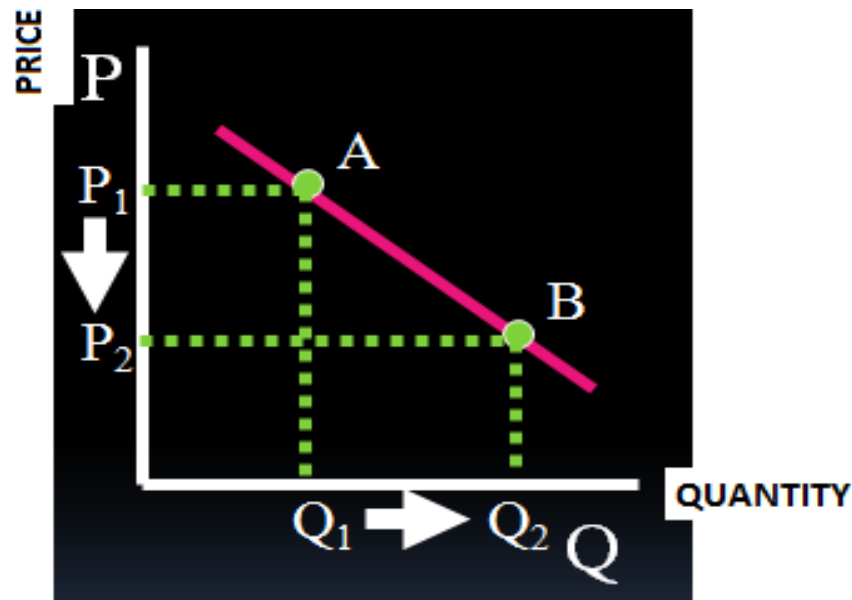
- Total market demand refers to the total demand for the product from all market segments.

Eg: Demand for Baskin Robbins ice creams in India



Law of demand

- According to 'law of demand', demand for a commodity rises when price falls and vice versa, when other determinants of demand remain unchanged
- There is an inverse relationship between price and quantity demanded.



ASSUMPTIONS

1. There is no change in income of consumers.
2. There is no change in the price of product.
3. There is no change in quality of product.
4. There is no substitute of the commodity.
5. The prices of related commodities remain the same.
6. There is no change in taste and preference of consumers.
7. The size of population remains the same.

EXCEPTIONS

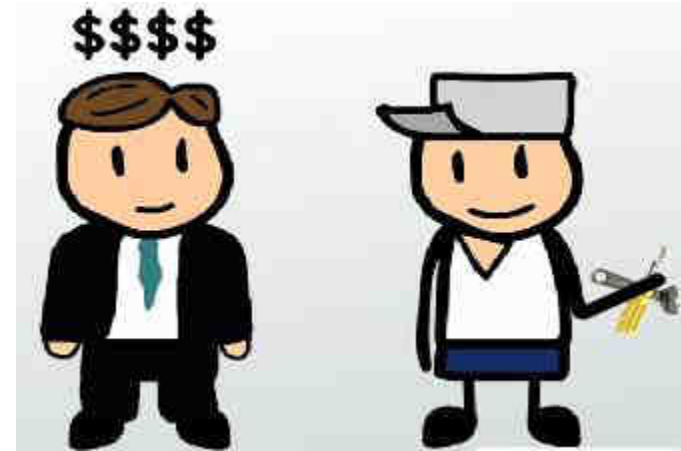


1) Inferior goods

- Inferior good is a good whose quantity demanded decreases when consumer income rises.
- The law of demand does not apply in case of inferior goods. When price of inferior commodity decreases and its demand also decrease.

2) Demonstration effect

- Sometimes a section of society tends to imitate the consumption pattern of higher income group. There is more demand when prices are high. Eg: diamond



3) Ignorance of consumers

- The consumer usually judge the quality of a commodity from its price. A low priced commodity is considered as inferior and less quantity is purchased. The law of demand does not apply in this case.

4) Emergency

- The law of demand does not work when there is less supply of commodity due to war, curfew. The people buy more for stock purpose even at high price.

5) Expectation of price rise in future

- Consumers expectation about price affect their buying behaviour. Eg: shares

Ways of expressing demand

1. Demand function

- A demand function is the amount of a product demanded for each combination of price and the other factors.
- It represents the behaviour of buyers.
- Demand relationship is based on an inverse relationship between the price and quantity of a good purchased.
- $Q_d X = f (P_x , P_r , Y, T,)$

Where, $Q_d X$ = quantity demanded of good 'X'

P_x = the price of good X

P_r = the price of a related good

Y = income level of the consumer

T = taste and preference of the consumers

2) Demand schedule

- It is a table of the quantity demanded of a good at different price levels.

1) Individual demand schedule

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

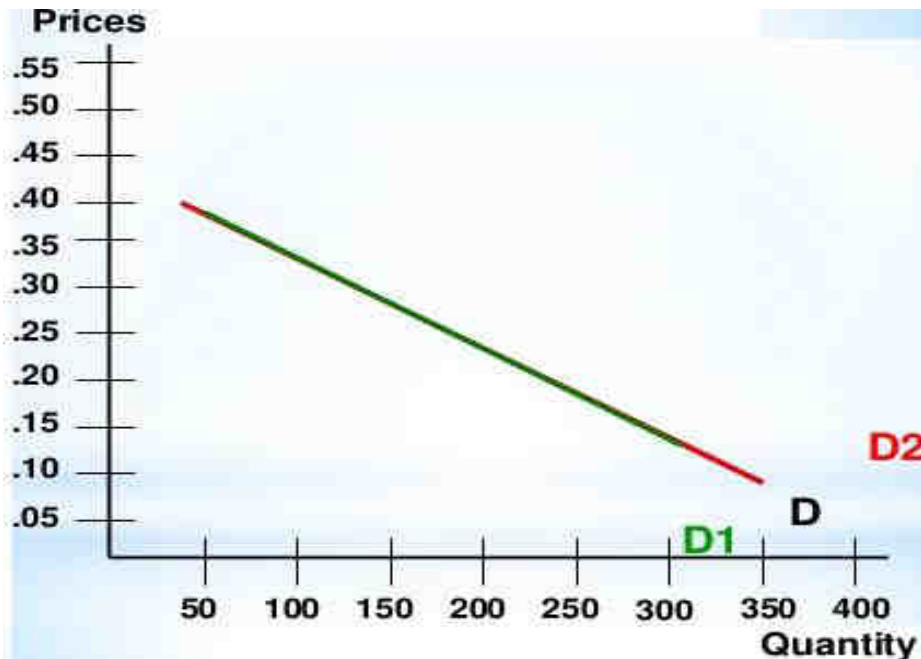
2) Market demand schedule

- it is a tabulation of the quantity of a good that all consumers in a market will purchase at any given price.

Market Demand Schedule	
Price of a Small Soda	Number demanded per day
\$0.25	890
\$0.50	500
\$0.75	480
\$1.00	470
\$1.25	410
\$1.50	350
\$1.75	280
\$2.00	240
\$2.25	200
\$2.50	150
\$2.75	100

3) Demand curve

- It is the graph showing how the demand for a commodity or service varies with changes in its price.
- The demand curve will move downward from the left to the right, which expresses the law of demand.
- In the graph, price is plotted on vertical ('Y') axis and quantity on the horizontal ('X') axis
- Each point on the curve shows a unique price- quantity combination.



Reasons for Negative slope

- **Law of diminishing marginal utility:**

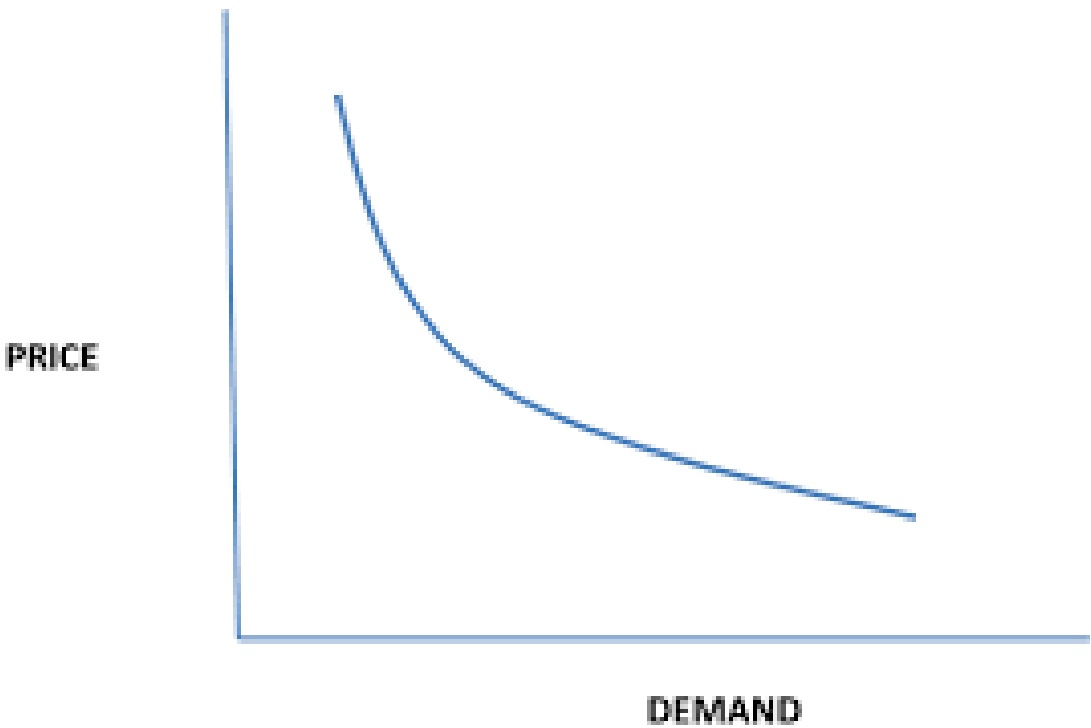
According to the cardinal utility approach, when a consumer purchases more units of a commodity, its marginal utility declines. Therefore the consumer will purchase more units of that commodity only if its price falls. Thus a decrease in price brings about an increase, in demand. The demand curve, therefore, is downward sloping.

- **Income effect:**

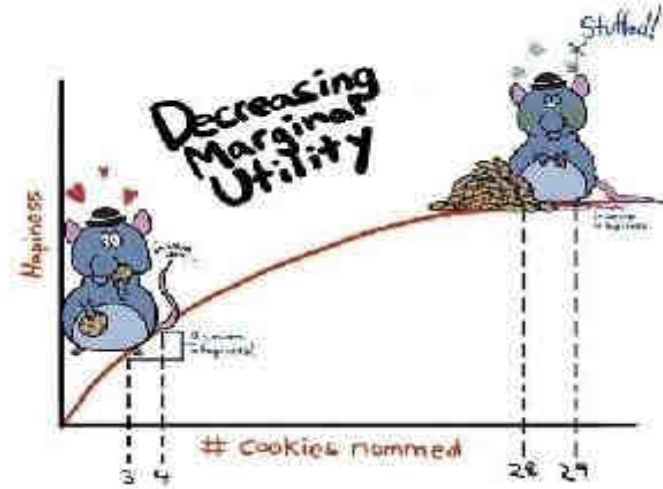
Other things being equal, when the price of a commodity decreases, the real income of the household increases. The consumer is now in a position to purchase more commodities with the same income. The demand for a commodity thus increases not only from the existing buyers but also from the new buyers who were earlier unable to purchase at higher price.

- **Substitution effect:**

It refers to the substitution of one commodity in place of other when it becomes relatively cheaper. For example, the price of meat falls and the prices of other substitutes say poultry and beef remain constant. Then the households would prefer to purchase meat because it is now relatively cheaper. The increase in demand with a fall in the price of meat will move the demand curve downward from left to right.

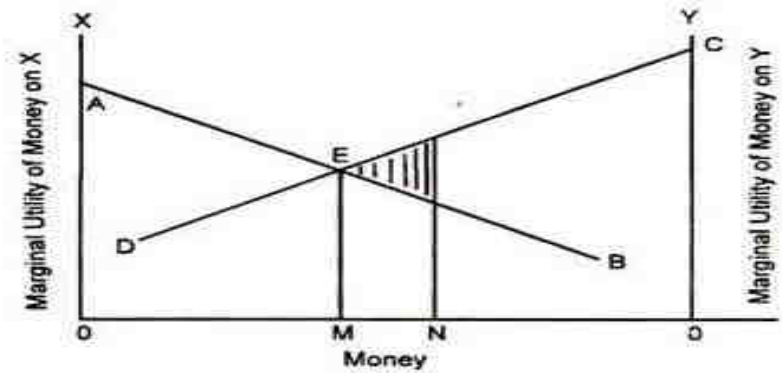


Law of equi-marginal utility



- Law of maximum satisfaction or Law of substitution or Gossen's second law.
- It is an extension of the law of diminishing marginal utility.
- The equi-marginal principle states that a consumer will be maximizing his total utility when he allocates his fixed money income in such a way that the utility derived from the last unit of money spent on each good is equal.
- MU is the satisfaction gained from consuming an additional unit of some good.

Explanation



- MU of two commodities need not be equal at the beginning of consumption. Then the consumer buys more of the good which has higher MU and vice versa. So its MU for him declines and the MU for the other commodity will go up. At one stage MU of both the commodities become equal. At this point, total utility is maximum.
- The consumer maximizes his total utility by allocating his income among the goods available to him in such a way that MU from one good equals the MU of from the other good.
- MU per rupee is same for all commodities.

$$MU_A/P_A = MU_B/P_B = MU_C/P_C = \dots \dots MU_n/P_n$$

MU_A/P_A = Marginal utility per rupee spent on good A.

MU_A is the marginal utility of the goods A and P_A is the price of A.

Assumptions

1. There is no change in the prices of the goods.
2. The income of consumer is fixed.
3. The marginal utility of money is constant.
4. Consumer has perfect knowledge of utility obtained from goods.
5. Consumer is normal person so he tries to seek maximum satisfaction.
6. The utility is measurable in cardinal terms.
7. Consumer has many wants.
8. The goods have substitutes.

Applications

- Production: The law of equi marginal utility is helpful in the field of production. The producer uses limited resources to purchase production factors. He tries to equalize marginal utility of all factors. He wishes to get maximum output and profit.
- Exchange : The law is used in the field of exchange. The people like to exchange a commodity having low utility with a commodity having high utility. There is maximum benefit from exchange of commodities.
- Consumption : The law is applicable in consumption. A rational consumer tries to get maximum satisfaction when he spends his limited resources on various things. He tries to equalize weighted marginal utility of all the things.

Applications

- Public finance: The law is applicable in public finance. The government can spend its revenue to get maximum social advantage. The marginal utility of each dollar spent in one sector must be equal to marginal utility derived from all other sectors.
- The law is helpful in prices. Due to scarcity of commodity its prices go up. The law tells us to use substitute commodity, which is less scarce. The result is that the price of commodity comes down.

Limitations

- The law is not applicable in case of knowledge.
- There is no measurement of utility. It is psychological concept.
- The law does not hold well in case fashion and customs.
- The does not hold well in case of very low income. The maximization of utility is not possible due to low income.
- The law is not applicable in case of durable goods.
- There are certain lazy consumers. They do not care for maximum utility. The law fails to operate in case of laziness of consumers.

Elasticity of demand

- Elasticity a ratio of percentage change in one variable to the relative change in another variable.
- Elasticity of demand is defined as ratio of percentage change in demand to the percentage change in one of the determinants of demand.
- Demand is said to be inelastic when demand remains constant irrespective of changes in price.
- Three elastics of demand
 1. Price elasticity of demand
 2. Income elasticity of demand
 3. Cross elasticity of demand

Price elasticity of demand

- It shows the responsiveness of the quantity demanded of a good to a change in its **price**.

**Price elasticity of demand = Percentage change in quantity demanded
Percentage change in price**

$$E_p = (\Delta D/D)/(\Delta P/P) = (\Delta D/\Delta P) * (P/D)$$

where

ΔD = change in demand.

ΔP = change in price.

D = initial demand.

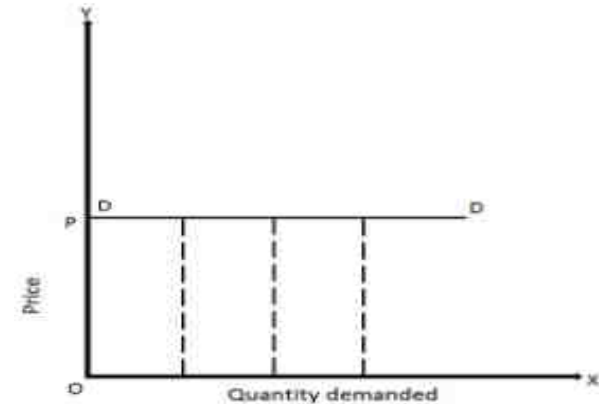
P = initial price.

- Price elasticity of demand of a normal good is negative.

Degrees of Price elasticity of demand

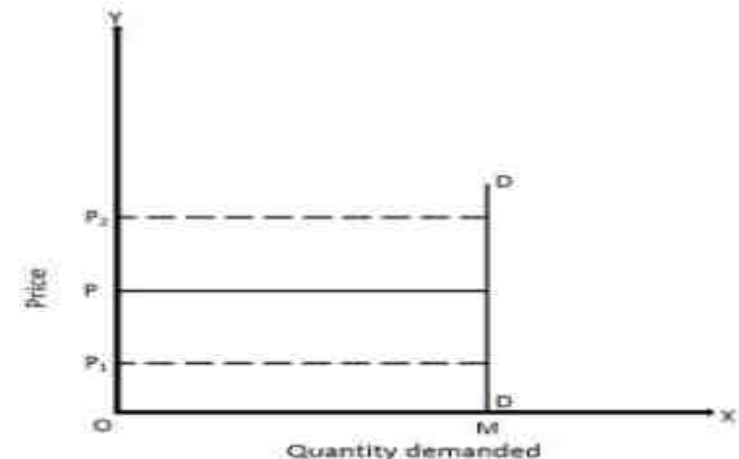
1) Perfectly Elastic Demand ($E_p = \infty$)

- The demand is said to be perfectly elastic if the quantity demanded increases infinitely with a small fall in price
- It is also known as infinite elasticity.
- It is rarely found in real life.



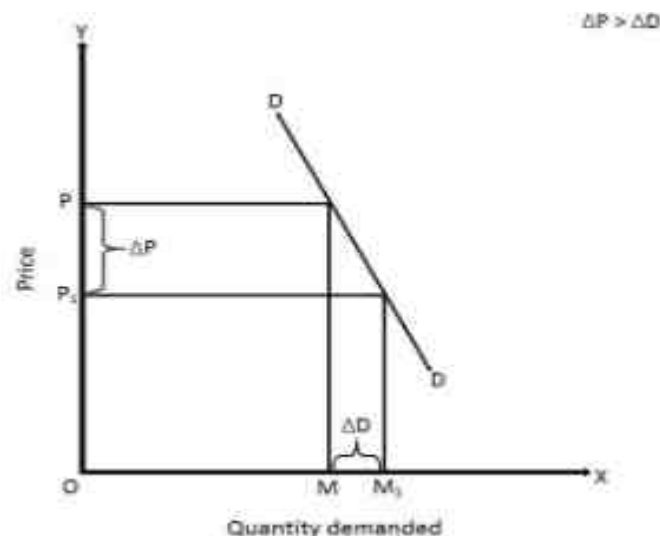
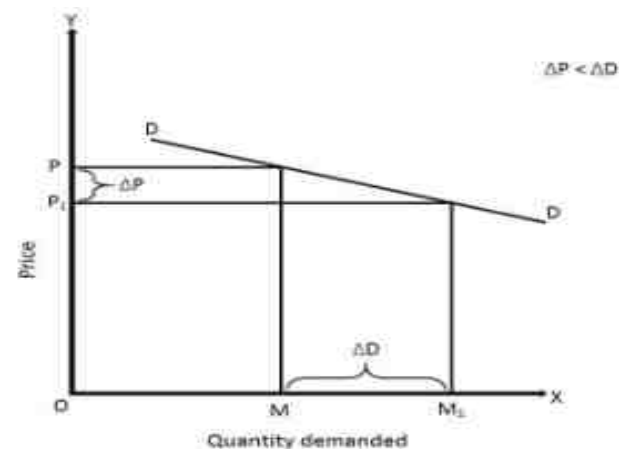
2) Perfectly Inelastic Demand ($E_p = 0$)

- The demand is said to be perfectly inelastic if the demand remains constant whatever may be the price .
- It is also called zero elasticity.
- It is rarely found in real life.



3) Relatively Elastic Demand ($E_p > 1$)

- The demand is said to be relatively elastic if the percentage change in demand is greater than the percentage change in price
- If there is a greater change in demand there is a small change in price.
- It is also called highly elastic demand or simply elastic demand

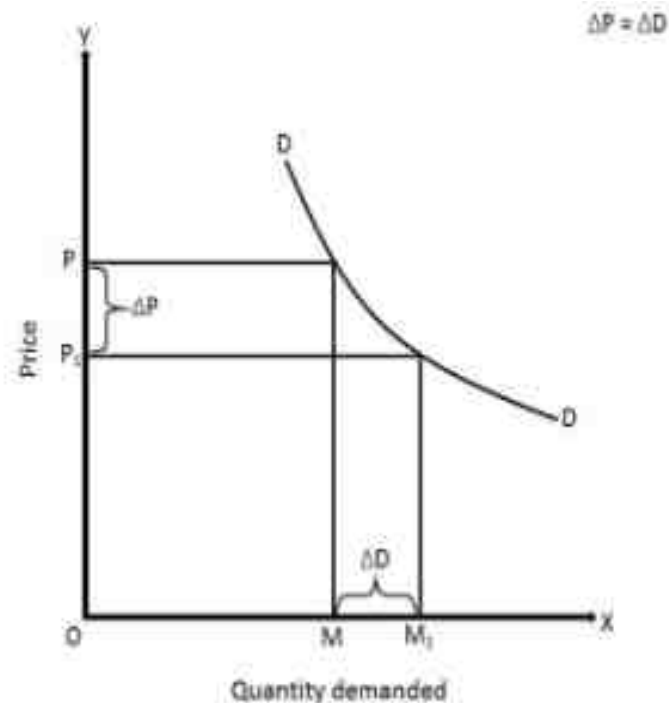


4) Relatively Inelastic Demand ($E_p < 1$)

- The demand is said to be relatively inelastic if the percentage change in quantity demanded is less than the percentage change in price
- If there is a small change in demand with a greater change in price.
- It is also called less elastic or simply inelastic demand.

5) Unitary Elastic Demand ($E_p = 1$)

- The demand is said to be unitary elastic if the percentage change in quantity demanded is equal to the percentage change in price.
- It is also called unitary elasticity.
- This type of demand is an imaginary one as it is rarely applicable in our practical life.



Income elasticity of demand

- It shows the responsiveness of the quantity demanded for a good to a change in the **income** of the people.

Income elasticity of demand =

$$\frac{\text{Percentage change in quantity demanded}}{\text{Percentage change in income}}$$

$$E_Y = (\Delta D/D)/(\Delta I/I) = (\Delta D/\Delta I) * (I/D)$$

where

ΔD = change in demand.

ΔP = change in income

D = initial demand.

P = initial income

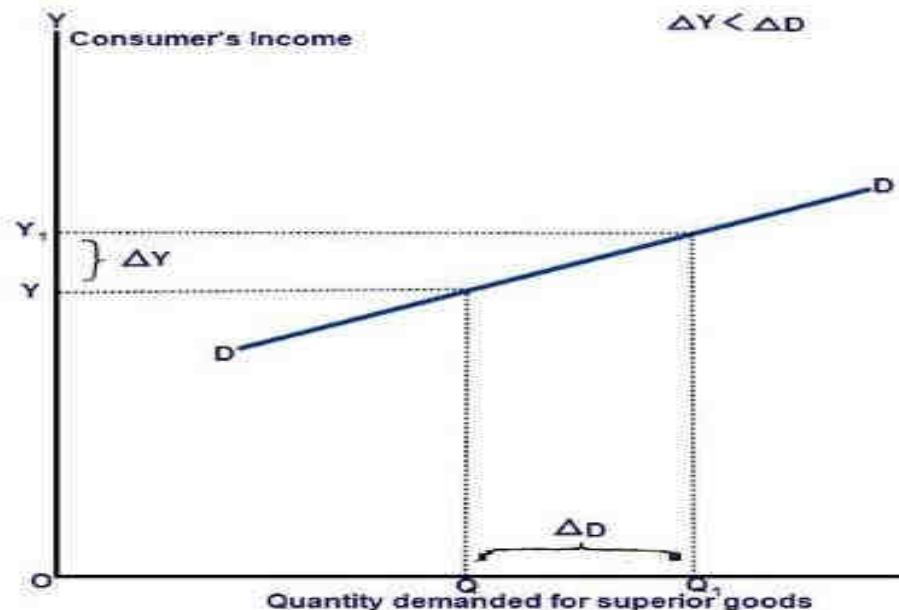
- Income elasticity can be positive or negative. It is negative for inferior goods and positive for normal goods.

Degrees of Income elasticity of demand

I. Positive income elasticity

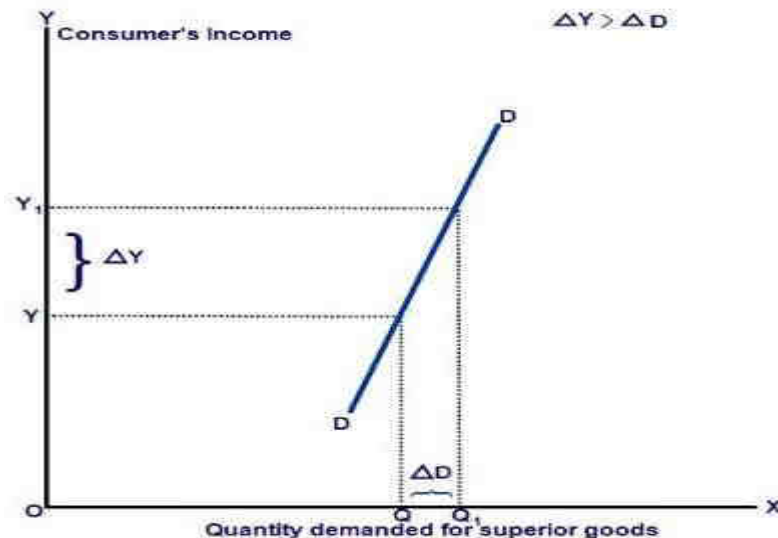
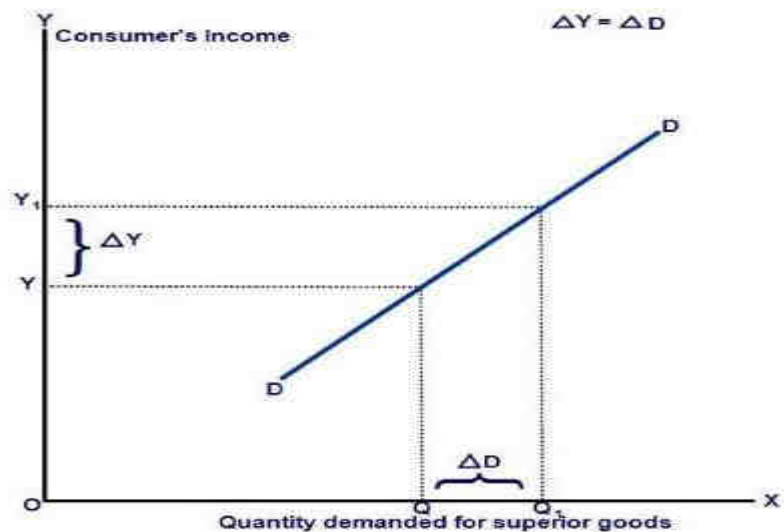
1) Income elasticity greater than unity ($E_y > 1$)

- If the percentage change in quantity demanded for a commodity is greater than percentage change in income of the consumer, it is said to be income greater than unity.



2) Income elasticity equal to unity ($E_Y = 1$)

- If the percentage change in quantity demanded for a commodity is equal to percentage change in income of the consumer, it is said to be income elasticity equal to unity.

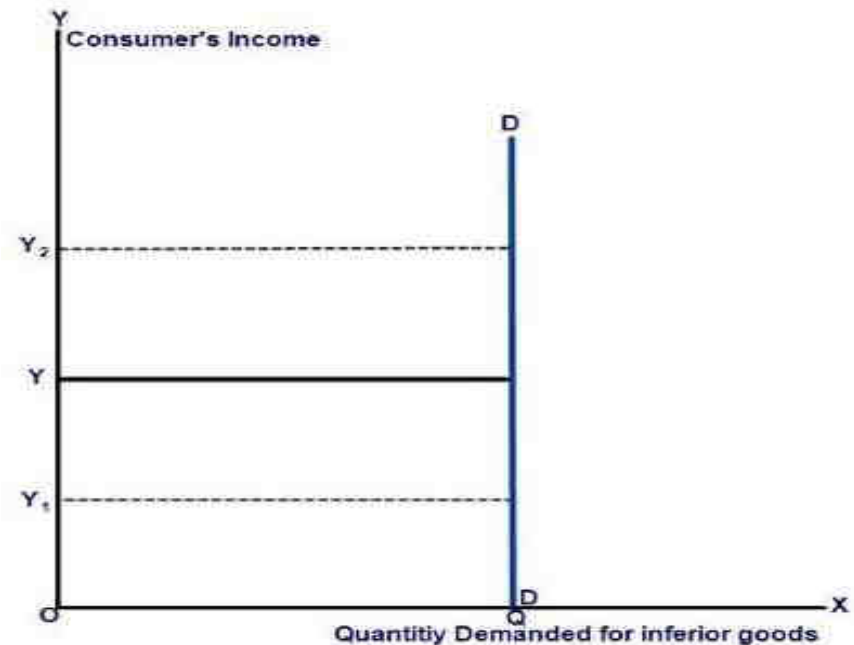
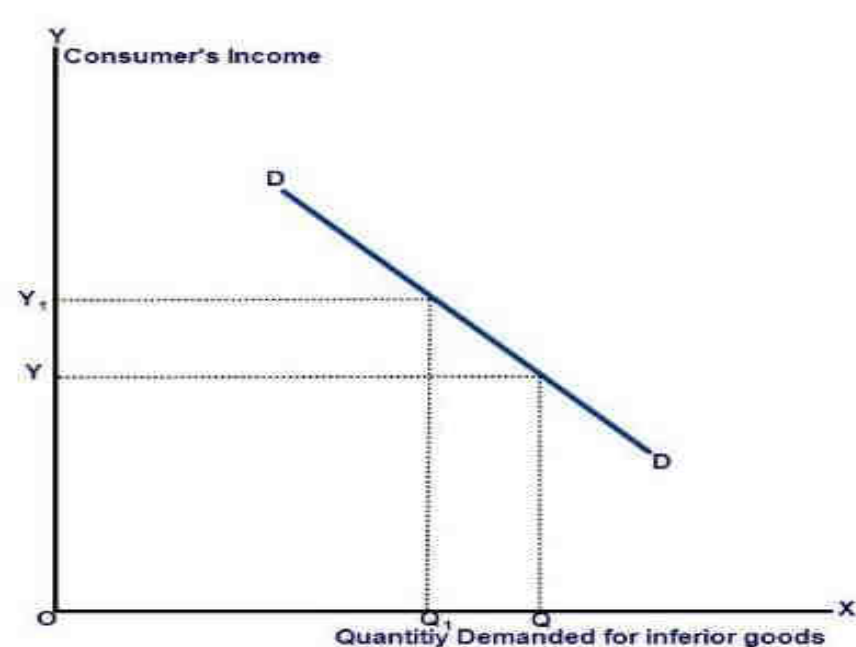


3) Income elasticity less than unity ($E_Y < 1$)

- If the percentage change in quantity demanded for a commodity is less than percentage change in income of the consumer, it is said to be income greater than unity.

II. Negative income elasticity of demand ($E_Y < 0$)

- If the quantity demanded for a commodity decreases with the rise in income of the consumer and vice versa, it is said to be negative income elasticity of demand.



III. Zero income elasticity of demand ($E_Y = 0$)

- If the quantity demanded for a commodity remains constant with any rise or fall in income of the consumer and, it is said to be zero income elasticity of demand.

Cross elasticity of demand

- It measures the responsiveness of the quantity demanded for a good to a change in the price of another good.

**Cross elasticity of demand = Percentage change in demand of X
Percentage change in price of Y**

$$E_c = (\Delta D_X / D_X) / (\Delta P_Y / P_Y) = (\Delta D_X / \Delta P_Y) * (P_Y / D_X)$$

where

ΔD_X = change in demand of X.

ΔP_Y = change in price of Y

D_X = initial demand of X.

P_Y = initial price of Y.

Degrees of cross elasticity of demand

1. Positive:

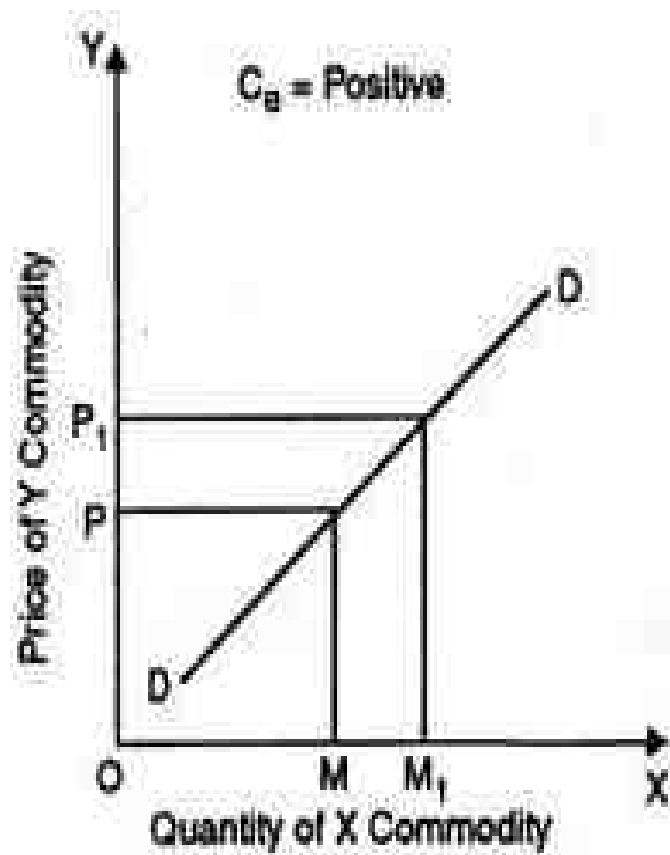
- When goods are substitute of each other then cross elasticity of demand is positive. In other words, when an increase in the price of Y leads to an increase in the demand of X.

2. Negative:

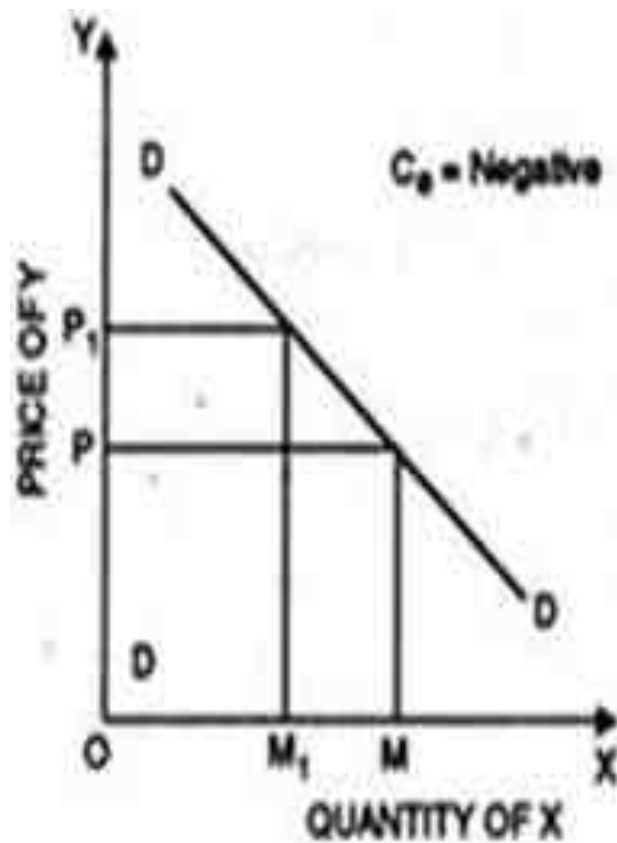
- In case of complementary goods, cross elasticity of demand is negative. A proportionate increase in price of one commodity leads to a proportionate fall in the demand of another commodity because both are demanded jointly.

3. Zero:

- Cross elasticity of demand is zero when two goods are not related to each other.



1



2



3

Supply

- Supply is a fundamental economic concept that describes the total amount of a specific good or service that is available to consumers.
- Supply Vs Stock
- Stock is the total volume of commodity which can be brought into the market for sale.
- Supply is the total volume of commodity which is actually brought into the market.
- Individual supply Vs Market supply
- Individual supply refers to the supply of a good by one firm at different prices, while other things remain constant.
- Market supply refers to the sum of the amount of goods supplied for sale by all firms at different prices during a given time.

Determinants of supply

1. Costs of the factors of production

- The cost of input factors (land,labour etc.) will influence the supply of a product.
- Eg: if the price of labour increases, then the supply will decline due to scarce resources.

2. Changes in technology

- The change in technology (improved machinery,method of organization etc) helps the firm to reduce the cost and to increase the supply.

3. Price of related goods

- Price of the related good increases, then the supply of the commodity increases.
- The producer would shift the allocation of resources to the commodity from the elated good

4. Taxes and subsidies

- A change in government policy(eg: change in tax rate) may influence the supply of a good.

5. Natural factors

- Natural factors such as climatic changes influence its supply.

6. Goal of business firm

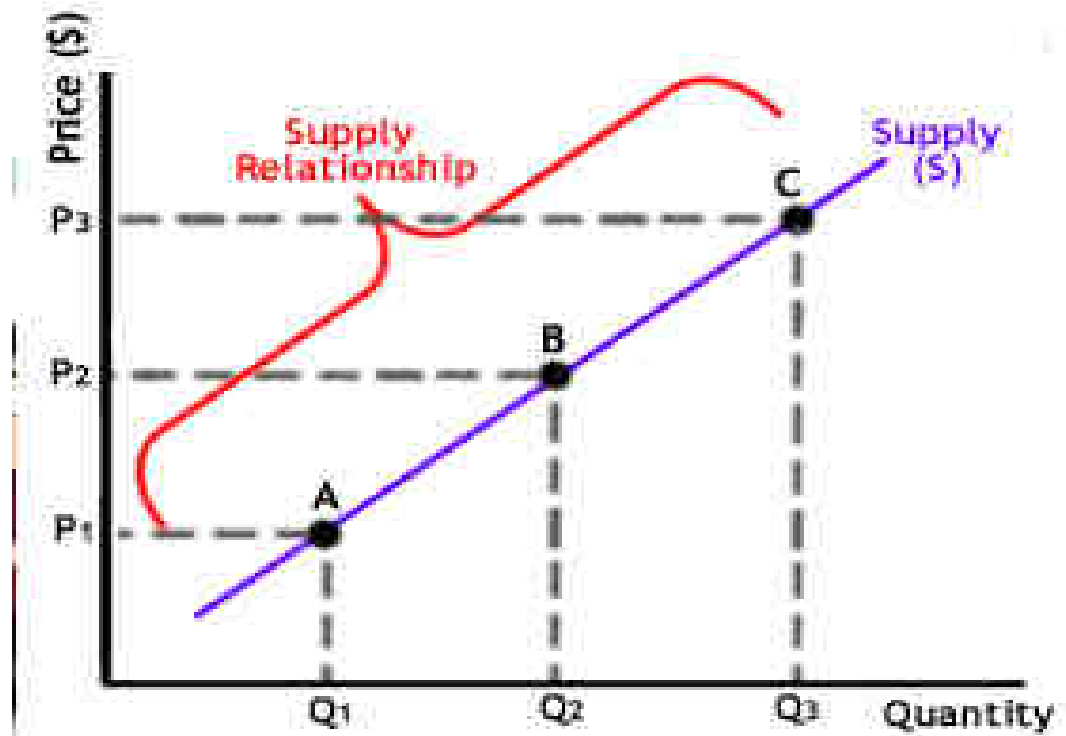
- The goal of a business firm will influence the market supply of a commodity

7. Change in number of firms in the industry

- A change in number of firms in the industry as a result of profitability influences the market supply of a product.

Law of supply

- It states that, other things remaining same, an increase in price results in an increase in quantity supplied.



Exceptions

1. Monopoly: If the supply side of the market is controlled by small number of sellers then the law might not operate. In case of single seller larger quantity may not be supplied even though price is higher.
2. Competition: If in a market facing more competition, sellers may offer larger quantities at lower prices and negating the law of supply.
3. Perishable goods: in case of perishable goods the supplier would forced to sell more quantities at lower prices to avoid loss due to damage of product.



4. Agricultural products: Since the production of agricultural products cannot be increased beyond a limit, the supply can also not be increased beyond the limit even if prices are higher.
5. Legislation restricting quantity: suppliers cannot offer to sell more quantities at higher prices where the government has put regulations on the quantity of the good.
6. Artistic and auction goods: the supply of such goods cannot be increased or decreased easily.



Ways of expressing supply

1. Supply function

- It is an algebraic form of expressing supplier's behaviour with regard to what he offers in market at the prevailing prices.
- It expresses the quantity supplied per period of time as a function of several variables.

$$S_x = f(P_x, C_x, T_x)$$

Where

S_x = Quantity supplied of a good

P_x = Price of a good

C_x = Cost of production

T_x = Technology of production

2. Supply schedule

- It shows the relationship between various prices and the supply of a particular commodity in a particular market at a particular time.
- Two types:
 - a) Individual supply schedule : It refers to a tabular statement showing various quantities of a commodity that a producer is willing to sell at various levels of price. Eg: Supply schedule for the different quantities of milk supplied in the market at different prices:
 - b) Market supply schedule : It refers to a tabular statement showing various quantities of a commodity that suppliers throughout the whole economy are willing to supply at various levels of price. Eg: Market supply schedule of a product supplied by three suppliers. A, B, and C:

Individual supply schedule & Market supply schedule

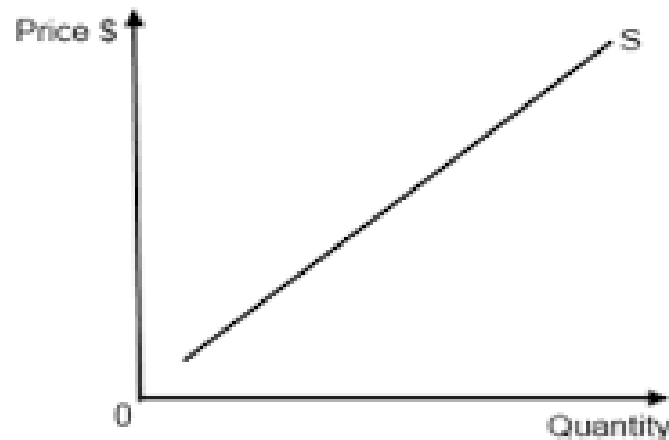
EXAMPLE

Price of milk (per liter)	Quantity supplied (1000 per day in liters)
10	10
12	13
14	20
16	25

Price of product X (per unit)	Individual supply (per day)			Market supply (per day)
	A	B	C	
100	750	500	450	1700
200	800	650	500	1950
300	900	750	650	2300
400	1000	900	700	2600

3) Supply curve

- It is the graphical representation of the information given in individual supply schedule.
- In this, the price will appear on vertical (Y)axis and the quantity supplied is on the horizontal (X) axis.
- Supply curve is drawn as a slope rising upward from left to right.
- It can be of two types
 1. Individual supply curve : It is the graphical representation of Individual supply schedule
 2. Market supply curve : It is the graphical representation of market supply schedule



Reasons for upward slope

1. Law of diminishing marginal returns

The law of diminishing marginal returns explains what happens to the output of products when a firm uses more variable inputs while keeping a least one factor of production fixed.

2. Goal of profit maximization

The aim of a firm to maximize the profit can be achieved by raising price of goods. At higher price, increase supply of goods.

Elasticity of supply

- Elasticity of supply (E_s) is a measure to show the responsiveness of the quantity supplied of a good to a change in its price.

$$\text{Elasticity of supply} = \frac{\text{Percentage change in quantity supplied}}{\text{Percentage change in price}}$$

$$E_s = (\Delta S/S)/(\Delta P/P) = (\Delta S/\Delta P) * (P/S)$$

where

ΔS = change in supply

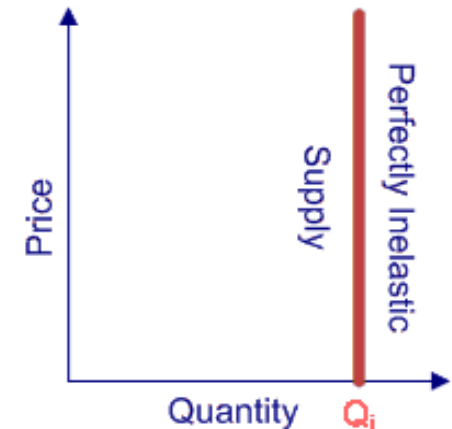
ΔP = change in price

S = initial supply

P = initial price

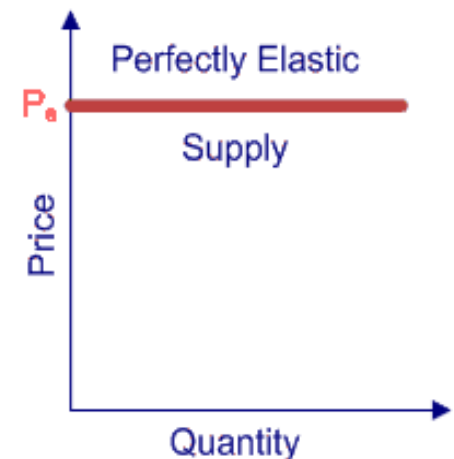
1) Perfectly inelastic supply

- The supply is said to be perfectly inelastic when a change in price produces no change in the quantity supplied.
- Supply curve is a vertical line parallel to Y-axis.
- Elasticity of supply, $E_s = 0$
- Eg: land



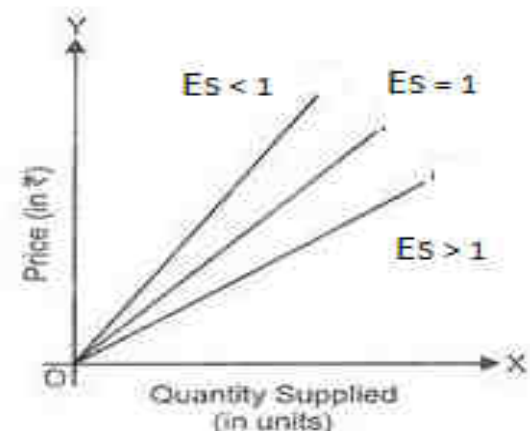
2) Perfectly elastic supply

- The supply is said to be perfectly elastic when a very significant change in price leads to an infinite change in quantity supplied.
- Supply curve is a horizontal line parallel to X-axis.
- Elasticity of supply, $E_s = \alpha$
- Eg: cancer drug



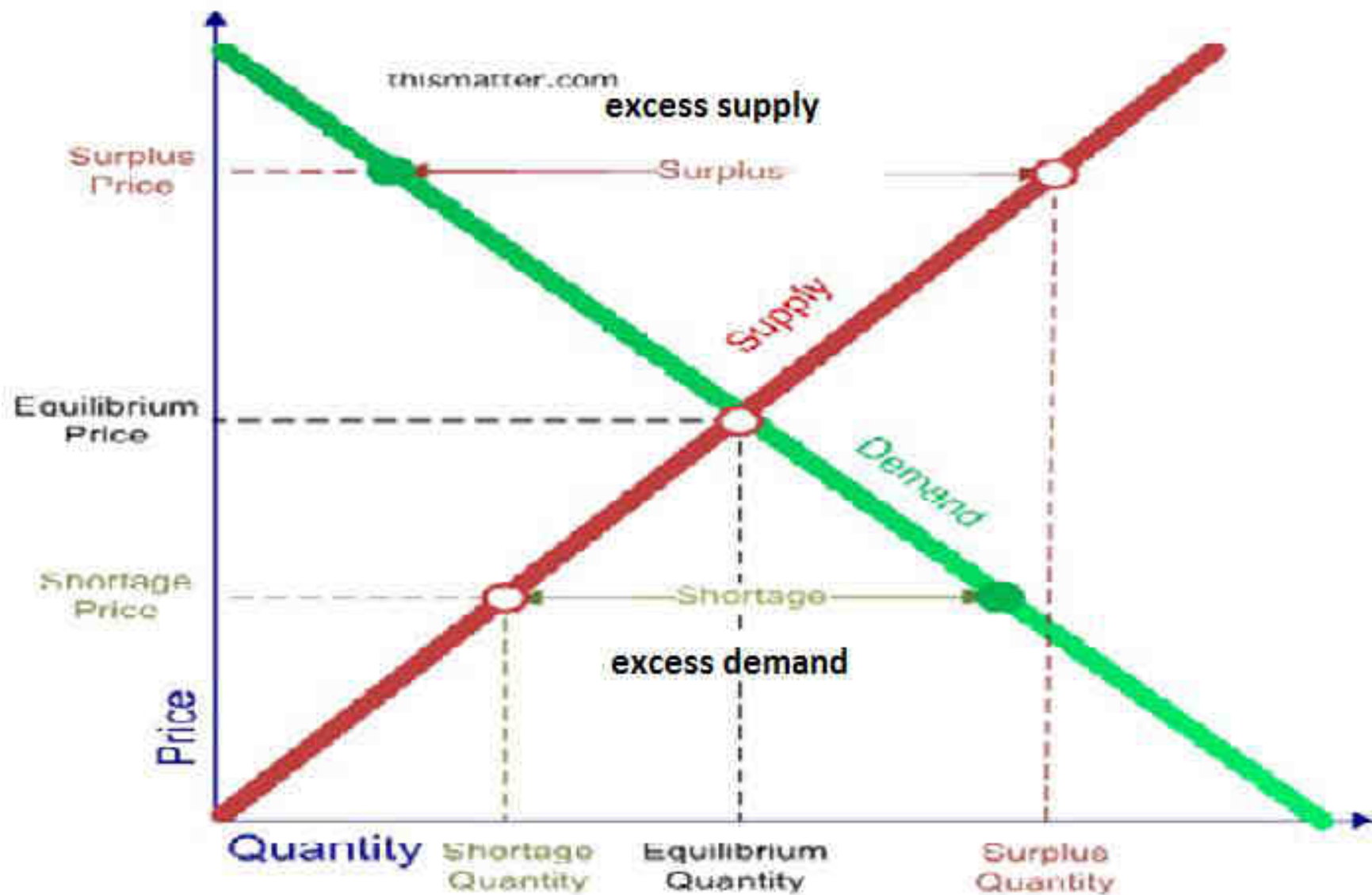
3) Unitary Elastic Supply:

- When percentage change in quantity supplied is equal to percentage change in price, then supply for such a commodity is said to be unitary elastic.
- Elasticity of supply, $E_s = 1$.
- Supply curve is a straight line passing through the origin.
- All the supply curves, which pass through the origin are unitary elastic.
- Relatively elastic supply: Supply is more elastic when a small change in price causes a greater change in quantity supplied, $E_s > 1$
- Relatively inelastic supply: Supply is relatively inelastic when a percentage change in price is greater than the percentage change in quantity supplied, $E_s < 1$.



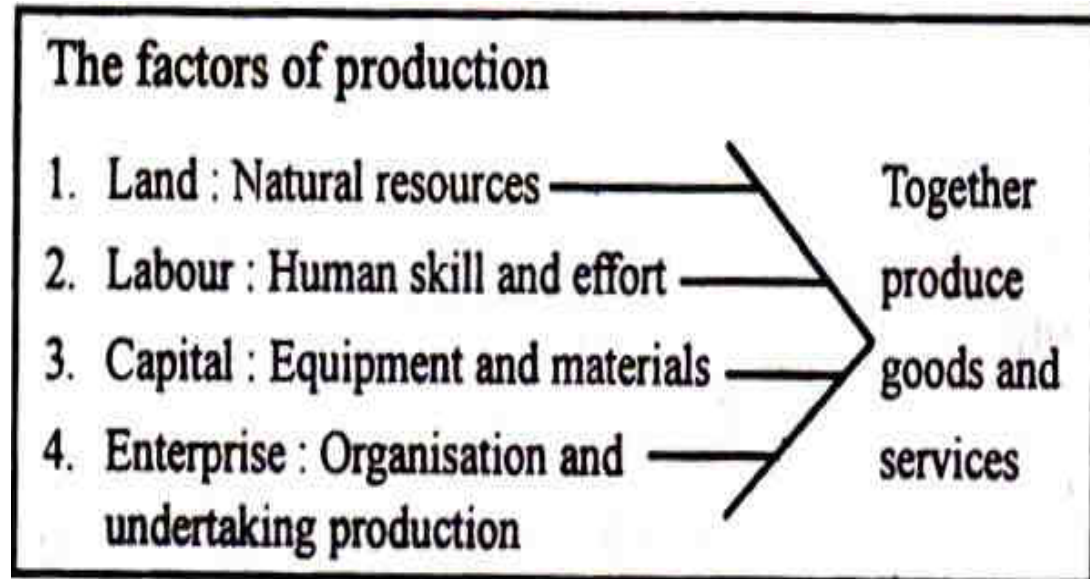
Equilibrium price and Equilibrium quantity

- The price of any commodity in market are demand and supply.
- In demand curve, more quantity will be demanded at a lower price and in supply curve more quantity will be supplied at higher price.
- The equilibrium price of a commodity is the price at which demand equals supply.
- At a given price, the quantity demanded and supplied is same. This quantity is called equilibrium quantity.
- Equilibrium price of a commodity is the point of intersection of demand and supply curves.
- Price lower than equilibrium price means that demand exceeds supply.
- Problem



Production

- It is the act of creating output which has value and contributes to the utility of individuals.
- It is the creation of value:
 - 1) Use value (Utility of consuming a good)
 - 2) Exchange value (Ratio in which one good exchange for other)
- Factors/Agents of production
 - 1) Land
 - 2) Labour
 - 3) Capital
 - 4) Enterprise/Organization



Land

- Land is used in a broad sense to refer to all natural resources or gifts of nature.
- Land includes farming and building land, forests, mineral deposits, fisheries, rivers, lakes, etc.
- Features
 1. Free Gift of Nature
 2. Fixed Quantity
 3. Land is Permanent
 4. Land is a Primary Factor of Production
 5. Land is a Passive Factor (cannot produce anything by itself) of Production
 6. Land is Immovable
 7. Land Differs in Fertility (heterogeneous)
 8. Supply of Land is Inelastic

Labour

- It refers to human effort of any kind—physical and mental— which is directed to the production of goods and services.
- Features
 1. Labour is Perishable (cannot be stored)
 2. Labour cannot be separated from the Labourer
 3. Less Mobility of Labour
 4. Weak Bargaining Power of Labour
 5. Inelastic Supply of labour
 6. Labour is both the Beginning and the End of Production
 7. Differences in the Efficiency of Labour
 8. Labourer sells his Labour and not Himself

Efficiency of labour

- It is the capacity of labours to do more and better work during a given period of time.
- Factors determining the efficiency
 1. Racial Qualities (It has been seen that every person inherits certain qualities from the race to which he belongs).
 2. Moral Qualities
 3. Individual Qualities
 4. General Education and Intelligence
 5. Standard of Living
 6. Organisation among the labourers

Capital

- Capital is defined as ‘produced means of production.’
- It is a man-made resource.
- It is not used for the purpose of consumption but is utilised in the process of production.
- Tools and machinery, bullocks and ploughs, seeds and fertilizers, etc. are examples of capital.
- All capital is wealth but all wealth is not capital(Eg:fountain pen kept idle is a wealth and it become capital when it is used for writing).

- **FEATURES**

1. capital is a direct result of savings.
2. capital is man-made resource over a period.
3. capital is variable.
4. capital is a passive factor.

5. Capital can mobile very easily.
6. Capital helps to improve productivity of other factors of production.

- **FUNCTIONS**

1. Supply of Raw Materials
2. Supply of Appliances and Machinery
3. Provision of Subsistence (food, clothes and lodging)to the labourers
4. Provision of Means of Transport
5. Provision of Employment

Types of capital

1) Fixed capital and variable capital

- Fixed capital is the capital used in production which does not vary with small changes in output.eg: building, machinery
- Variable capital is the capital used in production which varies with small changes in output.eg:raw materials, wages

2) Liquid capital and sunk capital

- Liquid capital is the capital in the form of money which can be used for any purpose in production.
- Sunk capital is the capital which is specially designed for a particular purpose.eg:concrete building, train engine.

3) Remuneratory capital and auxiliary capital

- Remuneratory capital is the capital which leads to remuneration.eg: salary
- Auxiliary capital refers to the tools and machinery which help labour in production .

4) Floating capital

- Floating capital consists of money raw materials, fuels etc.

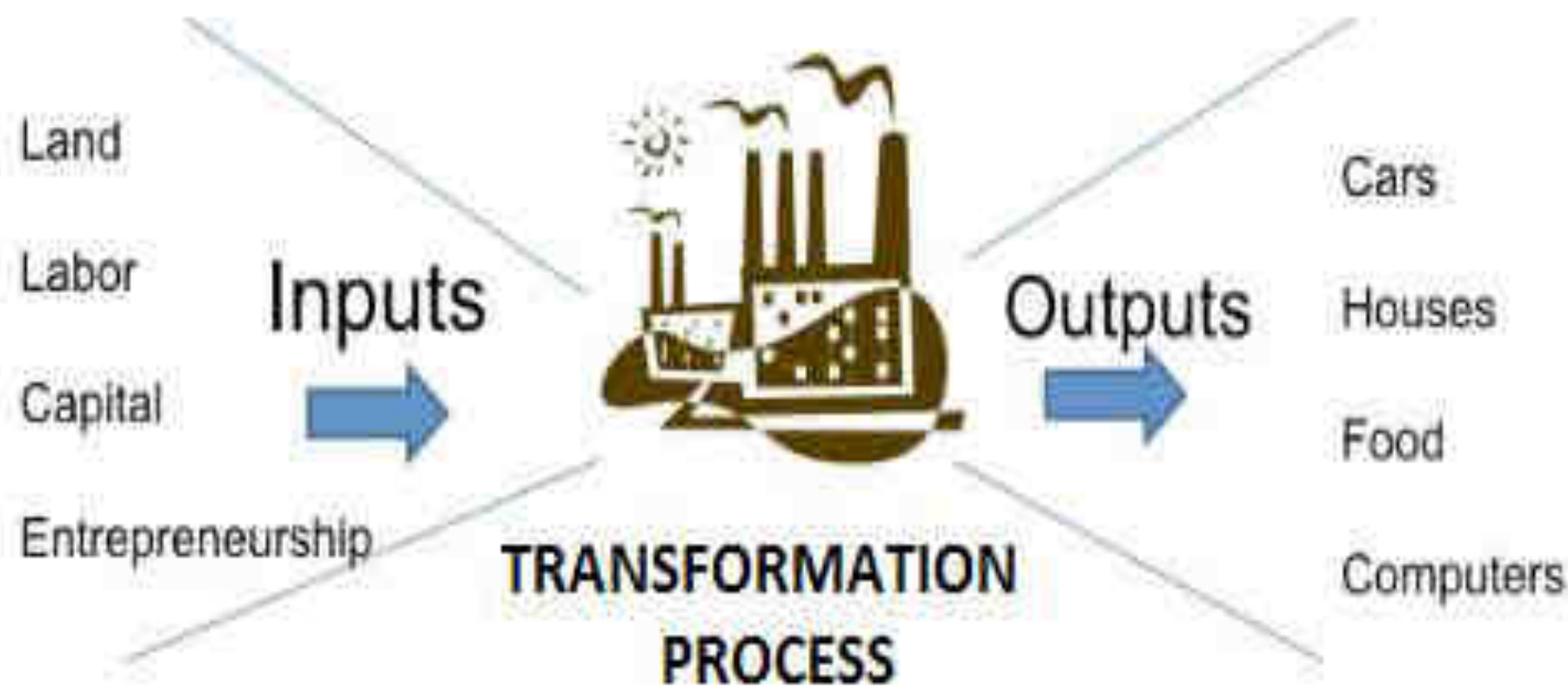
5) Working capital

- Working capital is the amount of cash required by a businessman to meet the day to day expenses.eg: money spent on wages

Organization/ Enterprise

- An enterprise is composed of individuals and physical assets with a common goal of generating profit.
- It means to bring the factors i.e. land, labour and capital together to undertake a business or production process.
- **Functions**
 1. Initiation/Planning
 2. Organization
 3. Direction and supervision
 4. Control
 5. Risk taking
 6. Innovation

The Production Process



Production function and Production analysis

- **Production function** refers to the functional relationship between the quantity of a good produced (output) and factors of production (inputs).

$$Q_x = f(L, C, T, \dots n)$$

where Q_x = output, L = labour, C = capital, T = level of technology
 n = other input factors employed in production

- **Production analysis** basically is concerned with the analysis in which the resources such as land, labour, and capital are employed to produce a firm's final product. To produce these goods the basic inputs are classified into two divisions –
- Variable Inputs: Inputs those change or are variable in the short run or long run are variable inputs.
- Fixed Inputs: Inputs that remain constant in the short term are fixed inputs.

- To develop theories of production, two different time periods are used.
- Short run (all factors of production can't be changed simultaneously)
- Long run (all factors of production can be changed)
- Short run production function can be studied by law of variable proportions.
- Long run production function can be studied by returns to scale.

LAW OF VARIABLE PROPORTIONS

- It refers to the input-output relation when output is increased by varying the quantity of one input
- The law of variable proportions states that as the quantity of one factor of production is increased, keeping the other factors fixed, the marginal product of that factor will eventually decline.
- An increase in some inputs relative to other fixed inputs will in a given state of technology cause output to increase, but after a point the extra output resulting from the same additions of extra inputs will become less and less.
- Assumptions
 1. The state of technology remains unchanged.
 2. The law operates in short run
 3. The variable factor units are homogeneous.

Returns to a factor

- Returns to a factor and returns to scale are two important laws of production. Both laws explain the relation between inputs and output.
- Returns to a factor relate to the short period production function when one factor is varied keeping the other factor fixed.
- Returns to scale relate to the long period production function when a firm changes its scale of production by changing one or more of its factors.
- Returns to a factor helps in finding out the optimal input combination for a production system.
- Factor productivities are
 1. Total product
 2. Average product
 3. Marginal product

- Total product(TP): total quantity of output that a firm can produce from a given quantity of one input factor ,while all other factors are constant.
- Average product(AP) : quantity of output produced per unit of input.

$$AP = \frac{\text{Total product of the factor}}{\text{Quantity of that factor}}$$

- Marginal product(MP):change in total product that results from a one unit increase in that factor of production, keeping all other factors constant , $MP = TP_n - TP_{n-1}$
- Consider a firm which produces different output levels of a commodity for various combinations of labour & capital

Q = 20		Q = 44		Q = 75		Q = 100		Q = 110	
L	C	L	C	L	C	L	C	L	C
1	10	2	10	3	10	4	10	5	10
2	6	3	7	4	7	5	8	6	8
3	4	4	5	5	5	6	6	7	7
4	2	5	3	6	4	7	5	8	6
8	1	6	2	10	3	10	4	10	5

- Draw a table for different output levels of a commodity keeping one factor ie capital, C constant. It is seen that when capital is constant at 10, labour increased from 1 to 5 and output varies from 20 to 110.

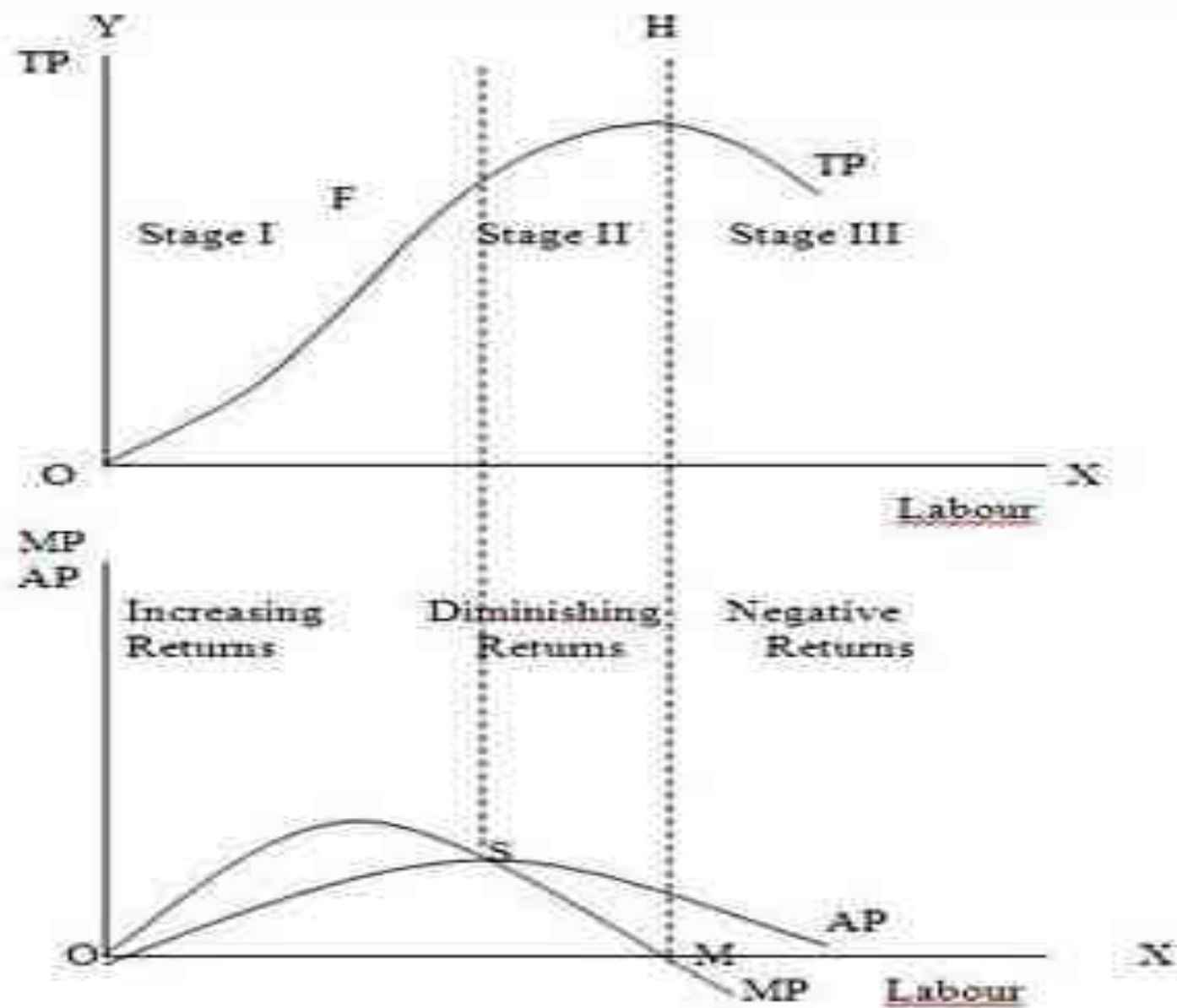
LABOUR	TP	AP	MP
1	20	$20/1=20$	-----
2	44	$44/2=22$	$44-20=24$
3	75	$75/3=25$	$75-44=31$
4	100	$100/4=25$	$100-75=25$
5	110	$110/5=22$	$110-100=10$

Illustration of the Law of proportion

- The law of variable proportion is illustrated in the following table and figure.
- Suppose there is a given amount (1 acre) of land in which more and more labour (variable factor) is used to produce wheat.

Units of Labour	Total Product	Marginal Product	Average Product
1	2	2	2
2	6	4	3
3	12	6	4
4	16	4	4
5	18	2	3.6
6	18	0	3
7	14	-4	2
8	8	-6	1

- It can be seen from the table that upto the use of 3 units of labour, total product increases at an increasing rate and beyond the third unit total product increases at a diminishing rate.
- It can be seen from the table that the marginal product of labour initially rises and beyond the use of three units of labour, it starts diminishing. The use of six units of labour does not add anything to the total production of wheat. Hence, the marginal product of labour has fallen to zero. Beyond the use of six units of labour, total product diminishes and therefore marginal product of labour becomes negative.
- Regarding the average product of labour, it rises up to the use of third unit of labour and beyond that it is falling throughout.
- Three Stages of the Law of Variable Proportions:
 1. Stage 1. Stage of Increasing Returns:
 2. Stage 2. Stage of Diminishing Returns:
 3. Stage 3. Stage of Negative Returns:



1) Stage 1. Stage of Increasing Returns:

- In this stage, total product increases at an increasing rate up to a point because of the efficiency of the fixed factors increases as additional units of the variable factors are added to it.
- The point F where the total product stops increasing at an increasing rate and starts increasing at a diminishing rate is called the point of inflection.
- At this point of inflection marginal product of labour is maximum, after which it diminishes. This stage is called the stage of increasing returns because the average product of the variable factor increases throughout this stage.
- This stage ends at the point where the average product curve reaches its highest point.

2) Stage 2. Stage of Diminishing Returns:

- In this stage, total product continues to increase but at a diminishing rate until it reaches its maximum point H where the second stage ends.
- In this stage both the marginal product and average product of labour are diminishing but are positive. At the end of the second stage, marginal product of labour is zero which corresponds to the maximum point H of the total product curve TP.
- This stage is important because the firm will seek to produce in this range.

3) Stage 3. Stage of Negative Returns:

- In stage 3, total product declines and therefore the TP curve slopes downward.
- Marginal product of labour is negative and the MP curve falls below the X-axis.
- In this stage the variable factor (labour) is too much relative to the fixed factor.

Law of returns to scale

- Long run is a period during which all factors of production can vary.
- Long run relationship between inputs and output of a firm is explained by the Laws of returns to scale.
- Law of returns to scale states that when there are a proportionate change in the amounts of inputs, the behaviour of output also changes.
- This behaviour of output can be explained as three cases :
 1. Increasing returns to scale
 2. Constant returns to scale
 3. Diminishing returns to scale

1) Increasing returns to scale

- If the output of a firm increases more than in proportion to an equal percentage increase in all inputs, the production is said to exhibit increasing returns to scale.
- For example, if the amount of inputs are doubled and the output increases by more than double, it is said to be an increasing returns to scale. When there is an increase in the scale of production, it leads to lower average cost per unit produced.

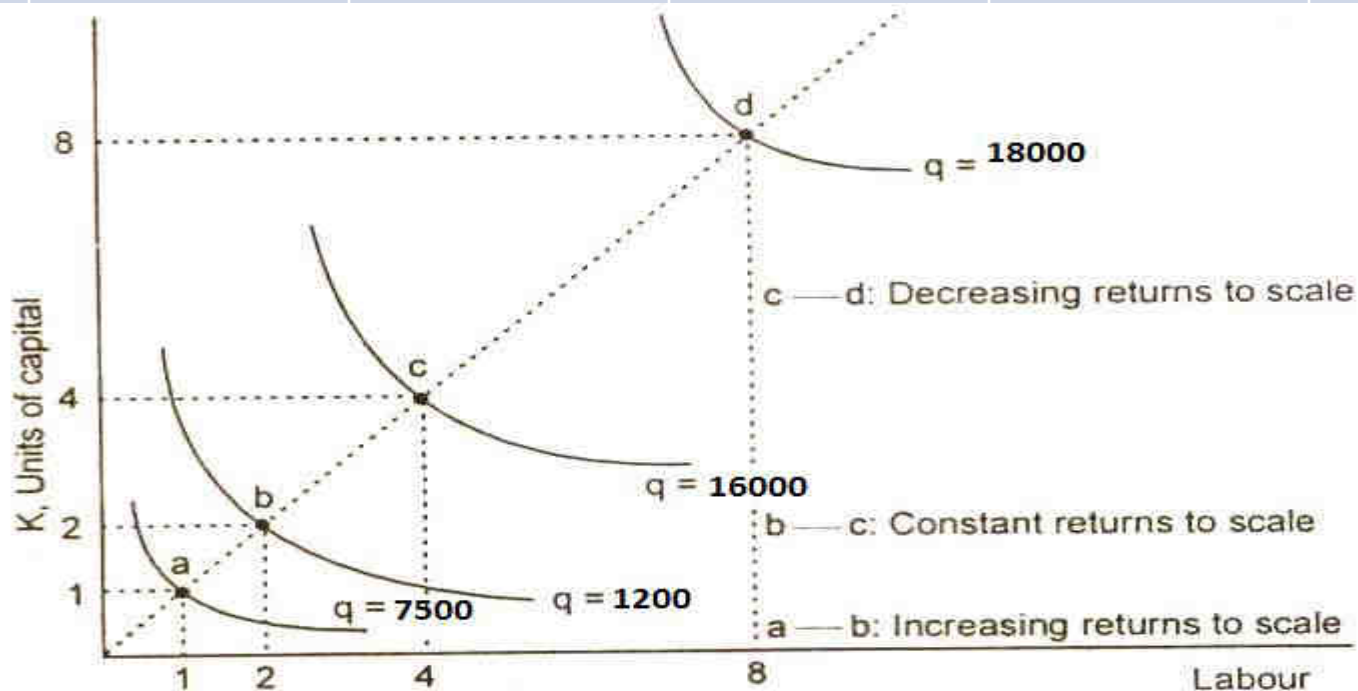
2) Constant returns to scale

- When all inputs are increased by a certain percentage, the output increases by the same percentage, the production function is said to exhibit constant returns to scale.
- **For example**, if a firm doubles inputs, it doubles output. The constant scale of production has no effect on average cost per unit produced.

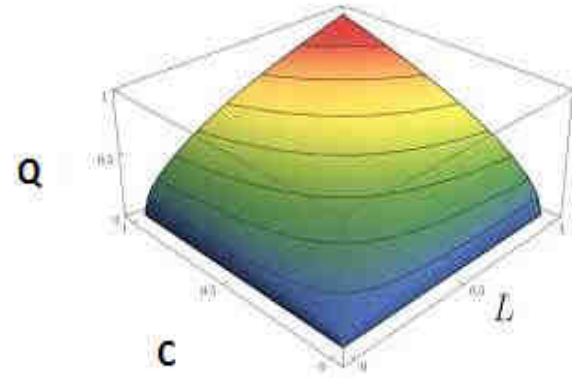
3) Diminishing Returns to Scale:

- The term 'diminishing' returns to scale refers to scale where output increases in a smaller proportion than the increase in all inputs.
- **For example**, if a firm increases inputs by 100% but the output decreases by less than 100%, the firm is said to exhibit decreasing returns to scale. Here the firm's scale of production leads to higher average cost per unit produced.

Units of capital	Units of labour	Total output	% change in inputs	% change in output	Returns to scale
20	150	3000	----	----	-----
40	300	7500	100	150	increasing
60	450	12000	50	60	increasing
80	600	16000	33	33	constant
100	750	18000	25	13	decreasing



Cobb Douglas function



- It is a particular functional form of the, production function widely used to represent the technological relationship between the amounts of two or more inputs, particularly capital and labour, and the amount of output that can be produced by those inputs.
- It is made by Paul H. Douglas and C.W. Cobb.

$$Q = A * L^{\alpha} * C^{\beta}$$

where Q = output, L = labour, C = capital

A , α and β are positive parameters where $\alpha > 0$, $\beta > 0$

- A represents the **total factor productivity (TFP)** that measures the change in output that isn't the result of the inputs. Typically, this change in TFP is the result of an improvement in efficiency or technology. α and β are the output elasticities of labour and capital.

merits

- It is analytical tool for research in the field of econometrics.
- It is most convenient for inter- industry comparisons.
- the function can be generalised in the case of 'n' factors of production.
- The unknown parameters a and p in the function can be easily computed.
- It becomes linear function in logarithm.

Limitations

- The function includes only two factors and neglects other inputs.
- The function assumes constant returns to scale.
- The function assumes perfect competition in the factor market which is unrealistic.
- It does not fit to all industries.
- It is based on the substitutability of factors and neglects complementarity of factors.

MODULE 3

BASICS OF MICRO ECONOMICS II

COST

- Costs are very important in business decision-making.
- In traditional theory, costs are generalized in two parts on the basis of time period i.e. costs in short run and costs in long run period.
- Cost function of a firm shows a relationship between output produced and the associated cost of producing.
- The Short-run Cost is the cost which has short-term implications in the production process.
- In the short run, the quantity of at least one input is fixed and the quantities of the other inputs can be varied.
- The Long-run Cost is the cost having the long-term implications in the production process.

Short run costs: Fixed Costs, Variable Costs, and Total Costs

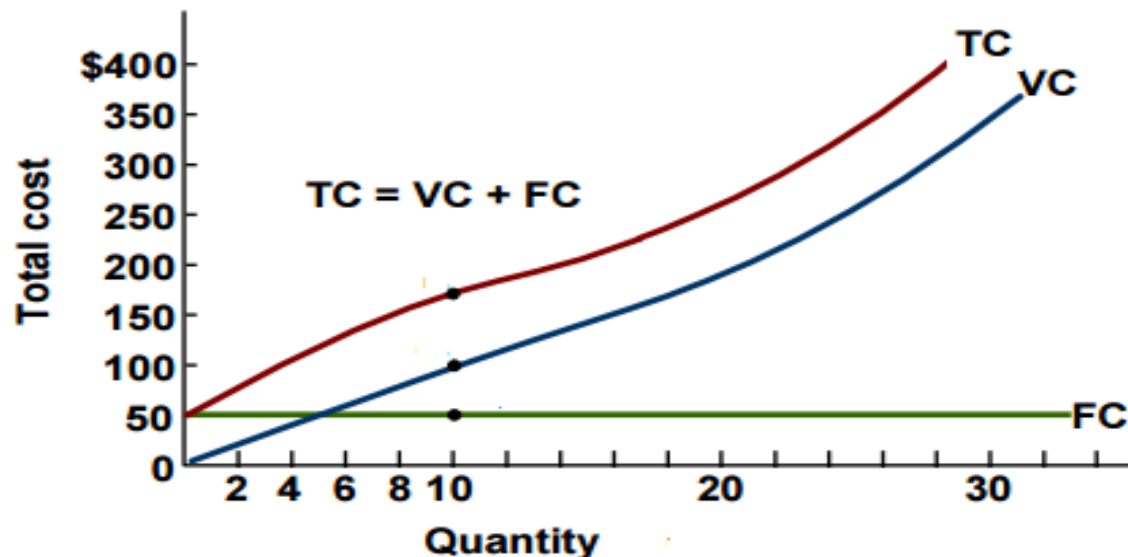
- Fixed costs are those that are spent and cannot be changed in the period of time under consideration.
- In the long run there are no fixed costs since all costs are variable. In the short run, a number of costs will be fixed.
- Variable costs refer to costs that change with the change in the level of production. Those costs change as output changes.
- Workers represent variable costs.
- The sum of the variable and fixed costs are total costs.

$$TC = FC + VC$$



Cost Curves

- To gain a greater understanding of cost concepts, it is a good idea to draw a graph.
- Quantity is put on the horizontal axis and a measure of various costs on the vertical axis.
- The total variable cost curve has the same shape as the total cost curve—increasing output increases variable cost.



Average fixed costs, Average variable costs and Average Total Costs

- Average fixed costs (AFC) equals fixed cost divided by quantity (Q) produced.

$$AFC = FC/Q$$

- Average variable costs (AVC) equals variable cost divided by quantity (Q) produced.

$$AVC = VC/Q$$

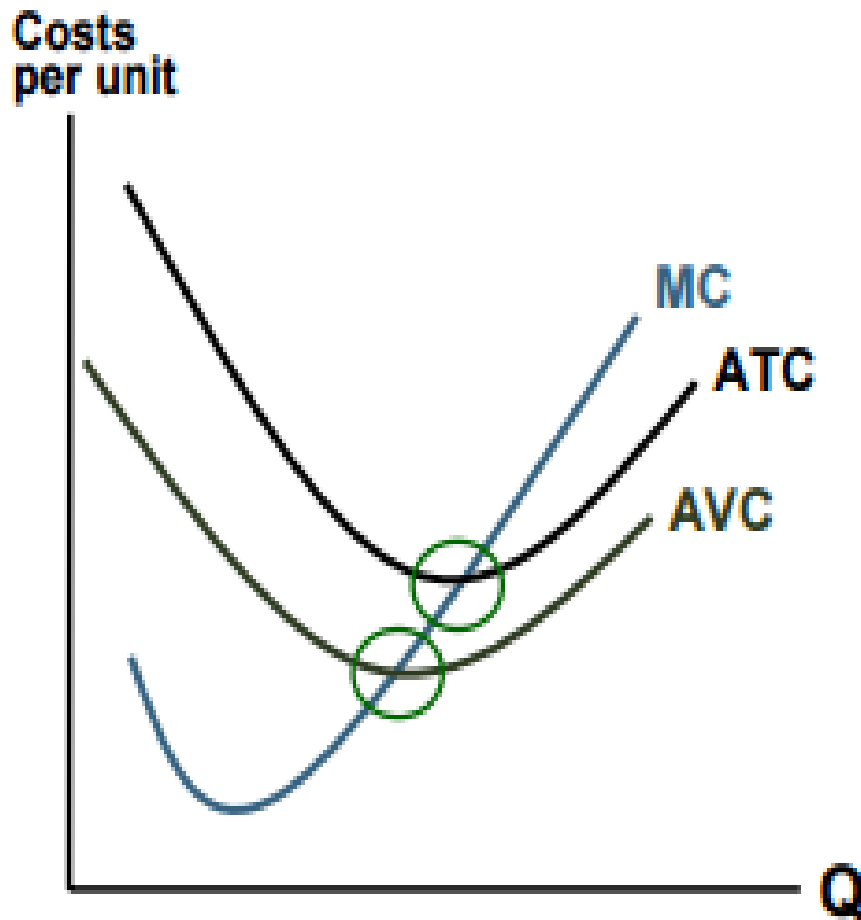
- Average total costs (ATC) equals total cost divided by quantity (Q) produced.

$$ATC = TC/Q \text{ or } ATC = AFC + AVC$$

- Marginal cost (MC) is the increase in total cost when output increases by one unit.

$$MC = \Delta TC / \Delta Q = \text{change in total cost} / \text{change in quantity of output}$$

Average and Marginal Cost Curves



The marginal cost curve goes through the minimum point of both the ATC and AVC curves

Average and Marginal Cost Curves

- The marginal cost curve goes through the minimum point of the average total cost curve and average variable cost curve. Each of these curves is U-shaped.
- The average fixed cost curve slopes down continuously.
- The average fixed cost curve starts out with a steep decline, then it becomes flatter and flatter.
- It shows that as output increases, the same fixed cost can be spread out over a wider range of output.
- When output is increased in the short-run, it can only be done by increasing the variable input, this is the reason for the U Shape of the Average and Marginal Cost Curves.
- Marginal and average productivities fall and marginal costs rise.
- The firm's eye is focused on average total cost—it wants to keep it low.

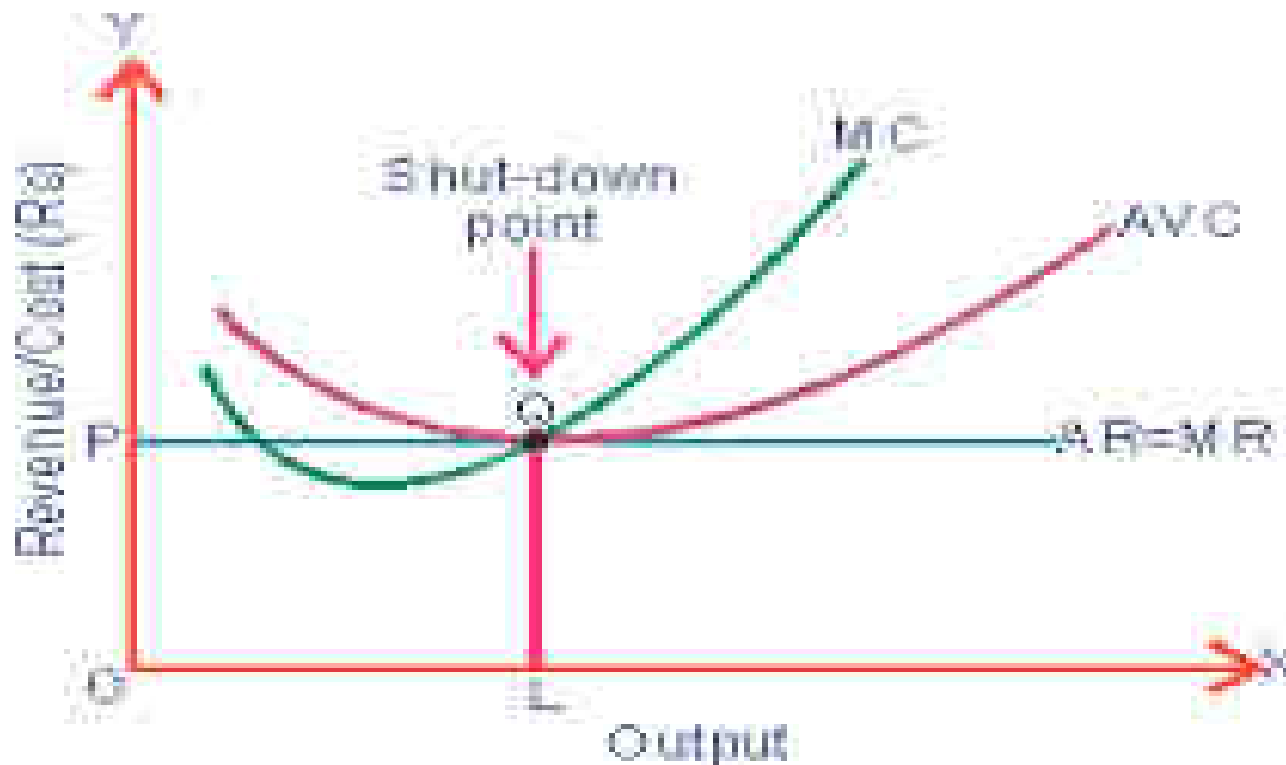
Relationship Between Marginal and Average Costs

- The marginal cost and average cost curves are related.
- When marginal cost exceeds average cost, average cost must be rising.
- When marginal cost is less than average cost, average cost must be falling.
- Marginal cost curves always intersect average cost curves at the minimum of the average cost curve.
- The position of the marginal cost relative to average total cost tells us whether average total cost is rising or falling.
- If $MC > ATC$, then ATC is rising
- If $MC > AVC$, then AVC is rising
- If $MC < ATC$, then ATC is falling
- If $MC < AVC$, then AVC is falling
- If $MC = AVC$ and $MC = ATC$, then AVC and ATC are at their minimum points

Shut down point

- It is the output level at which total revenue equals total variable costs, and the product price equals its average variable cost.
- A shutdown point is a point of operations where a company experiences no benefit for continuing operations or from shutting down temporarily.
- At this moment, there is no specific benefit to continuing production or to ending it.
- If an additional loss occurs, either through a rise in variable costs or a fall in revenue, the cost of operating outweighs the revenue.
- At that point, shutting down operations is more economical than continuing, even if the company continues to experience losses in other areas, such as fixed costs.

- The concept of shut-down point is used to analyse and understand the way companies take decision on the product level under competitive conditions.
- Christmas tree farmers, may shut down almost entirely during the off season. While fixed costs remain during the shutdown, variable costs can be eliminated.

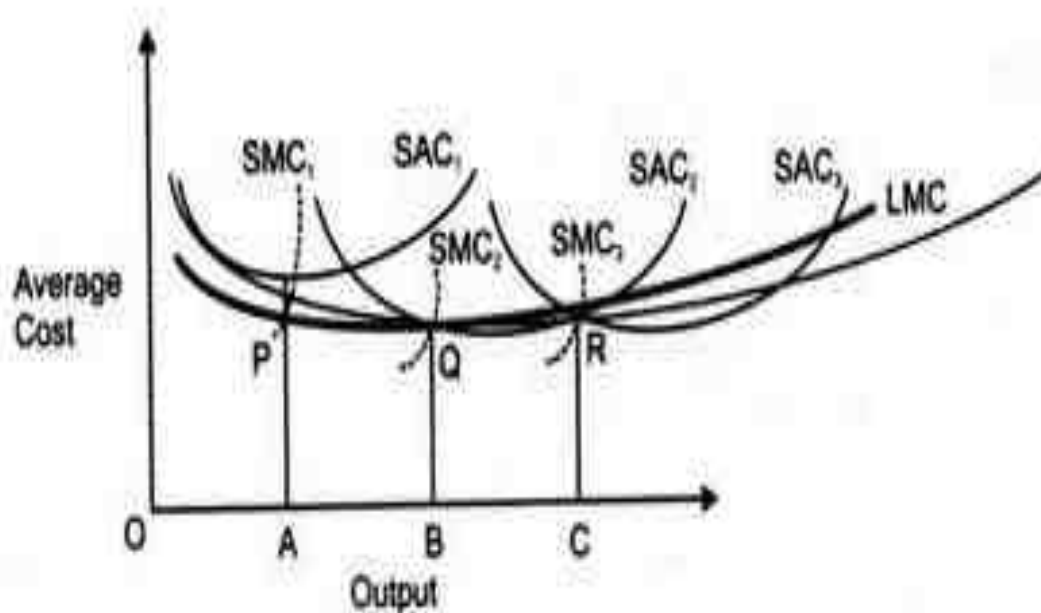


Long run costs:

- Long run is a period in which all the costs change as all the factors of production are variable.
- There is no distinction between the Long run Total Costs (LTC) and long run variable cost as there are no fixed costs.
- **Long Run Total Cost (LTC)** : It refers to the minimum cost at which given level of output can be produced.
- LTC is always less than or equal to short run total cost.
- **Long run Average Cost (LAC)** : It is equal to long run total costs divided by the level of output.
- Plant refers to a building (firm) capable of manufacturing goods of all sizes in large quantities to be sold by a business. Plants can be considered either a long term asset if owned by the firm, or both a long term liability if leased or rented. In the short run, plant is fixed and each short run curve corresponds to a particular plant.

Long Run Marginal Cost

- Long run Marginal Cost (LMC) is defined as added cost of producing an additional unit of a commodity when all inputs are variable.
- This cost is derived from short run marginal cost.
- On the graph, the LMC is derived from the points of tangency between LAC and SAC.



Long run total cost curve

- Short run total costs curves; STC_1 , STC_2 , and STC_3 are shown for different plant sizes.
- The LTC curve is made by joining the minimum points of short run total cost curves. Therefore, LTC envelopes the STC curves.

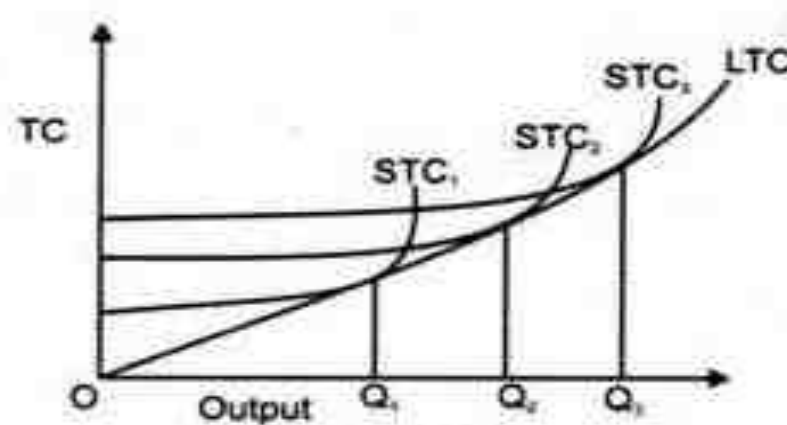
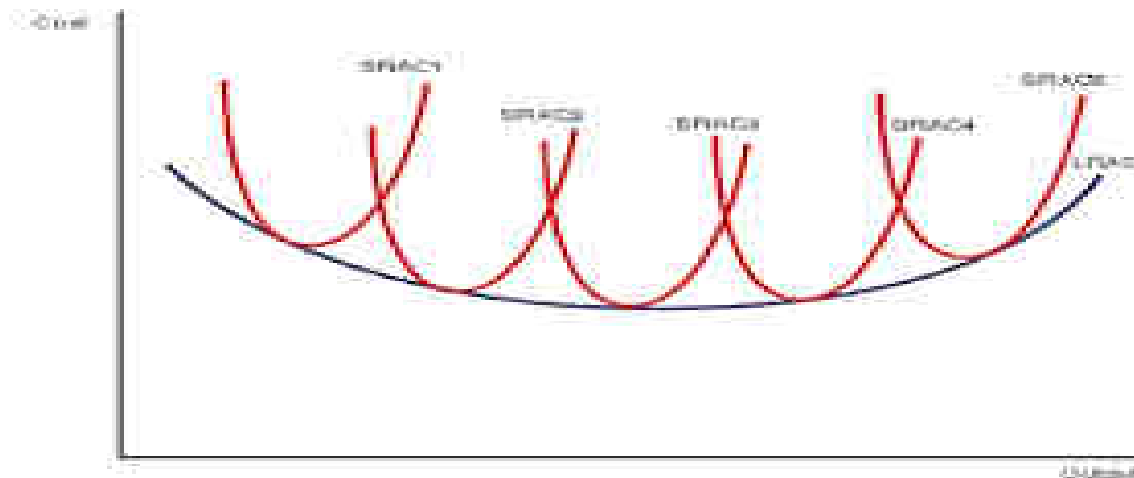


Figure-10: LTC Curve

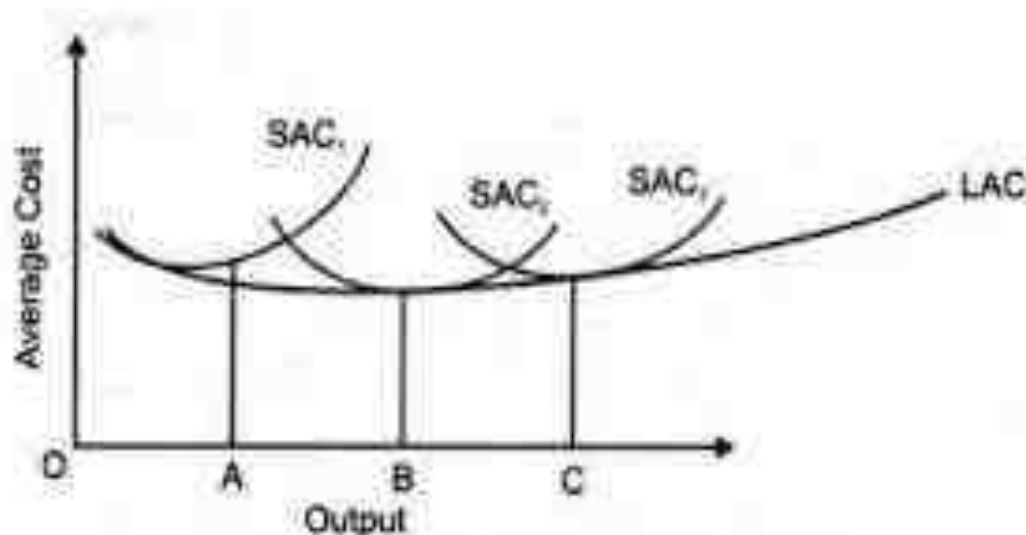
Long run average costs curve

- The derivation of long run average costs is done from the short run average cost curves.
- In short run, the plant sizes are fixed thus, organization increase or decrease the variable factors.
- In the long run, the organization can select among the plants which help in achieving minimum possible cost at a given level of output.
- The long run average costs curve is also called planning curve or envelope curve as it helps in making organizational plans for expanding production and achieving minimum cost.

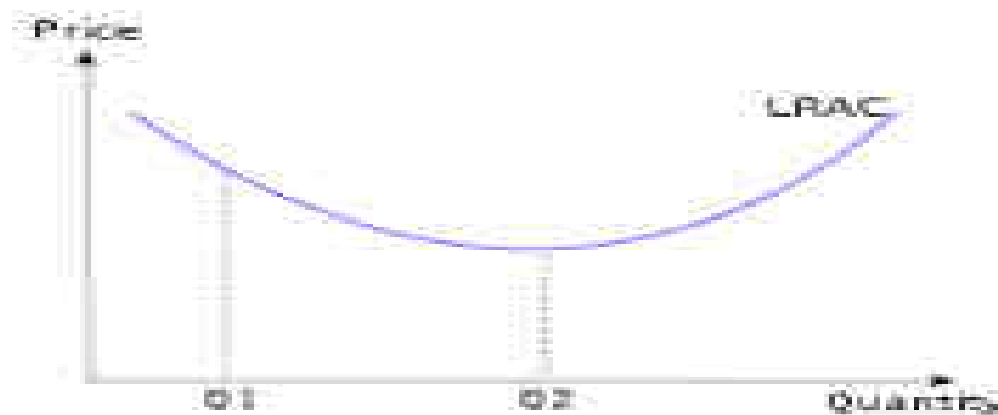


Explanation for LAC curve

- Consider three sizes of the plant and no other size of the plant can be built.
- In the long run, the organization can select among the plants which help in achieving minimum possible cost at a given level of output.
- From Figure, it can be noted that till OB amount of production, it is beneficial for the organization to operate on the plant SAC_2 as it entails lower costs than SAC_1 .



- If the plant SAC_2 is used for producing OA(short run), then cost incurred would be more.
- In the long run, it is clear that the producer would produce till OB on plant SAC_2 . On SAC_2 , the producer would produce till OC amount of output.
- If an organization wants to exceed output from OC, it will be beneficial to produce at SAC_3 than SAC_2 .
- In the long run, an organization has a choice to use the plant incurring minimum costs at a given output.
- LAC depicts the lowest possible average cost for producing different levels of output.
- LAC first falls and then rises, thus it is U- shaped curve.



Effect of returns to scale

- Returns to scale relate to the long period production function when a firm changes its scale of production by changing one or more of its factors.
- It affect the LTC and LAC curve.

1) Increasing returns to scale

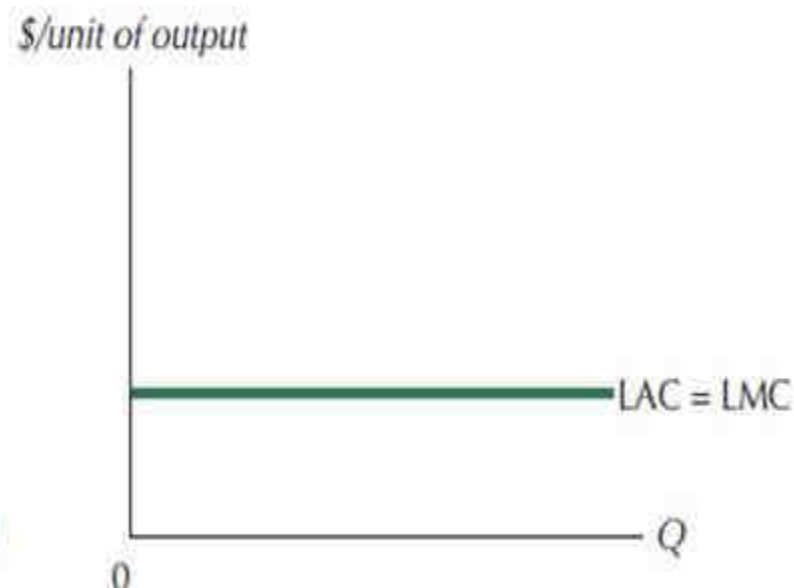
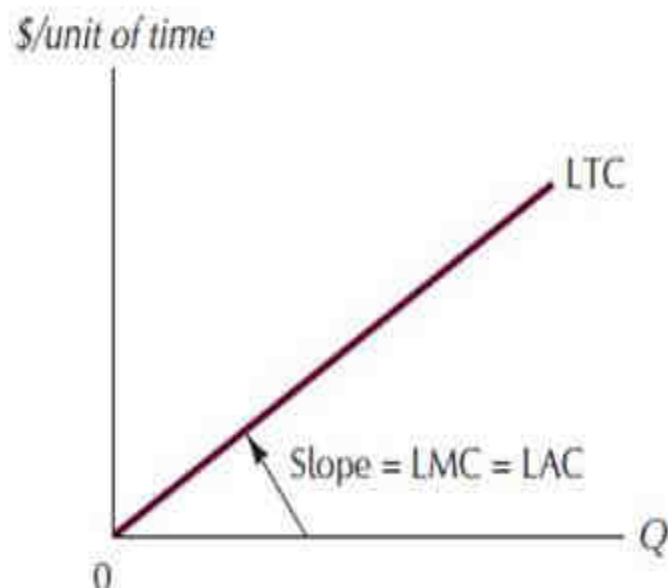
- If the output of a firm increases more than in proportion to an equal percentage increase in all inputs, the production is said to exhibit increasing returns to scale.
- LTC increases less than the increase in the output, thus, LAC falls.

2) Diminishing Returns to Scale:

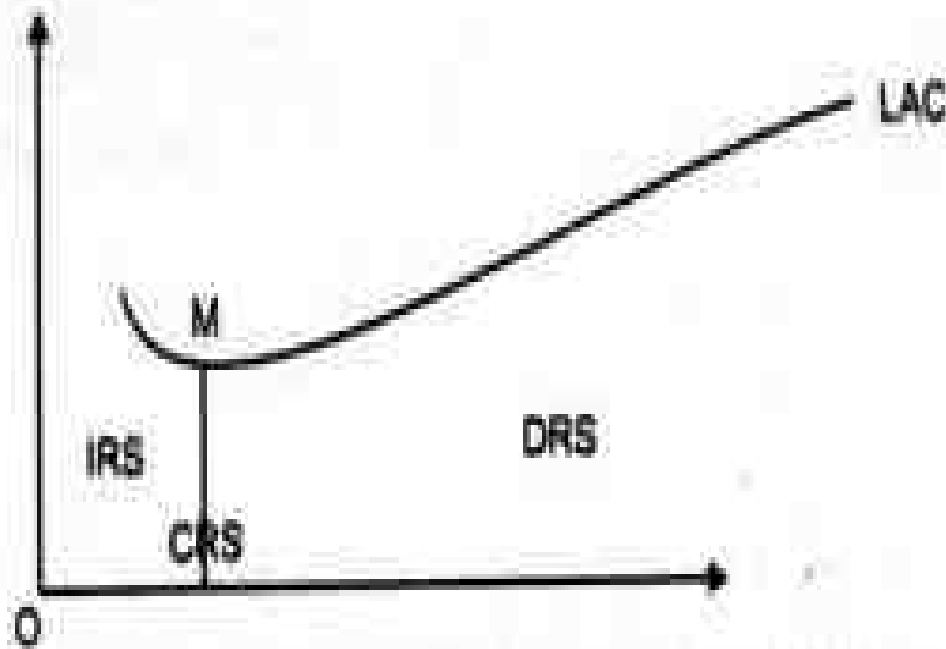
- The term 'diminishing' returns to scale refers to scale where output increases in a smaller proportion than the increase in all inputs.
- LTC increases more than the increase in output. As a result, LAC increases.

3) Constant returns to scale

- When all inputs are increased by a certain percentage, the output increases by the same percentage, the production function is said to exhibit constant returns to scale.
- LTC increases proportionately to the output; therefore, LAC becomes constant.



- In figure, up to M, LAC slopes downward. This is because at this stage IRS is applied.
- At M, LAC becomes constant.
- After M, LAC slopes upwards implying DRS.



Break-even analysis

- Breakeven analysis is used to determine when your business will be able to cover all its expenses and begin to make a profit.
- Breakeven analysis helps to set a price for a product which can boost profit much faster than increasing volume
- It is also known as cost-volume-profit analysis.
- It is the technique used to study the relationship between the total costs, total revenue and total profits and losses over the whole range of output.



Break even point

- In economics, the **break-even point** is the point at which revenues equal costs.
- Break-even point is the point at which gains equal losses.
- A company's breakeven point is the point at which its sales exactly cover its expenses.
- To compute a company's breakeven point in sales volume, you need to know the values of three variables:
 1. **Fixed costs:** Costs that are independent of sales volume, such as rent.
 2. **Variable costs:** Costs that are dependent on sales volume, such as the cost of manufacturing the product.
 3. **Selling price** of the product.

Expression for BEP

Let

F= fixed costs(independent of quantity)

V=variable cost per unit

S = selling price per unit

Q = quantity (volume of output)

TC = total costs

SR = sales revenue

$$\mathbf{TC = F + (V * Q) \quad \text{and} \quad SR = S * Q}$$

At break even point , $TC = SR$

$$F + (V * Q) = S * Q$$

Breakevenpoint In Units , $Q = F / (S - V)$ units

Breakeven Point in Units = Fixed Costs ÷ (Price - Variable Costs)

PV RATIO = Contribution /Sales

Assumptions

- The total costs may be classified into fixed and variable costs. It ignores semi-variable cost.
- The cost and revenue functions remain linear.
- The price of the product is assumed to be constant.
- The volume of sales and volume of production are equal.
- The fixed costs remain constant over the volume under consideration.

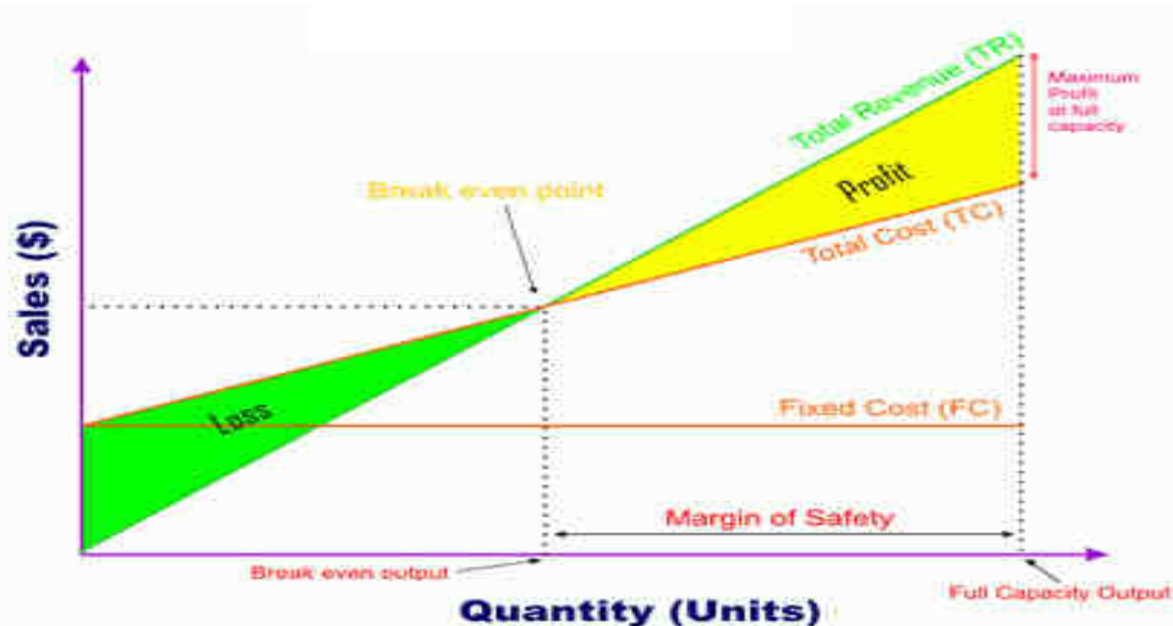
Margin Of Safety

- In Break even analysis, margin of safety is how much output or sales level can fall before a business reaches its breakeven point.
- Margin of safety indicates the amount by which a company's sales could decrease before the company will become unprofitable.

Margin of Safety = Total budgeted or actual sales – Break even sales

Break even chart

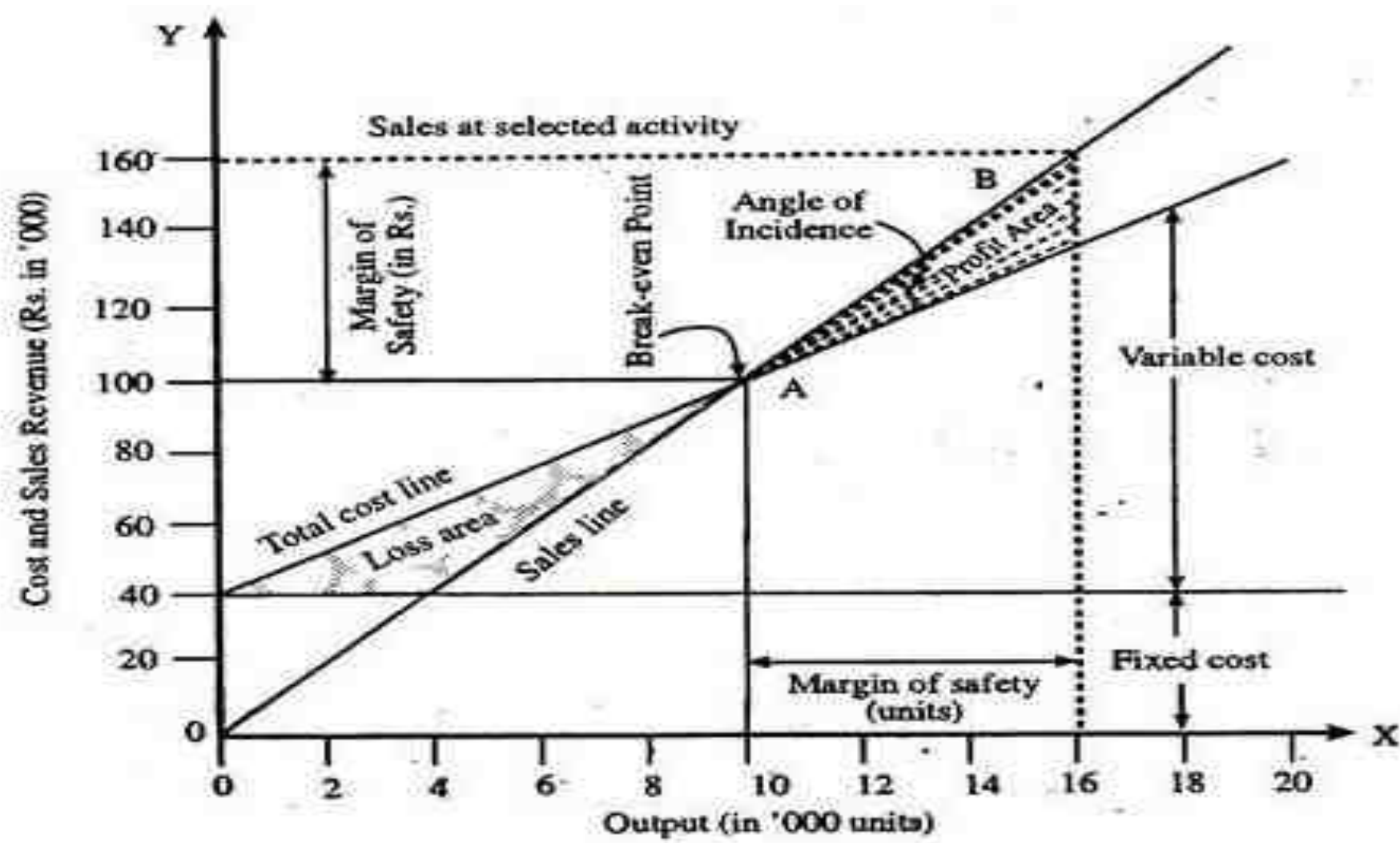
- The intersection of the total revenue and total cost curves gives the breakeven point
- It is a graphical representation of "break-even point" .
- The point at which neither profit nor loss is made is known as the "break-even point" and is represented on the chart below by the intersection of the two lines.
- It shows the relationship between costs, volume and profit.



Steps to construct

- Sales volume or output in units is shown horizontally on the X-axis.
- Sales revenue and costs are shown vertically on the Y-axis.
- Draw a horizontal line for total fixed costs starting at the point on the vertical axis at the level of costs.
- At the same starting point it is possible to draw the total costs line.
- The figures of sales are plotted from the origin and a line is drawn up which goes in the upward direction with the increase in production or sales.
- Where the sales revenue crosses the total costs line is the breakeven point. Read off the units of sales to give the break even level of sales.
- The gap between the total costs line and sales revenue line after the breakeven point represents the level of profit.
- If the business produces less than break-even level of output, it shall be running at a loss.

PROBLEM 1: A company produces a single product, currently utilizing 80% capacity with a turnover of Rs. 1,60,000 at Rs. 10 per unit. The marginal cost of production per unit is Rs. 6 and total fixed cost of the company is Rs. 40,000 per annum



Advantages & Disadvantages of BEP analysis

Advantages

Break-even analysis enables a business organization to:

- Measure profit and losses at different levels of production and sales.
- Predict the effect of changes in sales prices.
- Analyze the relationship between fixed and variable costs.
- Predict the effect of cost and efficiency changes on profitability.

Disadvantages

- Assumes that sales prices are constant at all levels of output.
- Assumes production and sales are the same.
- Break even charts may be time consuming to prepare.
- It can only apply to a single product or single mix of products

MARKET

- Market is a group of consumers and producers that interact to exchange a good or service.
- Market structure refers to all the characteristics of market that affect the behavior and interaction of buyers and sellers.
- **Features of Market structure**
 1. Number and size of buyers and sellers
 2. Type of the product
 3. Conditions of entry and exit
 4. Transparency of information
- **Types of Market structure**
 - I. Perfect (pure) competition
 - II. Monopolistic competition
 - III. Monopoly
 - IV. oligopoly

Perfect (pure) competition

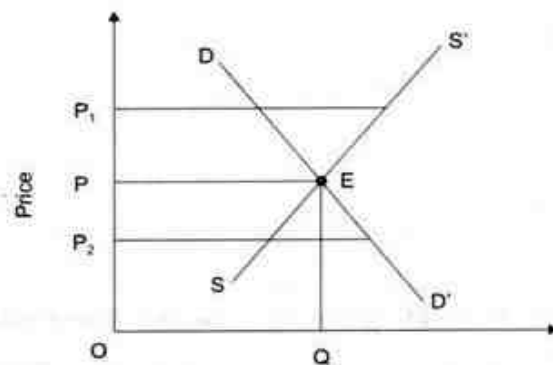
It is the situation prevailing in a market in which buyers and sellers are so numerous and the market price of a commodity is beyond the control of individual buyers and sellers.

Characteristics

1. Many sellers and buyers: there are enough so that a single seller's decision has no impact on market price.
2. Homogenous products: each seller's product is identical to its competitors'.
3. Firms are price takers: individual firms must accept the market price and can exert no influence on price.
4. Free entry and exit: no significant barriers prevent firms from entering or leaving the industry.
5. Perfect Knowledge of market Opportunities: every buyer and seller has full knowledge about the prevailing price of the product. This enables them to make use of any opportunity that may exist to strike a better bargain.

Price and output determination

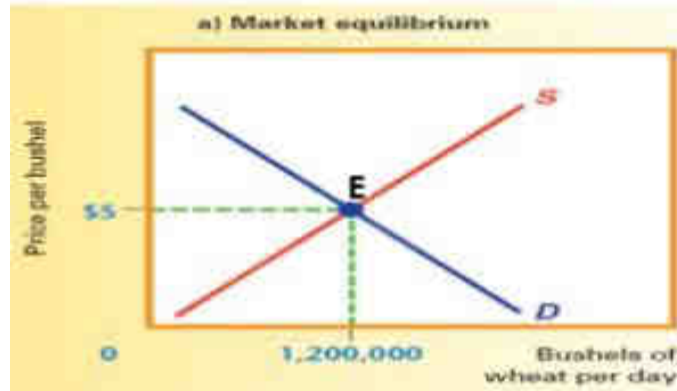
- In perfect competition, the price of a product is determined at a point at which the demand and supply curve intersect each other. This point is known as equilibrium point. At this point, the quantity demanded and supplied is called equilibrium quantity.



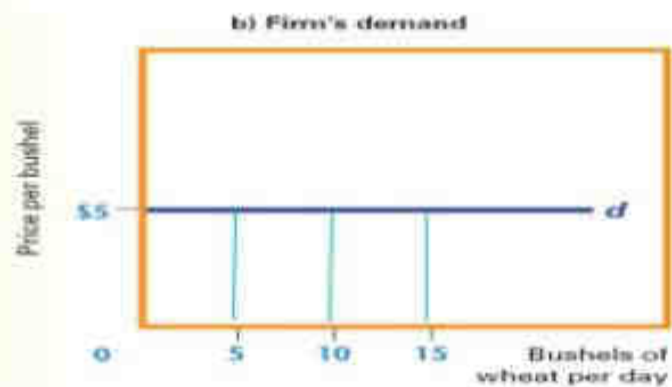
- In Figure, it can be seen that at price OP_1 , supply is more than the demand. Similarly, at price OP_2 , demand is more than the supply. Thus, E is the equilibrium at which equilibrium price is OP and equilibrium quantity is OQ .
- The firm will have to sell all its outputs at the prevailing price OP .
- The firm cannot increase or decrease the price because price is determined by the industry not by the firm.

- Under perfect competition, demand curve for the firm is perfectly elastic.
- Average revenue (AR) = marginal revenue (MR)

(Industry:- Price maker)



(Firm:- Price takes)



EXAMPLE

Competition

Burger King, McDonald's, and Wendy's are examples of competition. They all sell similar products and try to advertise their differences from the other. They also all have value menus in hopes to attract people to their restaurant and increase profits.



Advantages & Disadvantages

Advantages

- There are many firms so price of the product will be as low as possible.
- Resources are allocated in a most efficient way.
- Standard products are available in the market.

Disadvantages

- Undifferentiated products give little choice to the consumers.
- There are very little barriers to entry implying that any firm can enter the market and start selling the product.
- Since firms are small, less opportunity for R &D of new technology.

Monopolistic(Imperfect) competition

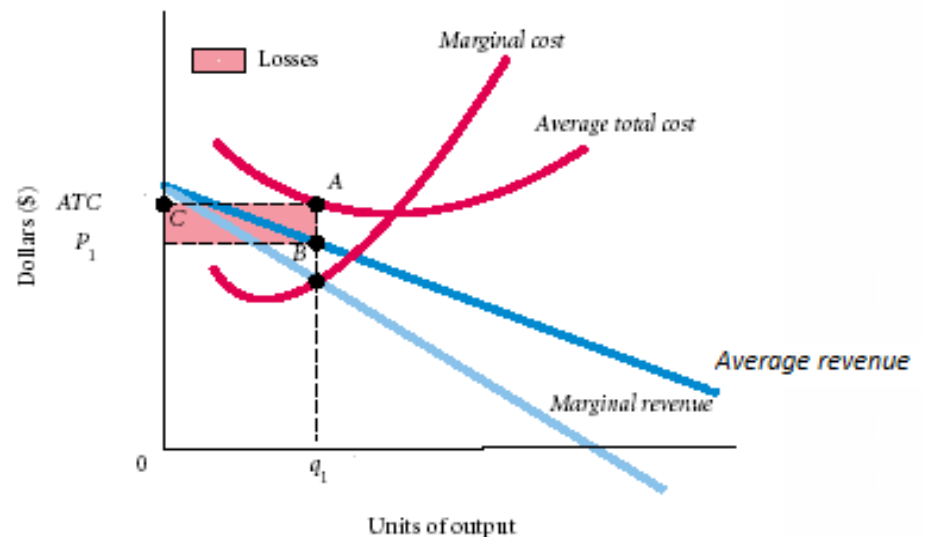
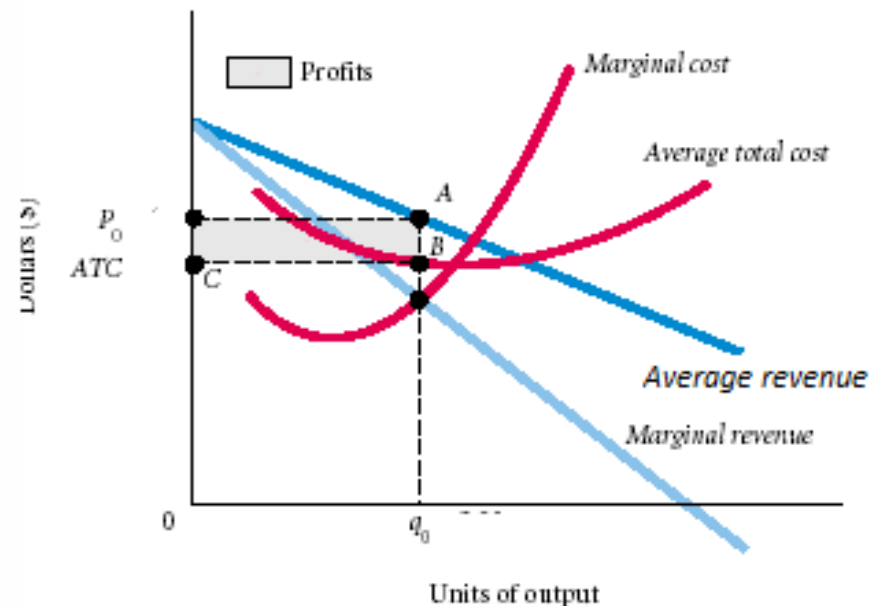
- Monopolistic competition refers to a market situation with a relatively large number of sellers offering differentiated (similar but not identical) products.
- Product differentiated in style, trademarks, brand name, location, packaging, pricing strategies, etc.
- Thus in market each seller is a monopolist of his differentiated product(it can get only from him).at the same time the products offered by different sellers are close substitutes of each other.

Characteristics

1. Many buyers and sellers
2. Products differentiated
3. Relatively free entry and exit
4. Each firm may have a tiny 'monopoly' because of the differentiation of their product
5. Firm has some control over price

Price and output determination

- Under monopolistic competition, organizations need to make optimum adjustments in the prices and output sold to attain equilibrium.
- Here profits are maximized at a point where marginal revenue(MR) is equal to marginal cost(MC).ie $MR = MC$
- The price determined at this point is known as equilibrium price and output produced at this point is known as equilibrium output.



- In the figure1, equilibrium point is E where $MR = MC$ and AB is the profit per unit.
- In the figure2, equilibrium point is E where $MR = MC$ and AB is the loss per unit

- **EXAMPLE**



Advantages & Disadvantages

Advantages

- Lack of barriers to entry
- Differentiation bring greater consumer choice and variety
- Product and service quality.
- Consumers become more knowledgeable of products.

Disadvantages

- Higher prices
- Monopolistic competition can be wasteful.
- Companies tend to spend m.ore money on advertising

Monopoly

- Pure monopoly exists when a single firm is the sole producer of a product for which there are no close substitutes.
- A monopolist produces less and charges a higher price. In monopoly, industry is the firm!!!

Characteristics

1. A single seller: the firm and industry are synonymous.
2. Unique product: no close substitutes for the firm's product.
3. The firm is the price maker: the firm has considerable control over the price because it can control the quantity supplied.
4. Entry or exit is blocked
5. Possibility of price discrimination (different prices from different buyers for the same good).

Types

1. Legal monopoly:

When a firm enjoys rights like trade mark, copy right, patent right, etc. then it is known as legal monopoly. Such monopoly rights are approved by the government.

2. Natural monopoly:

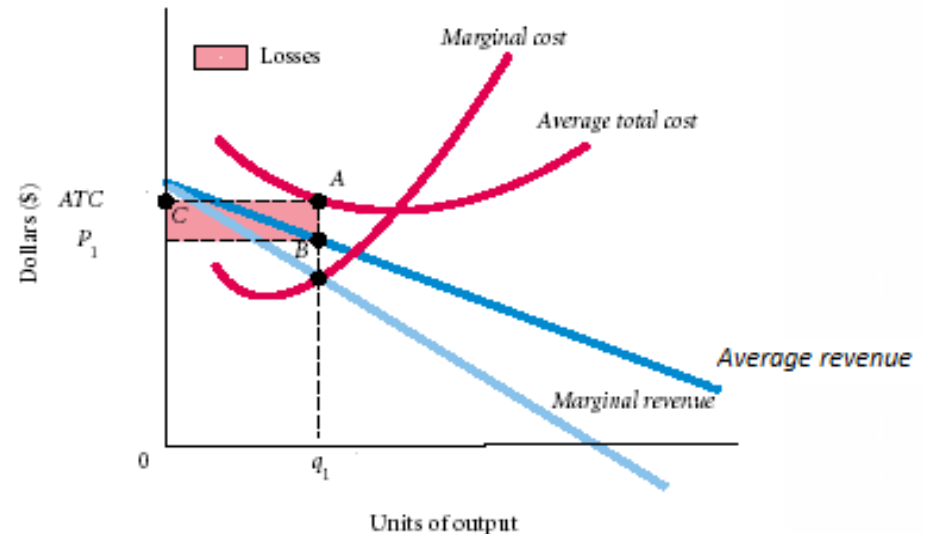
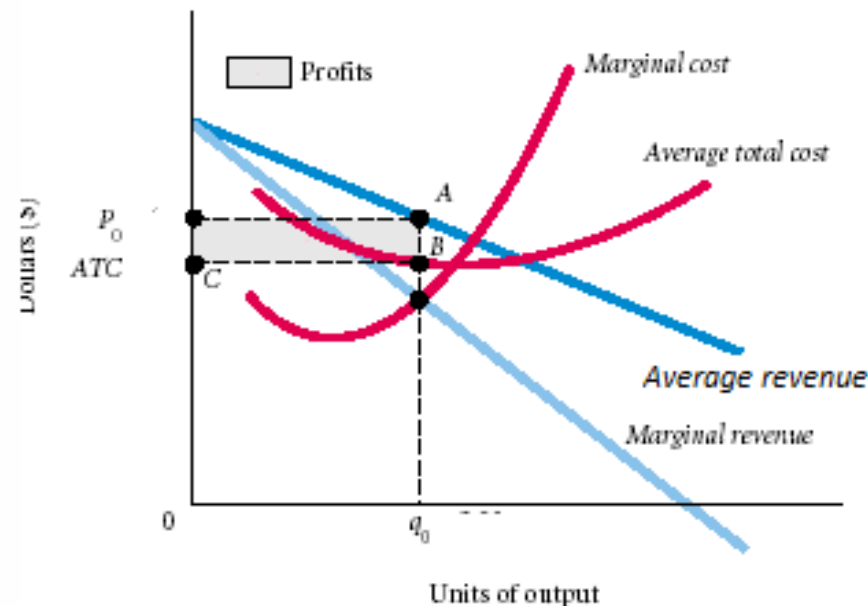
When a firm enjoys monopoly right due to natural factors like location reputation earned etc, it is called as natural monopoly. Natural talent, skill of the producer also makes him to enjoy this right

3. Social monopoly

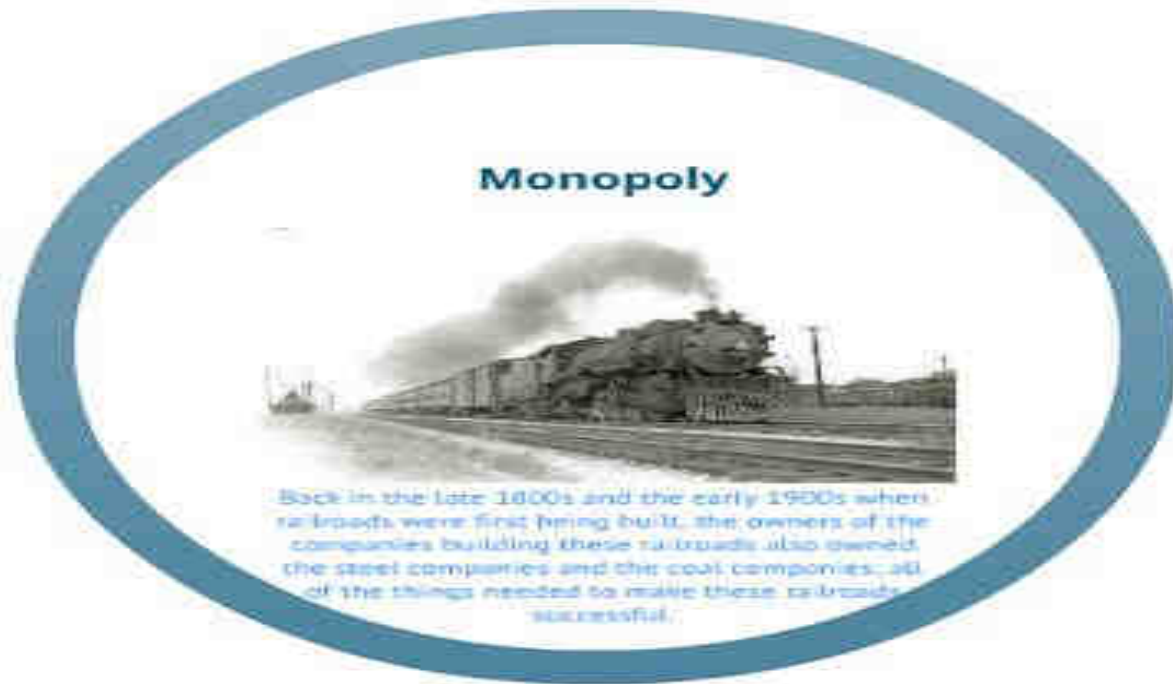
The monopoly firm owned and operated by public or state government is called public monopoly/social monopoly. The entire operation is controlled either by central or state government. Their main motive is to provide welfare to the public.

Price and output determination (same as monopolistic competition)

- Under monopoly competition, organizations need to make optimum adjustments in the prices and output sold to attain equilibrium.
- Here profits are maximized at a point where marginal revenue(MR) is equal to marginal cost(MC).ie $MR = MC$
- The price determined at this point is known as equilibrium price and output produced at this point is known as equilibrium output.



- Under monopolistic competition, the AR curve is more elastic i.e. for a given change in price demand will change more, since goods have close substitutes in monopolistic competition.
- In monopoly market goods don't have close substitutes.
- Goods with close substitutes show higher degree of elasticity of demand.
- **Example**



Advantages & Disadvantages

Advantages

- Lack of barriers to entry
- Differentiation bring greater consumer choice and variety
- Product and service quality.
- Consumers become more knowledgeable of products.

Disadvantages

- Higher prices
- Monopolistic competition can be wasteful.
- Companies tend to spend m.ore money on advertising

Oligopoly

- An oligopoly is a market structure in which a few firms dominate.
- Degree of competition is less than monopolistic competition and higher than monopoly.

Characteristics

- Large number of buyers
- Only a few sellers
- There are entry and exit barriers
- Product may be homogeneous or heterogeneous.
- The price output decisions of one firm are highly depend on those of others. ie Oligopolistic firms are mutually interdependent.

Possible outcomes for oligopoly

- stable prices (e.g. through kinked demand curve)
- Price wars (competitive oligopoly)
- Collusion for higher prices

Example



Pricing in oligopoly

- Models are kinked-demand theory/non-collusive oligopoly, Collusion and cartel model, and the price leadership model.

Collusion and cartel model

- The modern economists are of the view that independent price determination cannot exist for long in oligopoly. It leads to uncertainty and insecurity and to overcome them there is a tendency among oligopolists to act collectively by tacit collusion.
- Firms in an oligopoly try to form a **cartel** by agreeing to fix prices or to divide the market among themselves, or to restrict competition some other way.
- The primary characteristic of the Cartel Model is **collusion** among the oligopolistic firms.
- Cartels imply agreement among the competing oligopolistic with the aim of reducing the uncertainty arising from their mutual interdependence. The firms operate under this informal agreement to decide their price-output levels. This is termed as collusion.

- If the dominant firms in an oligopoly can successfully collude to fix prices, then they can be certain of each other's output, which will allow to maximize their profits.
- However, if any of the firms cheat, then a price war may ensue, lowering the profits of all firms, and maybe even causing them to operate a loss
- In most modern economies, collusion is generally against the law, however there are certain countries that engage in collusion to maximize their profits from their natural resources.
- The best example of a cartel today is the Organization of Petroleum Exporting Countries (OPEC), which comprises 12 oil-producing nations that supply 60% of all oil traded internationally. Prices are maintained by restricting each country of the OPEC cartel to a specific production allocation.

COMPARISON

Market structure	Examples	Number of producers	Type of product	Power of firm over price	Barriers to entry	Non-price competition
Perfect competition	Parts of agriculture are reasonably close	Many	Standardized	None	Low	None
Monopolistic competition	Retail trade	Many	Differentiated	Some	Low	Advertising and product differentiation
Oligopoly	Computers, oil, steel	Few	Standardized or differentiated	Some	High	Advertising and product differentiation
Monopoly	Public utilities	One	Unique product	Considerable	Very high	Advertising

MODULE 4

BASICS OF MACROECONOMICS

INTRODUCTION

Stock and flow concept

- Stock- quantity measured at a particular point of time.
- Flow- quantity measured over a specific period of time(per hour, per day, per month, per year).
- Stock influences the flow and flow influences the stock.

Four sectors of economy in macro economics

- Household sector(consumers/owners of factors of production)
- Producer sector(firms)
- Government sector(government as a welfare agency and as a producer)
- External/foreign sector

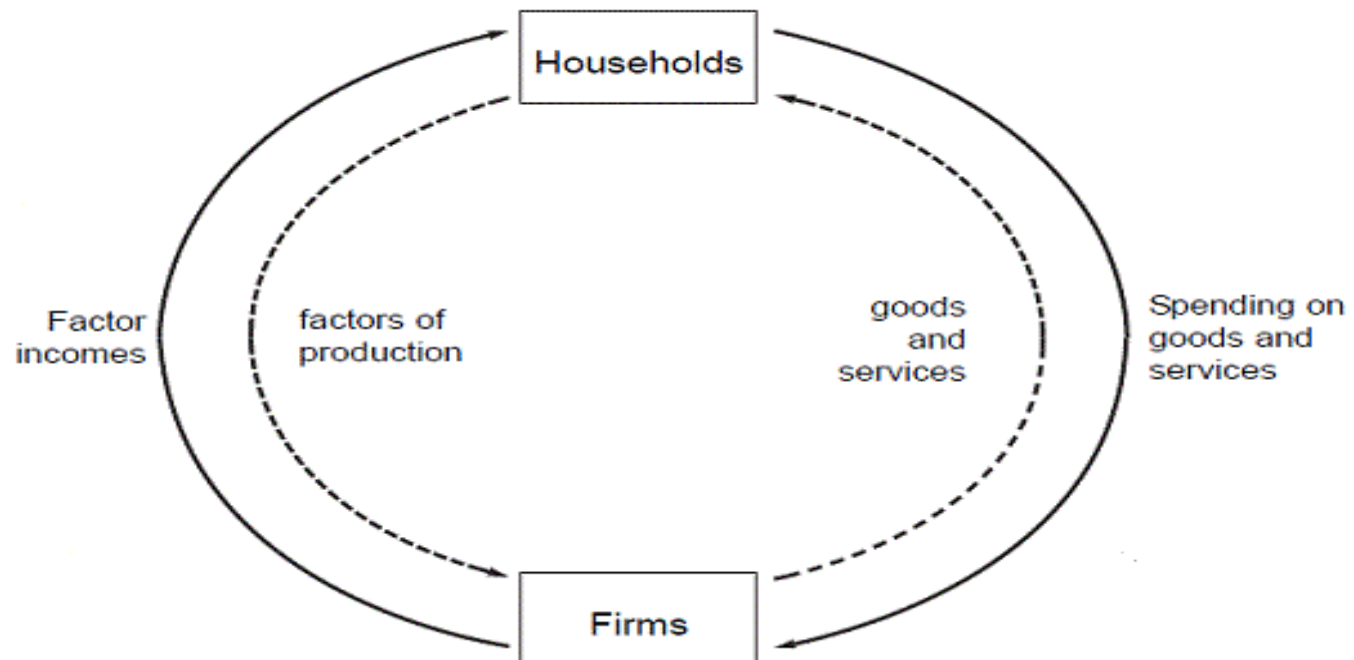
Circular flow of income

- As individuals and firms buy and sell goods and services, money flows among the different sectors of the economy. The circular flow of income describes these flows of money.
- The circular flow of income shows connections between different sectors.
- Importance
 1. Study of Problems of Disequilibrium.
 2. Effects of Leakages and Inflows.
 3. Link between Producers and Consumers.
 4. Estimation of national income.

Circular flow of income in two sector economy

- In two sector economy, there are only two sectors, the household and business.
- The household sector owns all the factors of production, that is, land, labour and capital. This sector sell the services of these factors to the business sector.
- The business sector, in turn, makes payments to the households for the services rendered by the them to the business
eg: wage payments for labour services, profit for capital supplied, etc.
- The business sector consists of producers(firms) who produce products and sell them to the household sector or consumers.
- The household sector buys the output of products of the business sector and makes payments to the latter.

- Thus payments go around in a circular manner from the business sector to the household sector and from the household sector to the business sector.
- There are also flows of goods and services in the opposite direction to the money payments flows.
- The model shows that **Factor Payments = Income Of Households = Consumption Expenditure Of Households.**

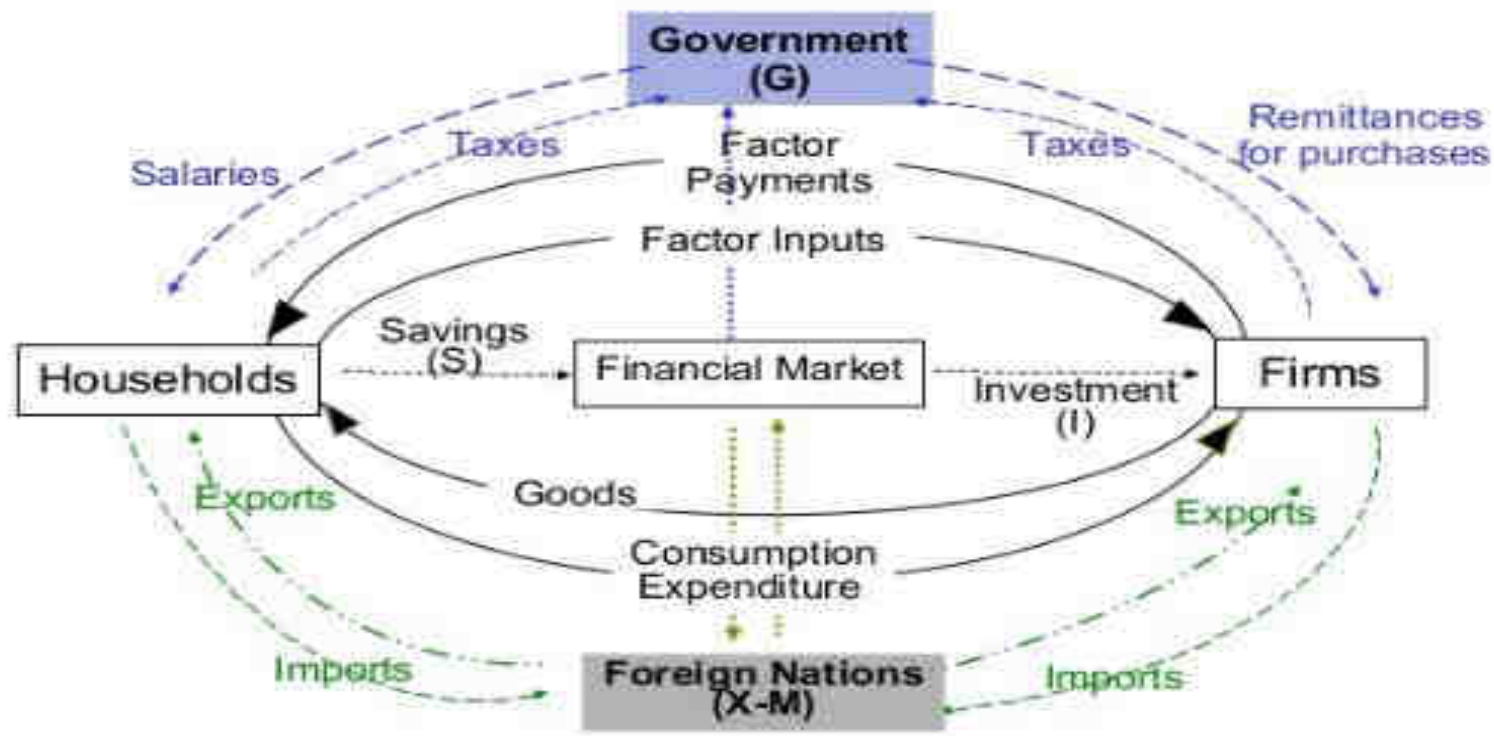


Circular flow of income in multi sector economy

- The circular flow model in four sector economy provides a realistic picture of the circular flow in an economy.
- Four sector model studies the circular flow in an open economy which comprises of household sector, business sector, government sector, and foreign sector.
- Households provide factor services to firms, government and foreign sector. In return, it receives factor payments. Households also receive transfer payments from the government and the foreign sector. Transfer payments include welfare (financial aid), social security.
- Households spend their income on:
 - (i) Payment for goods and services purchased from firms;
 - (ii) Tax payments to government;
 - (iii) Payments for imports.

- Business sector (Firms) receive revenue from households, government and the foreign sector for sale of their goods and services. Firms also receive subsidies from the government.
- Business sector (Firms) **makes payments for:**
 - (i) Factor services to households;
 - (ii) Taxes to the government;
 - (iii) Imports to the foreign sector.
- Government receives revenue from firms, households and the foreign sector for sale of goods and services, taxes, fees, etc. Government makes factor payments to households and also spends money on transfer payments and subsidies.
- Foreign sector receives revenue from firms, households and government for export of goods and services. It makes payments for import of goods and services from firms and the government. It also makes payment for the factor services to the households.

- The savings of households, firms and the government sector get accumulated in the financial market. Financial market invests money by lending out money to households, firms and the government. The inflows of money in the financial market are equal to outflows of money. It makes the circular flow of income complete and continuous.



National income concept

- National income is defined as the total money value of all the final goods and services produced in an economy in a given period of time.
- **National Income at Current Price:** It is the money value of final goods and services produced by normal residents of a country in a year, measured at the prices of the current year. It is also known as 'Nominal National Income'.
- For example, measurement of India's National Income of 2013-2014 at the prices of 2013-2014.
- **National Income at Constant Price:** It is the money value of final goods and services produced by normal residents of a country in a year, measured at base year price. It is also known as 'Real National Income'.
- Base Year is a normal year which is free from price fluctuations. Presently 2004-2005 is taken as the base year in India. If we measure India's National Income of 2013-2014 at the prices of 2004-2005, then it is termed as 'National Income at constant price'.

1) Gross National Product (GNP):

- GNP is the total value of all goods and services produced by the nationals of a country within the country or outside the country.
- GNP is the total measure of the flow of goods and services at market value resulting from current production during a year in a country, including net income from abroad.
- Net Factor Income From Abroad(NFIA)/Net foreign factor income (NFFI) is the difference between the aggregate amount that a country's citizens and companies earn abroad, and the aggregate amount that foreign citizens and overseas companies earn in that country.

$$\text{GNP} = \text{GDP} + \text{NFIA}$$

- GNP is identical to GNI.
- The gross national income (GNI) is the total domestic and foreign output claimed by residents of a country.

2) Gross Domestic Product (GDP):

- GDP is the total value of goods and services produced within the country during a year.
- It includes income from exports and payment made on imports during the year.
- $\text{GDP} = \text{market value of goods and services produced in the country} + \text{incomes earned in the country by the foreigners} - \text{incomes received by resident nationals from abroad.}$

$$\text{GDP} = C + I + G + (X - M)$$

Where C = Consumption

I = Investment

G = Government expenditure

X = Exports

M = Imports

- $\text{GDP} = \text{GNP} - \text{Net income from abroad.}$

- Goods and services can be converted in monetary terms in two ways
1) by using market price 2) by using payments for factor inputs(factor cost).
- The factor cost refers to the cost of factors of production that is incurred by a firm when producing goods and services.
- Factor cost = cost of production – indirect taxes + subsidies
- The market price is the price that consumers will pay for the product.
- Market price = cost of production + indirect taxes - subsidies
- GDP at factor cost = GDP at market price – indirect taxes (T) + subsidies (S_U).
- GDP at market price = GDP at factor cost + indirect taxes (T) - subsidies (S_U).
- Conceptually GDP at market price and GDP at factor cost must be equal but in real life they are not equal since GDP at market price includes indirect taxes and excludes subsidies.

Question

- If the Economic Survey says that Economy has grown by 8.6 % in this year, what does it indicate? Is it GDP at market prices or GDP at Factor Cost?
- Ans: GDP at Factor Cost. The reason is simple because it takes into consideration, the other things such as Indirect taxes, Subsidies etc. which may affect the data.

3) Net National Product (NNP) & Net domestic Product (NDP)

- Net National Product (NNP) is the amount of goods that can be consumed within a nation each year without reducing the amount that can be consumed in following years.

$$\text{NNP} = \text{GNP} - \text{Depreciation}$$

- Net domestic product (NDP) is an annual measure of the economic output of a nation that is adjusted to account for depreciation

$$\text{NDP} = \text{GDP} - \text{Depreciation}$$

- Depreciation means the consumption of fixed capital or reduction in value of assets by wear and tear.
- $\text{NNP at market price} = \text{GNP at market price} - \text{Depreciation}$
- $\text{NNP at factor cost} = \text{NNP at market price} - \text{indirect taxes (T)} + \text{subsidies (S}_U\text{)}.$

4) Personal income

- Personal Income(PI) is the total money income received by individuals and households of a country from all possible sources before direct taxes.
$$PI = NI + \text{Transfer Payments} + \text{Interest On Public Debt} - \text{Undistributed Corporate Profits} - \text{Corporate Taxes} - \text{Social Security Contributions}$$
- Transfer payment refers to income received without any direct contribution to the production of goods and services. Eg: Social welfare programs such as social security, old age or disability pensions, student grants, unemployment compensation and Subsidies paid to exporters, farmers, manufacturers.
- Public Debt is the total debt of all governmental units, including those of state and local governments.
- Corporation tax is a direct tax imposed by a jurisdiction on the income or capital of corporations or analogous legal entities.

- Undistributed Corporate Profits are corporate profits that are neither paid as corporate profits taxes nor paid to shareholders as dividends.
- Social security contributions are compulsory payments paid to general government that confer entitlement to receive a future social benefit. They include: unemployment insurance benefits and supplements, accident, injury and sickness benefits, old-age and disability benefits.
- Disposable Income(DI) is the income left after the payment of direct taxes from personal income. Disposable income means actual income which can be spent on consumption by individuals and families.

$$DI = PI - \text{Direct Taxes}$$

- Per Capita Income(PCI) means income per head. It is derived by dividing the national income of the country by the total population of a country, $PCI = \text{Total National Income} / \text{Total National Population}$
- If real PCI increases, it is considered to be an improvement in the overall living standard of people.

Measurement of national income

- NATIONAL INCOME = NATIONAL PRODUCT = NATIONAL EXPENDITURE
$$NI = NP = NE$$
- The national product refers to the value of output produced by an economy during the course of a year.
- National Expenditure refers to the value of money spent on goods and services in the economy in a year.
- NI can be viewed in three different ways
 1. As a flow of production of goods and services
 2. As a flow of income
 3. As a flow of expenditure on goods and services
- NI can be measured using 3 common approach:
 1. Product (Output) approach
 2. Income approach
 3. Expenditure approach

1) Product (output) method

- This method adds up the market values of all goods and services produced in the country by all the firms across all industries.
- Known as NI by industrial origin.
- Steps involved are

Step 1: The economy is divided into three sectors

1. Primary sector consist of agricultural mining and fishing
2. Secondary sector consists of industrial sectors(manufacturing)
3. Tertiary sector consisting of service sector (gas, electricity)

Step 2: The physical units of output are then interpreted in money terms i.e. by taking the market price of all the products.

Step 3: Thus obtained total values are then added up.
ie GDP at market price.

Step 4: Calculate GDP/GNP depending upon what data are being used.

GDP at factor cost = GDP at market price - indirect taxes (T) + subsidies (S_U).

GNP = GDP + NFIA (Net Factor Income From Abroad)

Step 5: Calculate NNP ie the net value is calculated by subtracting depreciation from the total value obtained.

NNP = GNP - Depreciation

- In this method goods produced in the particular year and only in their final form are considered.
- NI by this method can be calculated in two ways
 1. **Final product method** (final goods /services of all sectors are considered and the intermediate goods/ services are not taken into account)
 2. **Value added method** (gross value added at each stage of production is considered)
- Advantage: It reveals the relative importance of different sectors of the economy by showing their respective contributions to the economy.

Limitations of Product Method

- **Problem of Double Counting:**
 - unclear distinction between a final and an intermediate product.
- **Not Applicable to Tertiary Sector:**
 - This method is useful only when output can be measured in physical terms
- **Exclusion of Non Marketed Products**
 - E.g. outcome of hobby or self consumption
- **Self Consumption of Output**
 - Producer may consume a part of his production.

Income method

- In this method, incomes received by all the residents of a country for their productive services during a year are added up to obtain the national income.
- Here money sent by the citizens of the nation from abroad is added and payment made to foreign nationals is deducted.
- Steps involved are

Step 1: Identification and classification of producing enterprises as

(a) Primary sector (b) secondary sector (c) tertiary sector.

Step 2: After classifying the various enterprises, the factor incomes originating in those are further classified into following categories:

(a) Compensation of employees

ie Wages and salaries, Pension on retirement etc

(b) Operating surplus

ie Income from property and entrepreneurship such as rent, interest on capital, profit (dividend + corporate tax + undistributed profits of enterprises).

(c) Mixed income

ie Income of self-employed persons like farmers, barbers, doctor running a clinic at his residence

(d) Net factor income from abroad.

Step 3. Sum up all factor payments made within domestic territory to get Domestic Income (NDP at FC).

$$\text{NDPFC} = \text{Compensation of employees} + \text{Operating surplus} + \text{Mixed income}$$

Step 4. Estimate net factor income from abroad (NFIA) to arrive at National Income:

$$\text{NNPFC} = \text{NDPFC} + \text{Net factor income from abroad}$$

Limitations

This method exclude:

- Transfer payments
e.g: The state pension; income support for families on low incomes; the Jobseekers' Allowance for the unemployed and welfare assistance, such housing benefit.
- Private transfers of money from one individual to another.
- Income not registered with the Inland Revenue or Customs and Excise.
e.g: Every year, billions of pounds worth of activity is not declared to the tax authorities. This is known as the shadow economy or black economy

Expenditure method

- This method is based on the assumption that national income equals national expenditure.
- In this method ,the total expenditure incurred by the society in a particular year is added to get that year's national income.
- Steps involved are

Step 1: Identify the Economic Units incurring Final Expenditure:All the economic units are classified under 4 groups:

- (i) Household sector (ii) Government sector
- (iii) Producing sector (iv) Rest of the world sector

Step 2: Classification of Final Expenditure: Final expenditures incurred by these economic units are estimated and classified as

1) Consumption Expenditure (CE)

- It refers to expenditure incurred by households and private non-profit institutions serving households on all types of consumer goods.

2) Investment expenditure(IE)

- It include three major categories
 - a. Capital spending (purchase of new materials and equipments by the firm)
 - b. Residential construction (construction of new housing units and renovation of existing structures)
 - c. Inventory investment (unsold portion of output)

3) Government Expenditure(GE)

- It refers to the expenditure incurred by general government on various administrative services like defense, law and order, education etc.

4) Net .Exports (X-M).

- It refers to the difference between exports and imports of a country during a period of one year.

Step 3: The sum total of four components of final expenditure gives Gross Domestic Product at Market Price (GDP_{MP})

$$GDP_{MP} = CE + IE + GE + NE$$

Step 4: Calculate Domestic Income (NDP_{FC})

$$NDP_{FC} = GDP_{MP} - \text{Depreciation} - \text{Net Indirect Taxes.}$$

Step 5: Estimate net factor income from abroad (NFIA) to arrive at National Income:

$$\text{National Income (} NN P_{FC} \text{)} = NDP_{FC} + \text{NFIA}$$

- LIMITATIONS

1. Ignores barter system
2. Ignores own consumption
3. Affected by inflation

Difficulties in the measurement of national income

- Non availability of reliable statistics.
- The service of housewives is not included in the national income because this service is not sold in the market.
- Individuals do not keep correct account of their consumption.
- Illiteracy and ignorance..
- Lack of proper criteria for measuring the value of service

Inflation

- It is the rate at which the general level of prices for goods and services is rising .
- It decreases the purchasing power of currency.
- Central banks attempt to limit inflation in order to keep the economy running smoothly.
- Two broad categories:
 1. Money inflation is a sustained increase in the money supply of a country .
 2. Price Inflation is an increase in the price of goods/services over a specific period of time.



Classification

1. Demand-pull or excess demand Inflation(DPI):

- It occurs when the total demand for goods and services in an economy exceeds the available supply, so the prices for them rise in a market economy.
- This leads to a rightward shift of the aggregate demand curve.
- **E.g.** War produces this type of inflation because demand for war materials and manpower grows rapidly.

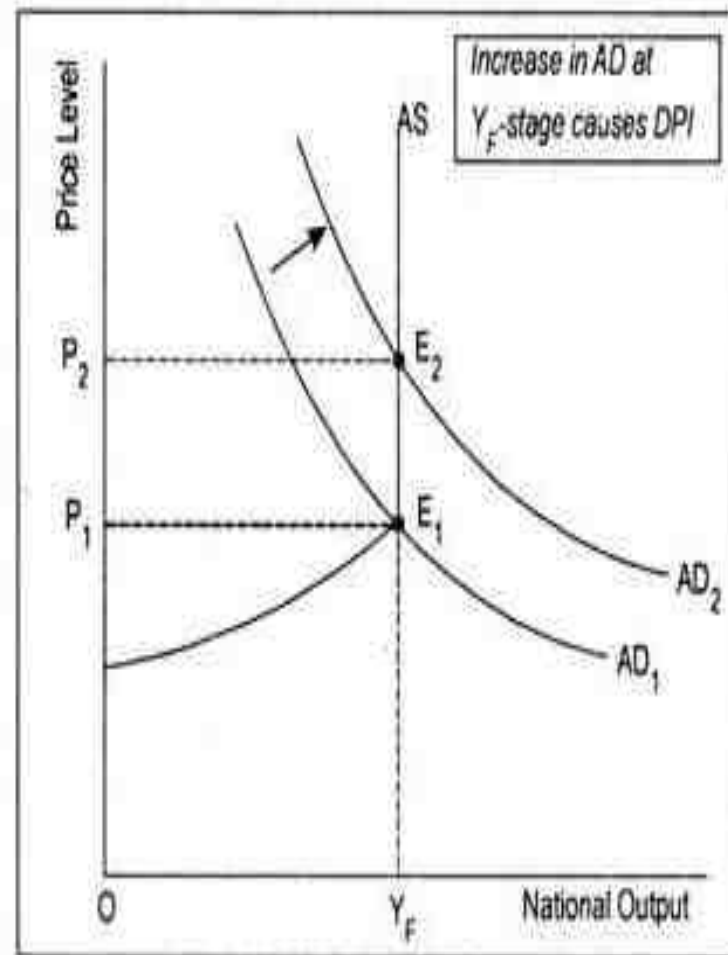
2. Cost-push inflation(CPI):

- This is caused when there is a supply shock.
- Cost-push inflation basically means that prices have been “pushed up” by increases in costs of any of the four factors of production (labor, capital, land or entrepreneurship).
- It causes aggregate supply curve to shift leftward.
- The best example to describe cost-push inflation is the oil shock in the 1970s.

When the OPEC raised oil prices, the United States was forced to pay higher prices. Because oil is used in essentially every industry, this sent supply shockwaves throughout the United States, and overall prices went up, while wages paid stayed the same.

Demand-pull Inflation

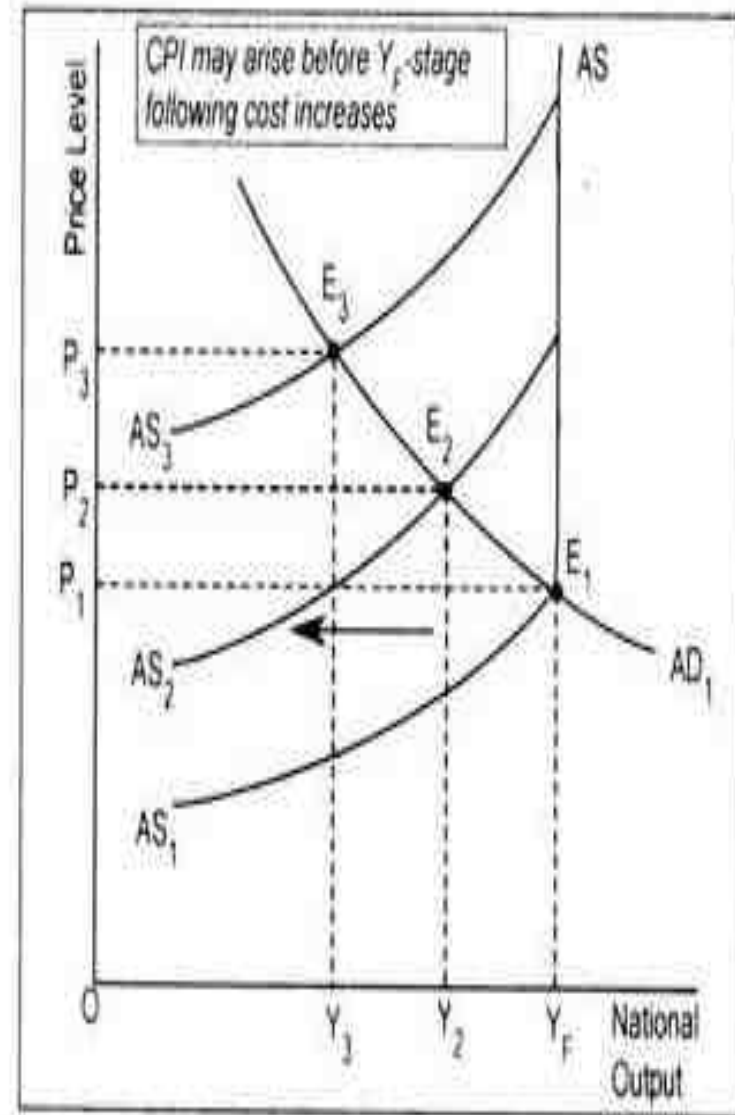
- Aggregate demand curve is negative sloping while aggregate supply curve before the full employment stage is positive sloping and becomes vertical after the full employment stage.
- AD_1 is the initial aggregate demand curve that intersects the aggregate supply curve AS at point E_1 . The price level determined is OP_1 .
- As aggregate demand curve shifts to AD_2 , price level rises to OP_2 . Thus, an increase in aggregate demand at the full employment stage leads to an increase in price level only, rather than the level of output.



DPI: Shifts in AD Curve

Cost-push inflation

- AS_1 is the initial aggregate supply curve. Below the full employment stage this AS curve is positive sloping and at full employment stage it becomes perfectly inelastic.
- Intersection point (E_1) of AD_1 and AS_1 curves determine the price level (OP_1).
- There is a leftward shift of aggregate supply curve to AS_2 . With no change in aggregate demand, this causes price level to rise to OP_2 and output to fall to OY_2 .
- With the reduction in output, employment in the economy declines or unemployment rises.
- Further shift in AS curve to AS_3 results in a higher price level (OP_3) and a lower volume of aggregate output (OY_3).



CPI: Shifts in AS Curve

3) Pricing power inflation/administered price inflation

- This occurs when the business houses and industries decide to increase the price of their goods and services to increase their profit margin.

4) Sectoral inflation

- This occurs when there is an increase the price of goods and services produced by a particular sector of industries. For example an increase in price of petrol would directly affect all other sectors.



CAUSES OF INFLATION

Inflation is caused due to several economic factors:

1. When the government of a country print money in excess, prices increase to keep up with the increase in currency, leading to inflation.
2. Increase in production and labour costs, have a direct impact on the price of the final product, resulting in inflation.
3. When countries borrow money, they have to cope with the interest burden. This interest burden results in inflation.
4. High taxes on consumer products, can also lead to inflation.

Methods to control inflation

1. Fiscal measures.
2. Monetary measures.

Monetary measures

- Monetary Policy can control the growth of demand through an increase in interest rates and a contraction in the real money supply.
- The policy is employed by the central bank to alter the cost of credit, demand for credit and the availability of credit. It is also known as the credit control policy.
- A central bank has the following instruments of credit control
 - (a) Bank rate.
 - (b) Open market operations.
 - (c) Variable cash reserve ratio.
- All these measures make bank credit more costly. Higher cost of credit makes less availability of credit and, hence, less money supply which reduces aggregate demand. Since all these measures reduce the credit-creating capability of commercial banks and inflation is thereby controlled.

Fiscal measures

- Fiscal policy measures comprise the policy of the government relating to taxation, expenditure and borrowing. These three elements of fiscal policy influence aggregate spending.
- The government can increase taxes (such as income tax and VAT) and cut spending. This improves the budget situation and helps to reduce demand in the economy.
- When a country is exposed to inflation, the government may raise both direct and indirect taxes to wipe out excess aggregate spending.
- Fiscal policy exposed to certain limitations.
 1. Delays: Recognition Lag (the amount of time it takes policy-makers to realize that a policy is needed), Decision Lag (the amount of time needed to formulate and implement an appropriate policy), Impact Lag (the amount of time between a policy's implementation and its having an effect on the economy)
 2. Political Visibility: fiscal policy and politics go hand in hand in the sense that fiscal policy is never taken in a political vacuum. Political compulsions greatly reduce its effectiveness.

Inflation rate

- The rate at which prices increase over time, resulting in a fall in the purchasing value of money.

$$\text{Inflation Rate} = ((T2 - T1) / T1) \times 100$$

T1 = Last year's index/ Price for the last year

T2 = current year's index/ Price for the current year

- Price index is a normalized average of price for a given class of goods or services in a given region, during a given interval of time.

$$\text{Price index(PI)} = (\text{Current year's price} / \text{Base year's price}) * 100$$

- Various measures of inflation are
 1. Producer Price Index(PPI)
 2. Wholesale Price Index(WPI)
 3. Consumer Price Index(CPI)
 4. Cost Of Living Indices(COLI)
 5. Service Price Index(SPI)

1) Producer Price Index(PPI)

- The Producer Price index (PPI) is a family of indexes that measures the average change in selling prices received by domestic producers of goods and services over time.
- It represents the pressure being put on producers by the cost of their raw materials, which is passed on to the consumers as inflation.

2) Wholesale Price Index(WPI)

- The Wholesale Price Index (WPI) is the price of a representative basket of wholesale goods.
- It is the most popular measure of economy wide inflation.

3) Consumer Price Index(CPI)

- Consumer Price Index(CPI) measures the price of a selection of goods purchased by a typical consumer.
- The CPI is widely used as an indicator of the rate of inflation.

4) Cost Of Living Indices(COLI)

- An inflationary indicator that measures the change in the cost of a fixed basket of products and services, including housing, electricity, food, and transportation.
- The cost-of-living index is published monthly. It is similar to cost-of-living index.

5) Service Price Index(SPI)

- The services producer price index is a business cycle indicator which provides information on the development of prices for numerous service industries like railways, port, banking.
- Inflationary gap – It is the difference between a country's real gross domestic product (GDP) and the level of GDP with full employment in the economy. It represents rise in price due to a gap between effective demand and supply.

Deflation

- Deflation refers to the persistent decrease in the average price level in the economy.
 - Deflation is accompanied by decline in money incomes of people.
 - In times of deflation, the purchasing power of currency and wages are higher than they otherwise would have been.
- causes of price deflation.
1. Increase in the demand for cash savings by consumers and businesses
 2. Increase in economic productivity, which grows the supply of goods and boosts the purchasing power of incomes.

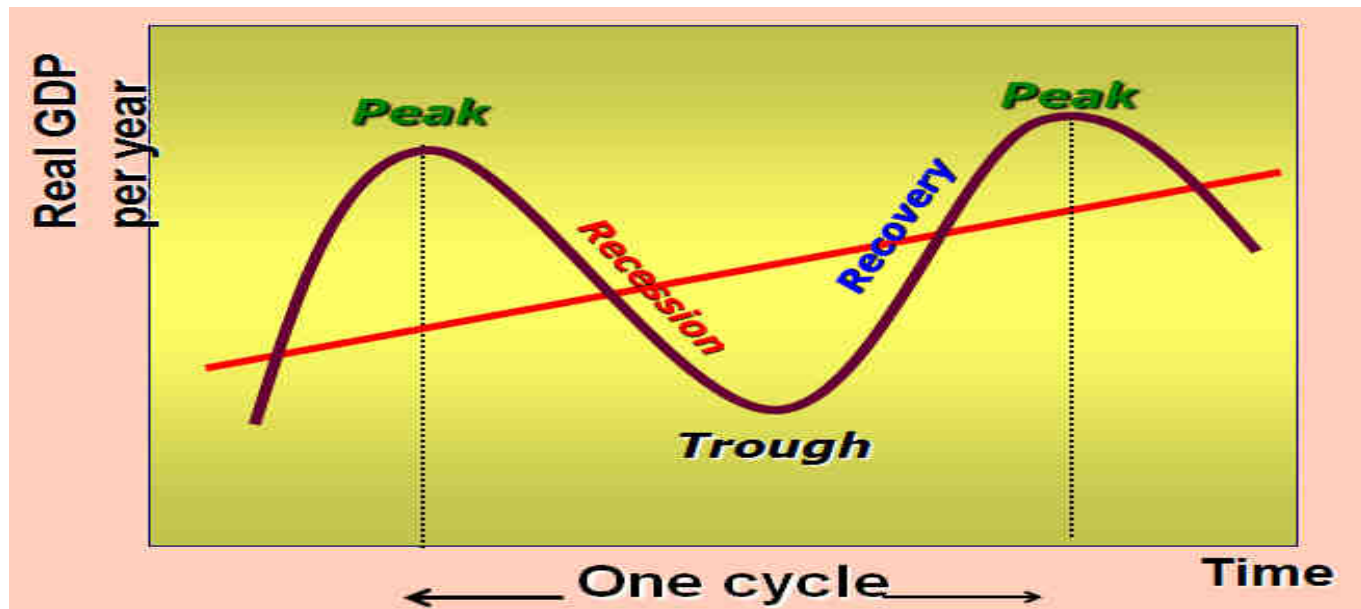


Reserve Bank of India (RBI)

- India's central bank.
 - The Reserve Bank of India was established in 1935 with the provision of Reserve Bank of India Act, 1934.
 - Though privately owned initially, in 1949 it was nationalized and since then fully owned by Government of India.
 - India manages inflation through
 1. Monetary policy which monitored by reserve bank of India.
 2. Fiscal policy regulated by union finance ministry.
- {ADD THE DETAILS IN THE SLIDE “MONETARY MEASURES”}**
- This monetary policies increases the cost associated with borrowing currency, thereby reducing the demand of goods and services, which in turn reduces or stabilizes the prices of these goods and services.

Trade cycles/ Business cycle

- The term business cycle refers to the recurrent ups and downs in the level of economic activity, which extend over several years.
- Individual business cycles may vary greatly in duration and intensity.
- Tracked by NBER (National Bureau of Economic Research).



Phases of the Business Cycle

1. Peak or prosperity phase

- Real output in the economy is at a high level
- Unemployment is low
- Domestic output may be at its capacity
- Inflation may be high.

2. Contraction/recession phase

- Real output is decreasing
- Unemployment rate is rising.
- As contraction continues, inflation pressure fades and deflation dominates.

3. Trough or depression phase

- Lowest point of real GDP
- Output and unemployment “bottom out”
- This phase may be short-lived or prolonged
- There is no precise decline in output at which a serious recession becomes a depression.

4. Expansionary/recovery phase

- Real output in the economy is increasing
- Unemployment rate is declining
- The upswing part of the cycle

Money

- Money is any good that is widely accepted in exchange of goods and services, as well as payment of debts.

CHARACTERISTICS

- Divisibility
- Portability
- Durability
- Difficulty in counterfeiting
- Stability



Functions of Money

1. Medium Of Exchange:

Money can be used for buying and selling goods and services. If there were no money, barter system is to be followed which causes double coincidence of wants.

2. Unit Of Account:

Money is the common standard for measuring relative worth of goods and service.

3. Store Of Value:

Money is the most liquid asset (Liquidity measures how easily assets can be spent to buy goods and services). Money's value can be retained over time. It is a convenient way to store wealth.

4. A Standard Of Deferred Payments:

Money provides a generally accepted measure of deferred payments. Loans, electricity bills, wages etc are to be paid in future, which are usually paid in money.

Quantity Theory Of Money

- Classical quantity theory of money states that the general price level (P) in an economy is directly depend on the money supply (M)

$$P = f(M)$$

- This is the essence of the quantity theory of money.
- The theory was first stated in 1586, it received its full-fledged popularity at the hands of Irving Fisher in 1911. Later, an alternative approach was given by a group of Cambridge economists.
- Assumptions
 - 1.Velocity of money (V) is constant.
 - 2.Volume of goods and services (T) remains constant.

Quantity Theory of Money— Fisher's Version

- In Fisher's theory of demand for money, it states that money is demanded for transaction purposes.
- In a given time period, total money expenditure is equal to the total value of goods traded in the economy.

$$MV = PT$$

M = total stock of money in an economy;

V = velocity of circulation of money;

P = average or general price level;

T = total volume of goods transacted;

- The average number of times that a unit of money changes its hand is called the velocity of circulation of money.
- V is determined by
 - (i) the payment habits of the people,
 - (ii) the nature of the banking system
 - (iii) general factors (e.g., density of population, rapidity of transportation).

Limitations:Fisher's Version

1. The equation of exchange is just a mathematical truism.
2. The price level (P) is wrongly assumed to be a passive factor (P is active because a rise in P may increase the volume of trade which may cause an increase in the quantity of money and V)
3. The velocity of circulation of money (V) may not be a constant factor.
4. The assumption of full employment is unrealistic.
5. The theory neglects the role of interest rate.
6. The transactions approach of the quantity theory of money is one-sided.
7. The Fisherian approach is mechanical and lacks human touch.

Quantity Theory of Money: Cambridge Version:

- An alternative version, known as cash balance version, was developed by a group of Cambridge economists.
- These economists argue that money acts both as a store of wealth and a medium of exchange.
- According to Cambridge economists, people wish to hold cash to finance transactions and for security against unforeseen needs.
- They also suggested that an individual's demand for cash or money balances is proportional to his income.
- Thus, the demand for cash balances is specified by:

$$M_d = kPY$$

Y = national output

P = average price

k = income that people want to hold.

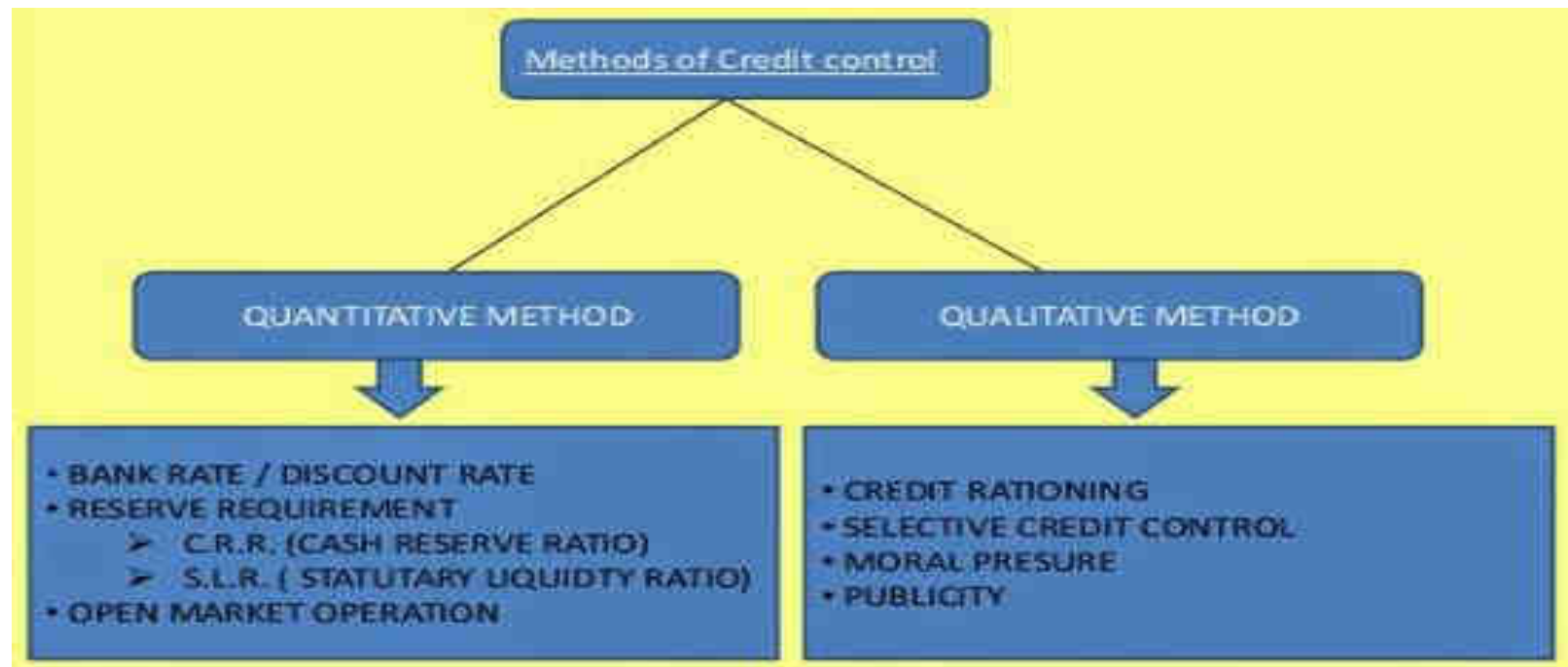
- Let us assume that the supply of money, M_s , is determined by the monetary authority, $M_s = M$
- Equilibrium requires that the supply of money must equal the demand for money, $M_s = M_d$
- Cambridge 'k' and Fisherian V are reciprocals of one another, that is, $1/k$ is the same as V in Fisher's equation.

Limitations: Cambridge Version

1. It is too simple to deal adequately with the complexities of the economic system.
2. More Importance to Total Deposits
3. Neglect of Saving Investment Effect
4. k and Y not Constant
5. Fails to Explain Dynamic Behaviour of Prices

Credit control methods

- Credit Control is an important tool used by the Reserve Bank of India to control the demand and supply of money (liquidity) in the economy.
- The Central Bank uses various methods to control credit. This method can be classified into two broad categories.



1) Bank Rate Policy /Discount Rate Policy

- It is the Rate at which the central bank is lending to the commercial banks.
- By changing this rate the Central Bank control the volume of credit.
- The bank rate is raised in times of inflation and is lowered in times of deflation.
- It is an important weapon of credit control. But, it suffers from the following limitations:
 1. Existence of an Organised and Developed Money Market
 2. Existence of Well-developed Bill Market
 3. Banks Need for Rediscounting
 4. Practice of Free Exchange Rate System
 5. Business Expectations
 6. Interest-inelasticity of Bank Deposits

Reserve requirement- CRR & SLR

- Reserve requirements are requirements regarding the amount of cash that a bank must hold in reserve against the deposits made by customers.

1) **CASH RESERVE RATIO (CRR)**

- It refers to the minimum percentage of a bank's total deposits required to be kept with the Central Bank in the form of cash reserves.
- HIGH CRR means less credit availability which will reduce the money supply.
- Low CRR means more credit availability which will increase the money supply.

2) **STATUTORY LIQUIDITY RATIO (SLR)**

- Every bank is required to maintain a fixed percentage of its assets in the form of cash or other liquid assets, called SLR.
- HIGH SLR means less credit availability which will reduce the money supply.
- LOW SLR means more credit availability which will increase the money supply.

Differences between CRR & SLR

- CRR and SLR are instruments in the hands of RBI to regulate money supply in the hands of banks that they can pump into the economy.
- CRR controls liquidity in banking system while SLR regulates credit growth in the country.
- To meet SLR, banks can use cash, gold or approved securities whereas with CRR it has to be only cash.
- CRR is maintained in cash form with central bank, whereas SLR is money deposited in govt. securities

Open market operations

- It refers to the sale and purchase of securities in the open market by the central bank through commercial banks to public.
- Central bank sells the securities to reduce the money supply.
- Central bank buys the securities to increase the money supply.
- Open market operations tend immediately to increase or decrease the quantity of money in circulation and the cash resource of Commercial Banks.
- If the Central Bank wants to reduce the volume of credit created by the banks, it sells eligible securities in the market. When the banks and the public purchase these securities, they have to make payments to the Central Banks.
- This results in the movement of cash from Commercial Banks to Central Bank. As a result of this the primary reserves of the banks fall. Hence, the capacity of the banks to expand credit will be contracted. In times of inflation the Central Bank sells eligible securities in the open market.

Repo rate / Repurchase rate

- Repo rate is the rate at which the central bank of a country (Reserve Bank of India in case of India) lends money to commercial banks.
- Repo rate is used by monetary authorities to control inflation.
- In the event of inflation, central banks increase repo rate as this acts as a disincentive for banks to borrow from the central bank.
- This ultimately reduces the money supply in the economy and thus helps in arresting inflation.
- Bank rate and repo rate are seems to be similar because in both cases RBI lends to the banks. Bank rate usually deals with loans, whereas, repo rate deals with the securities. The bank rate is charged to commercial banks against the loan issued to them by central banks, whereas, the repo rate is charged for repurchasing the securities.

Reverse repo rate

- Reverse repo rate is the rate at which the central bank of a country (Reserve Bank of India in case of India) borrows money from commercial banks within the country.
- It is a monetary policy instrument which can be used to control the money supply in the country.
- An increase in the reverse repo rate will decrease the money supply and vice-versa, other things remaining constant.
- An increase in reverse repo rate means that commercial banks will get more incentives to park their funds with the RBI, thereby decreasing the supply of money in the market.

CRR- 4.000%

SLR-20.50%

Repo rate-6.25%

Reverse repo rate-5.75%



Emerging concepts in money - Bit coin

- Bitcoin is software-based online payment system described by Satoshi Nakamoto in 2008.
- It is introduced as open-source software in 2009.
- Payments are recorded in a public ledger using its own unit of account (Bitcoin).
- It is a form of digital currency (physical form is absent), created and held electronically.
- It can be used to buy things electronically and in that sense it is no different than conventional dollars.
- Bitcoin is commonly referred to as cryptocurrency and it can be divided into smaller unit called Satoshi.
- It is based on mathematics.



ADVANTAGES

- Freedom in Payment
- Control and Security
- Information is Transparent
- Very Low Fees
- Without central authority???

DISADVANTAGES

- Lack of Awareness & Understanding
- Risk and Volatility
- Undefined legal status
- Absence of relevant theoretical background

MODULE 5

BUSINESS DECISIONS I

INVESTMENT ANALYSIS

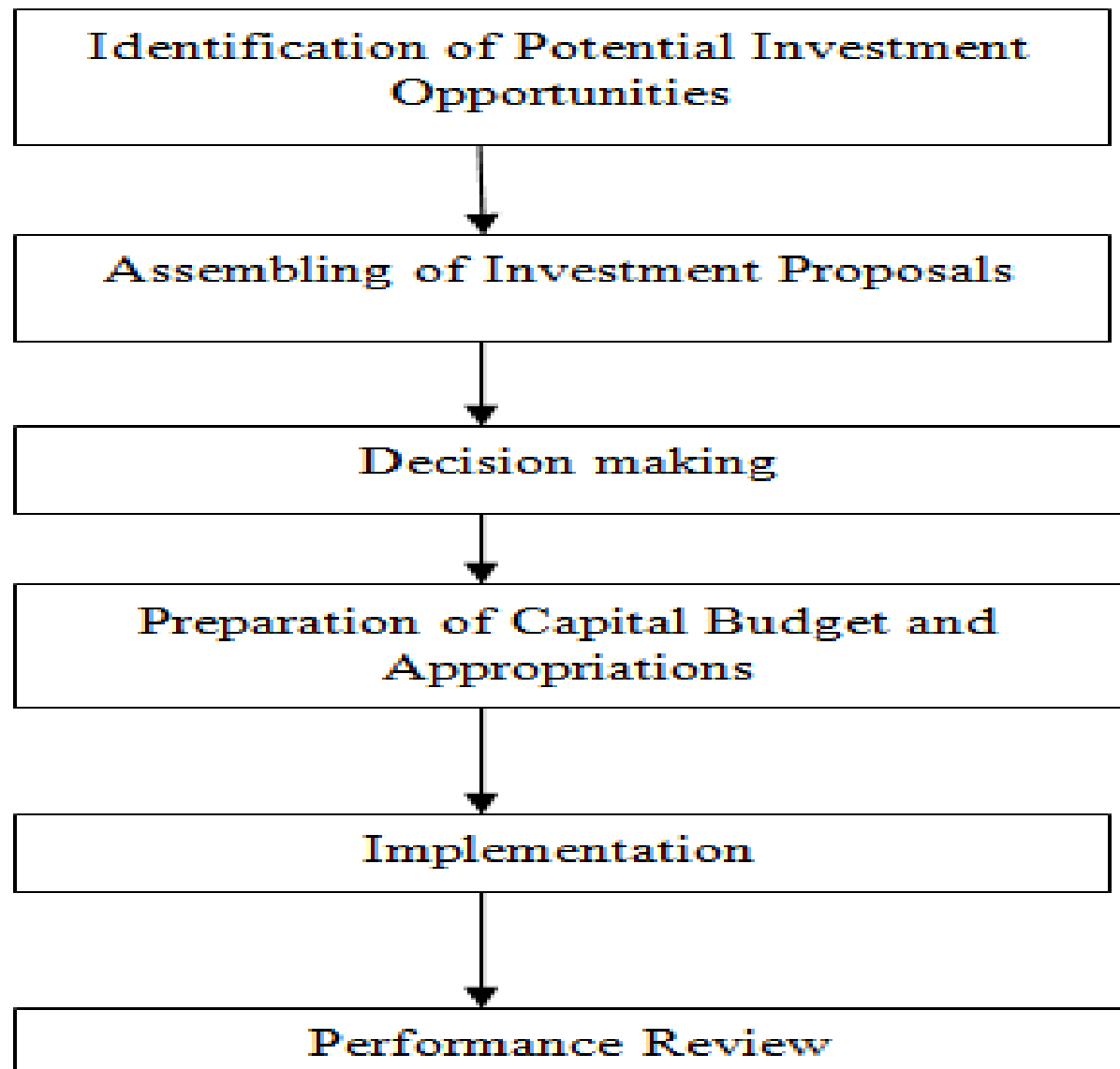
- Investment analysis, defined as the process of evaluating an investment for profitability and risk, ultimately has the purpose of measuring how the given investment is a good fit for a portfolio.
- Investment analysis methods generally evaluate 3 factors: risk, cash flows, and resale value.
- Investment analysis means the process of judging an investment for income, risk, and resale value.

CAPITAL BUDGETING

- Capital budgeting refers to the process to make decisions concerning investments in the long term assets of the firm.
- **Importance of Capital Budgeting**

Because capital budgeting decisions impact the firm for several years, they must be carefully planned. A bad decision can have a significant effect on the firm's future operations. In addition, the timing of the decisions is important. Many capital budgeting projects take years to implement. If firms do not plan accordingly, they might find that the timing of the capital budgeting decision is too late, thus costly with respect to competition.
- **Methods**
 1. Cash Payback Method
 2. Net Present Value Method
 3. Profitability Index Method
 4. Internal Rate Of Return Method
 5. Accounting Rate Of Return Method

CAPITAL BUDGETING PROCESS



PAYBACK PERIOD METHOD

- The payback period is the length of time required to recover the cost of an investment.
- It is expressed in years.
- It measures the number of years required for cash flow after tax(CFAT) to pay back the original outlay(an amount of money spent on something) invested in a project.
- Basic premise is that the more quickly the cost of an investment can be recovered, the more desirable is the investment.
- When there are number of projects competing for selection then this method helps in ranking of projects
- The net annual cash inflow is what the investment generates in cash each year.
- Also known as undiscounted cash flow method

- PB with even cash flows is
$$PB = \text{INITIAL OUTLAY} / \text{ANNUAL CASH FLOW}$$
- PB with uneven cash flows is
$$PB = E + B/C$$

Where

E = number of years immediately preceding the year of payback

B = balance to be recovered

C = cash flow during the year of recovery

- Advantages :
 - 1) Considers cash flows
 - 2) Shows when funds are available for reinvestment
 - 3) Covers uncertainty
 - 4) Simple to understand and apply
- Disadvantages:
 - 1) Ignores profitability.
 - 2) Ignores cash flows after the payback period
 - 3) Doesn't consider time value of money

NET PRESENT VALUE METHOD

- Also known as discounted cash flow method.
- most correct capital budgeting method that business owners can use in evaluating whether to invest or not invest in a new capital project.
- It takes into account the time value of money.
- Net present value is the difference between the present value of cash inflows and the present value of cash outflows from the project over its entire life span.
- It may be positive(accepted), zero or negative(rejected).
- $NPV = \sum \{ \text{Net Period Cash Flow} / (1+R)^T \} - \text{Initial Investment}$

$$NPV = \frac{CF_1}{(1+R)^1} + \frac{CF_2}{(1+R)^2} + \dots \dots \dots \frac{CF_n}{(1+R)^n} - CO$$

R is the rate of return/discount rate.

T is the number of time periods.

CF is the cash inflow in a year.

- **Steps**

1. Determine the cash inflow and cash outflow likely to occur in the entire life of the project.
2. Determine the discount rate.
3. Calculate the present value factor (PVF) using discounting principles.
4. Calculate present value of inflow ($PVF * CFAT$)
5. Calculate present value of outflow ($PVF * CO$)
6. Subtract outflow from inflow ($PVF * CFAT - PVF * CO$)

- **Advantage:**

- a) Considers cash flows and the time value of money
- b) It is consistent with the objective of maximizing owner's wealth.

- **Disadvantage:**

- a) Assumes that cash received can be reinvested at the rate of return
- b) Not give correct assessment of projects with different lifespan.

PROFITABILITY INDEX METHOD

- It is a measure of ratio of returns of a project to its cost.
- Refined version of NPV method.
- Suitable to compare two or more projects in terms of profitability.

$$\text{Profitability index (PI)} = \frac{\text{Present value of cash inflows}}{\text{Present value of cash outflows}}$$

- If $PI > 1$, the project can be accepted.
- **Advantages:**
 - a) Better tool to measure profitability
 - b) Can be used as a basis for capital rationing.
- **Disadvantages:**
 - a) It is not a sufficient measure of evaluation. It is useful in combination with NPV method.

INTERNAL RATE OF RETURN METHOD

- Also known as time adjusted rate of return method.
- Internal rate of return(IRR)/Economic rate of return (ERR) is a value which is expected to be achieved from the yield on investment.
- IRR is an indicator of marginal efficiency of capital.
- This method uses the net cash flows to determine the rate of return expected from the proposal.
- At IRR ,NPV = 0

- At NPV,
$$NPV = \frac{CF_1}{(1+R)^1} + \frac{CF_2}{(1+R)^2} + \dots \dots \dots \frac{CF_n}{(1+R)^n} - CO$$

- At IRR,
$$\frac{CF_1}{(1+R)^1} + \frac{CF_2}{(1+R)^2} + \dots \dots \dots + \frac{CF_n}{(1+R)^N} = CO$$

- Equation to find IRR in a simple way

Where

$$LR + \frac{NPVL}{NPVL - NPVH} \times HR - LR$$

NPVL = NPV at lower rate

NPVH = NPV at higher rate

LR = Lower discount rate

HR = higher discount rate

- Rule of accepting the project is IRR should be greater than the cost of capital.
- Advantages :**
 - The present value of the cash flows over the entire useful life of the investment proposal is considered.
 - All investment proposals are placed on a common basis for comparison by determining a rate of return for each proposal.
- Disadvantages:**
 - The computations are more complex.
 - Internal rate of return method assumes that the cash received from a proposal during its useful life will be invested again at the internal rate of return.

ACCOUNTING RATE OF RETURN METHOD

- Also known as the Average rate of return (ARR) .
- All other methods focus on cash flows, but ARR method uses expected net operating income to be generated by the investment proposal to evaluate an investment proposal.
- Under this method, the asset's expected accounting rate of return (ARR) is computed by dividing the expected incremental net operating income by the initial investment

$$\text{ARR} = \frac{\text{Incremental accounting income}}{\text{Initial income}}$$

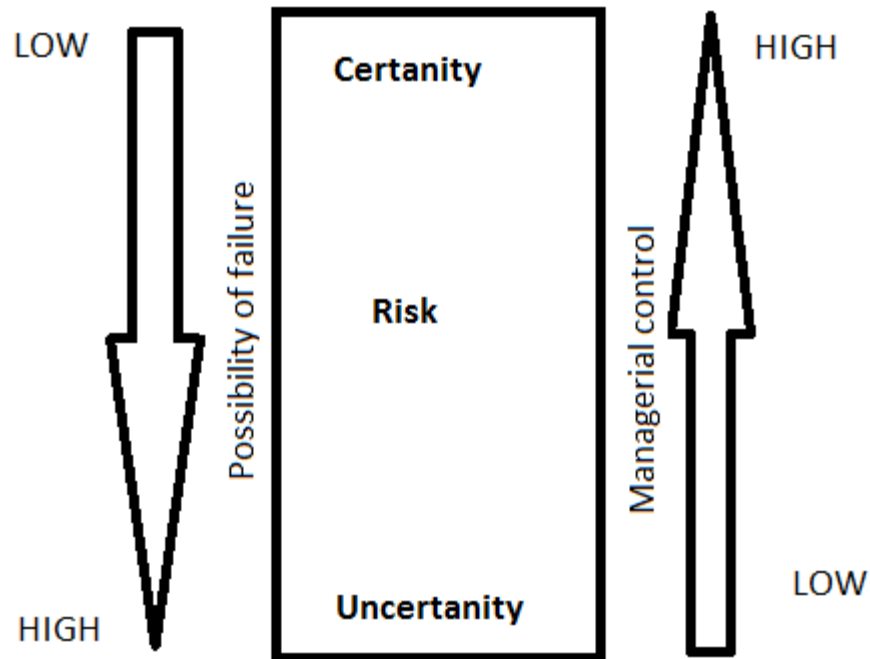
- If ARR is greater than or equal to the management's desired rate of return, the proposal is accepted. Otherwise, it is rejected.

- Advantages:
 - a) Easy to calculate
 - b) Considers accounting income (often used to evaluate managers)
- Disadvantages:
 - a) Ignores cash flows
 - b) Ignores the time value of money

PROBLEMS

Business Decisions

- Decision making is a process by which a course of action is consciously chosen from available alternatives for the purpose of achieving desired results.
- Managerial decisions are made under conditions of
 1. Certainty
 2. Risk
 3. Uncertainty



Decision-making under Certainty

- Certainty refers to the situation where there is only one possible outcome to a decision and this outcome is known precisely.
- For example, investing in Treasury bills leads to only one outcome (the amount of the yield), and this is known with certainty.
- A condition of certainty exists when the decision-maker knows with reasonable certainty what the alternatives are, what conditions are associated with each alternative, and the outcome of each alternative.
- Under conditions of certainty, accurate, measurable, and reliable information on which to base decisions is available.
- Such conditions exist in case of routine and repetitive decisions concerning the day-to-day operations of the business.

Decision-making under Risk

- When there is more than one possible outcome to a decision, risk or uncertainty is present.
- Risk refers to a situation where there is more than one possible outcome to a decision and the probability of each specific outcome is known or can be estimated.
- For example, in tossing a coin, we can get either a head or a tail.
- Under a state of risk, the decision maker has incomplete information about available alternatives but has a good idea of the probability of outcomes for each alternative.
- While making decisions under a state of risk, managers must determine the probability associated with each alternative on the basis of the available information and his experience.

Decision-making under Uncertainty

- Most significant decisions made in today's complex environment are formulated under a state of uncertainty.
- Conditions of uncertainty exist when the future environment is unpredictable and everything is in a state of flux.
- The decision-maker is not aware of all available alternatives, the risks associated with each, and the consequences of each alternative or their probabilities.
- In the face of such uncertainty, managers need to make certain assumptions about the situation in order to provide a reasonable framework for decision-making.
- They have to depend upon their judgment and experience for making decisions.

Modern Approaches to Decision-making under risk and uncertainty

- There are several modern techniques to improve the quality of decision-making under conditions of risk and uncertainty.
- The most important among these are:
 - (1) Risk analysis
 - (2) Decision trees analysis
 - (3) Preference theory

1) Risk Analysis

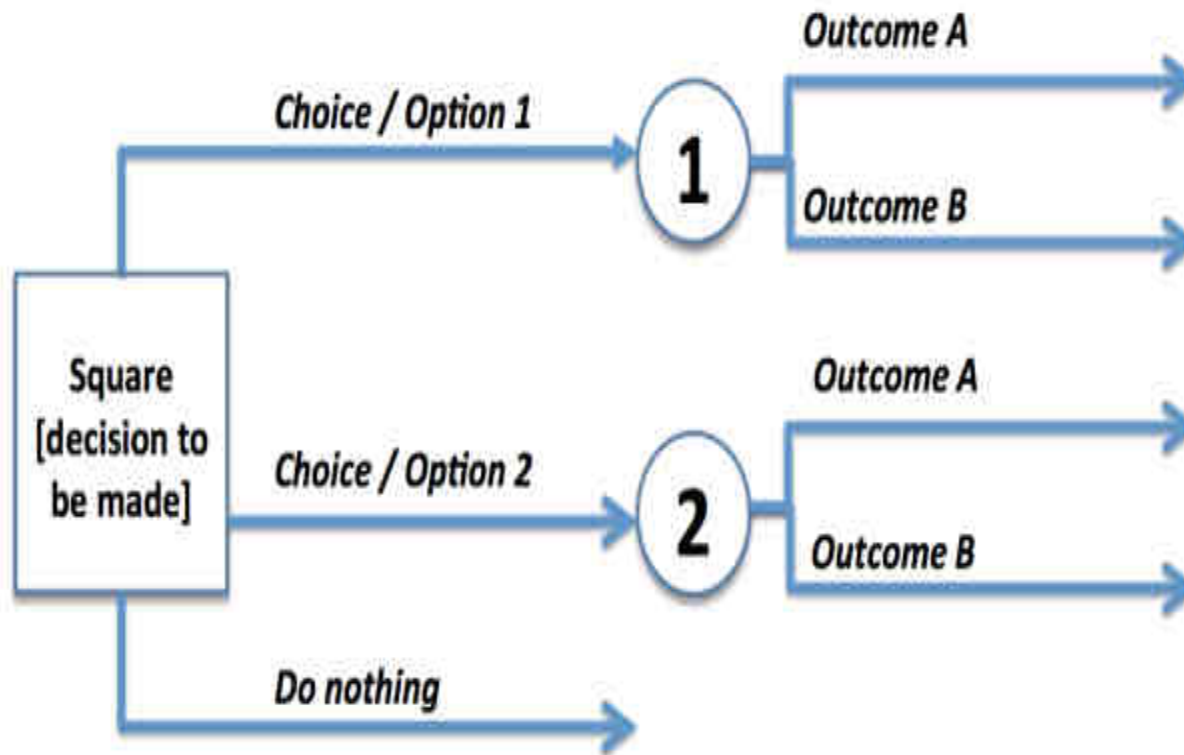
- Managers who follow this approach analyze the size and nature of the risk involved in choosing a particular course of action.
- Risk analysis involves quantitative and qualitative risk assessment, risk management and risk communication and provides managers with a better understanding of the risk and the benefits associated with a proposed course of action.
- The decision represents a trade-off between the risks and the benefits associated with a particular course of action under conditions of uncertainty.
- For instance, while launching a new product, a manager has to carefully analyze each of the following variables the cost of launching the product, its production cost, the capital investment required, the price that can be set for the product, the potential market size and what percent of the total market it will represent.

2) Decision Tree analysis

- These are considered to be one of the best ways to analyze a decision.
- A decision-tree approach involves a graphic representation of alternative courses of action and the possible outcomes and risks associated with each action.
- By means of a “**tree**” diagram depicting the decision points, chance events and probabilities involved in various courses of action.
- This technique of decision-making allows the decision-maker to trace the optimum path or course of action.
- In a **decision tree**, we describe the choices and uncertainties facing a single decision-making agent.

- In a decision tree, we represent decisions as square nodes (boxes), and for each decision, the alternative choices are represented as branches emanating from the decision node, labeled with their respective probabilities.
- we build the tree from left to right, to reflect the temporal sequence in which a decision is followed by a chance event, we evaluate the tree in the reverse direction.
- At each chance node, we can calculate the expected payoff represented by the probability distribution at the node.
- This value becomes associated with the corresponding action branch of the decision node.
- Then, at the decision node, we calculate the largest expected payoff to determine the best action.
- This process of making the calculations is usually referred to as **rolling back** the tree.

- Circles represent uncertain outcomes



Five Steps of Decision Tree Analysis

1. Define the problem
2. Structure or draw the decision tree
3. Assign probabilities to the states of nature
4. Estimate payoffs for each possible combination of alternatives and states of nature
5. Solve the problem by computing expected monetary values (EMVs) for each state of nature node

3) Preference or Utility Theory

- This approach is based on the notion that individual attitudes towards risk vary.
- Some individuals are willing to take only smaller risks (“risk averters”), while others are willing to take greater risks (“gamblers”).
- Statistical probabilities associated with the various courses of action are based on the assumption that decision-makers will follow them.
- Though personal attitudes towards risk vary, two things are certain.
- Firstly, attitudes towards risk vary with situations
- Secondly, some people have a high aversion to risk, while others have a low aversion.

Cost benefit analysis



- A cost-benefit analysis is a process by which business decisions are analyzed which is used by organizations to appraise the desirability of a given policy.
- The benefits of a given situation or business-related action are summed, and then the costs associated with taking that action are subtracted.
- CBA helps to predict whether the benefits of a policy outweigh its costs, and by how much relative to other alternatives, so that one can rank alternate policies in terms of the cost–benefit ratio.
- A CBR is the ratio of the benefits of a project or proposal, expressed in monetary terms, relative to its costs, also expressed in monetary terms.

$$\text{CBR} = \frac{\text{SUM OF PRESENT VALUES OF BENEFITS}}{\text{SUM OF PRESENT VALUES OF COSTS.}}$$

Cost-Benefit Analysis Process-Steps

- The first step in the process is to compile a comprehensive list of all the costs and benefits associated with the project or decision. Costs should include direct and indirect costs, intangible costs, opportunity costs and the cost of potential risks. Benefits should include all direct and indirect revenues and intangible benefits.
- A common unit of monetary measurement should then be applied to all items on the list. Care should be taken to not underestimate costs or overestimate benefits.
- The final step is to quantitatively compare the results of the aggregate costs and benefits to determine if the benefits outweigh the costs using CBR.
- Accept all projects with a BCR greater than 1.

Limitation of Cost-Benefit Analysis

- For very large projects with a long-term time horizon, cost-benefit analysis typically fails to effectively take into account important financial concerns such as inflation, interest rates, varying cash flows and the present value of money.

MODULE 6

BUSINESS DECISIONS II

BALANCE SHEET

- It is a financial statement, which is prepared to measure the financial position of a business on a certain fixed date.
- The financial position of a concern is indicated by its assets and liabilities on a particular date.
- It is called a balance sheet because it is a sheet of balances prepared from real and personal accounts.
- It has two sides
 - a) Liabilities of business are shown on the left side.
 - b) Assets of business are shown on the right side.
- Balance sheet gives information related to
 1. Nature and value of assets
 2. Nature and extend of liabilities
 3. Whether the firm is solvent
 4. Whether the firm is overtrading

- Balance sheet is described as a detailed expression of the fundamental accounting equation,

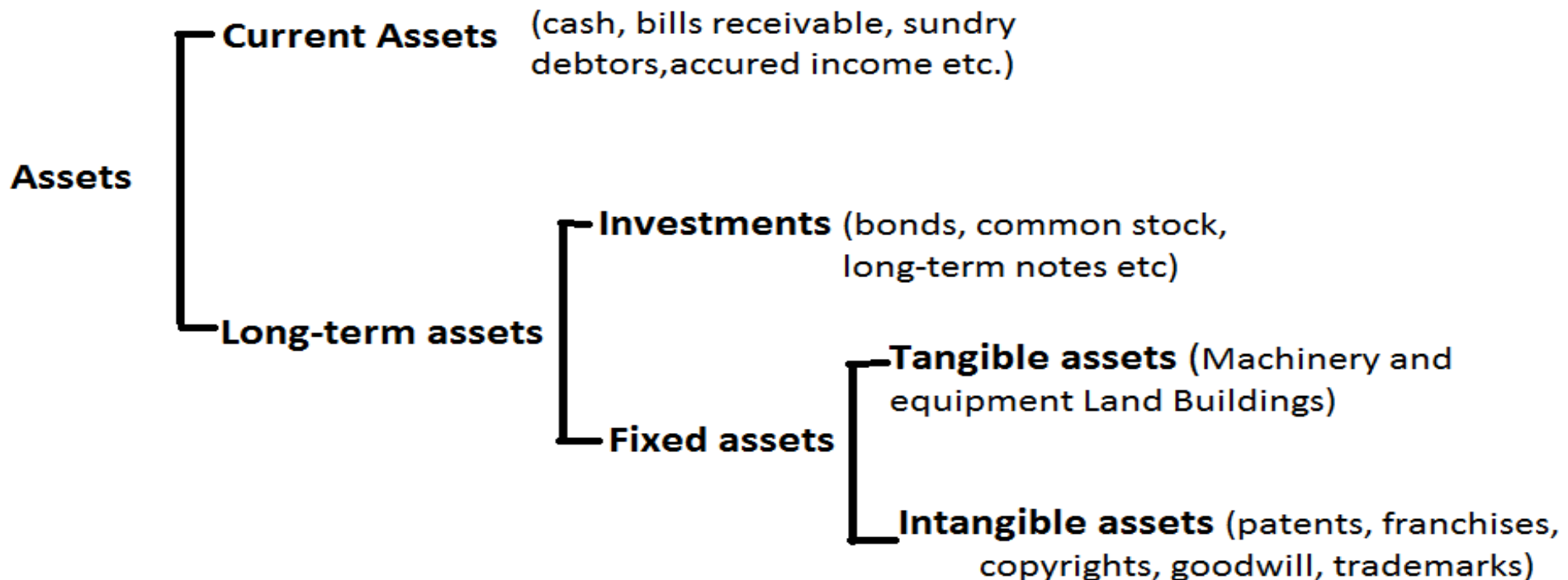
$$\textbf{Assets = Liabilities + Owner's Equity (capital)}$$

- Assets are the resources of monetary value those are owned by the firm. The assets of a typical construction firm are cash, plant and equipment, land, buildings, construction materials, receivables etc.
- Liabilities represent the obligations (i.e. debts) that the firm owes to other parties. Liabilities include bank loans, debts to subcontractors, advances from project owners (i.e. clients), taxes payable both current and deferred etc.
- Owners' equity or net worth of the firm represents the excess of assets of a firm over its liabilities and is recorded on the balance sheet.

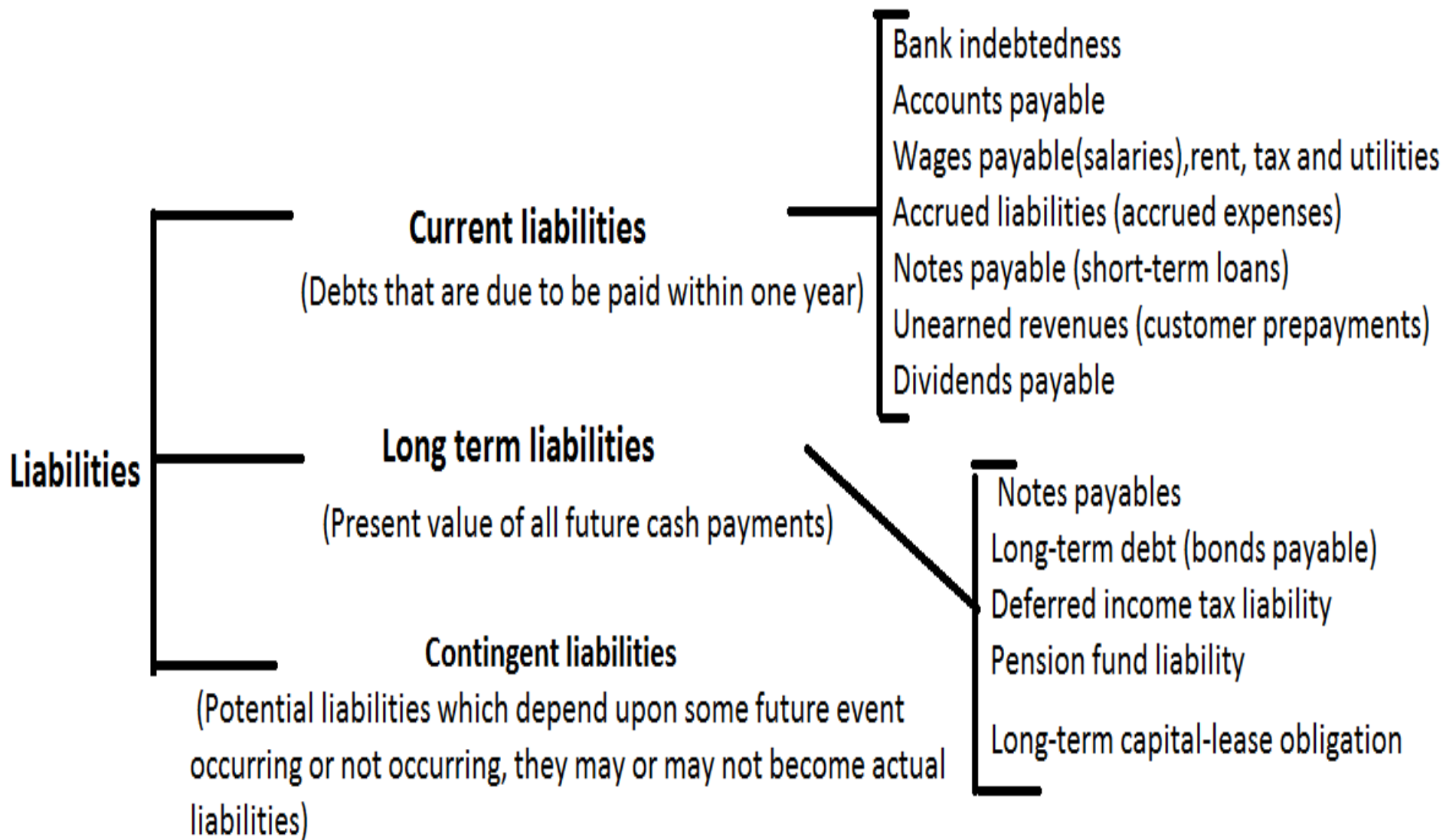
Assets

Assets include

- Current Assets - These are assets that may be converted into cash, sold or consumed within a year or less.
- Long-term assets - These are assets that may not be converted into cash, sold or consumed within a year or less



Liabilities



Owner's Equity

- Owner's Equity" is the word used on the balance sheet when the company is a sole proprietorship. If the company is a corporation, the words Stockholders' Equity are used instead of Owner's Equity.
- Owner's equity is generally represented on the balance sheet with two or three accounts.
- The stockholders' equity section of a corporation's balance sheet is:
 1. Paid-in Capital
 2. Retained Earnings
 3. Accumulated Other Comprehensive Income
 4. Treasury Stock

Advantages & Disadvantages

- Gives information about the financial position of the business.
- Reflects the outcome of investing and financing decisions
- Provides information about the liquidity position of business
- Portrays the claim of owner and others in the business.
- Less informative for comparison.
- Does not tell the accurate value of a company.
- The information can be misleading.

FORECASTING TECHNIQUE

- Forecasting is the process of making predictions of the future based on past and present data and most commonly by analysis of trends.
- Educated Guessing.
- Underlying basis of all business decisions.
- Virtually every business attempt is based on forecasting. Best educated guesses about future are more valuable for purpose of Planning .
- Demand is not the only variable of interest to forecasters. Manufacturers also forecast worker absenteeism, machine availability, material costs, transportation and production lead times, etc.

Types of Forecasts by Time Horizon

- Short-range forecast
 - Usually < 3 months
 - Job scheduling, worker assignments
- Medium-range forecast
 - 3 months to 2 years
 - Sales/production planning
- Long-range forecast
 - > 2 years
 - New product planning

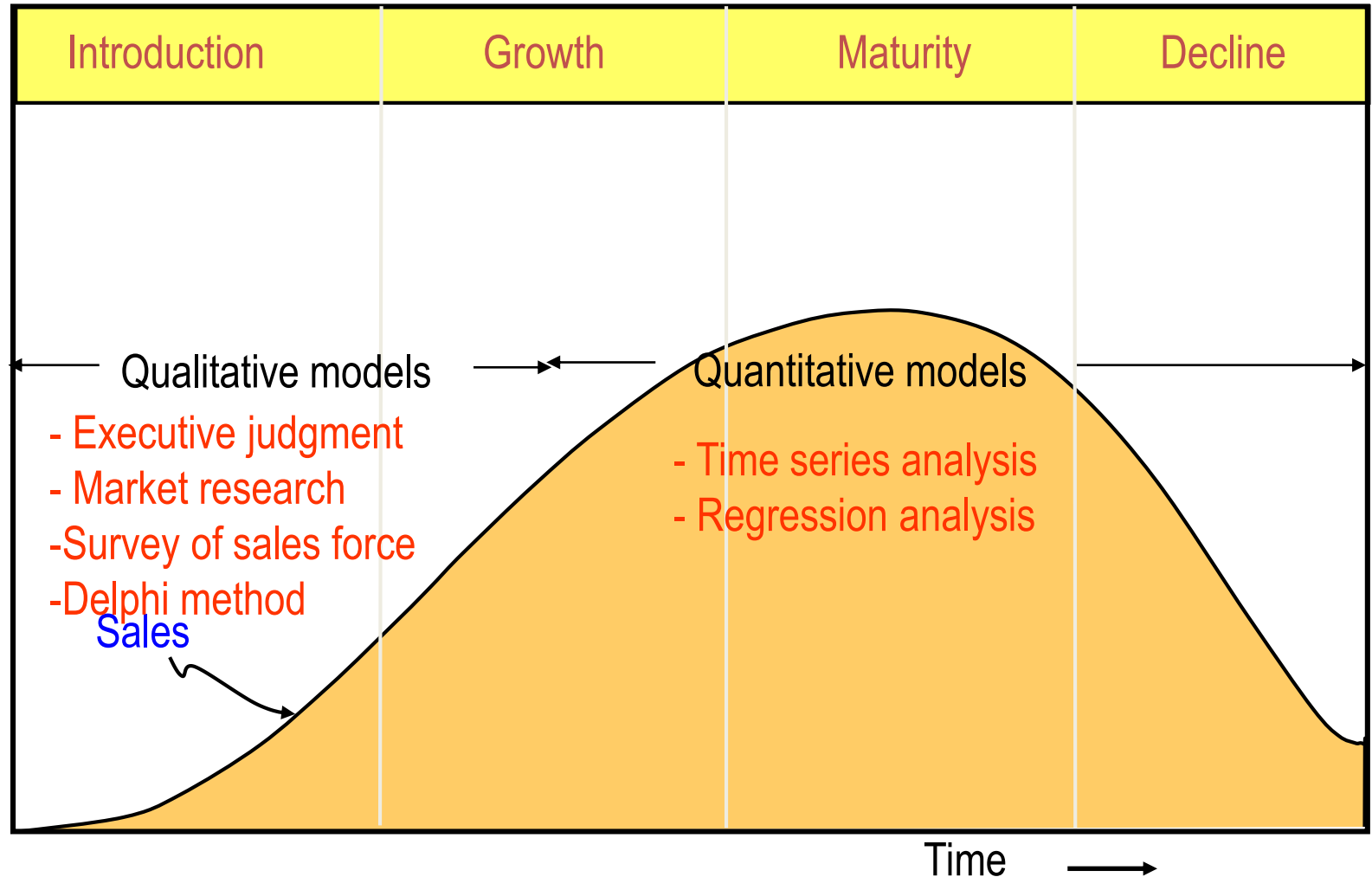
Detailed
use of
system

Design
of system

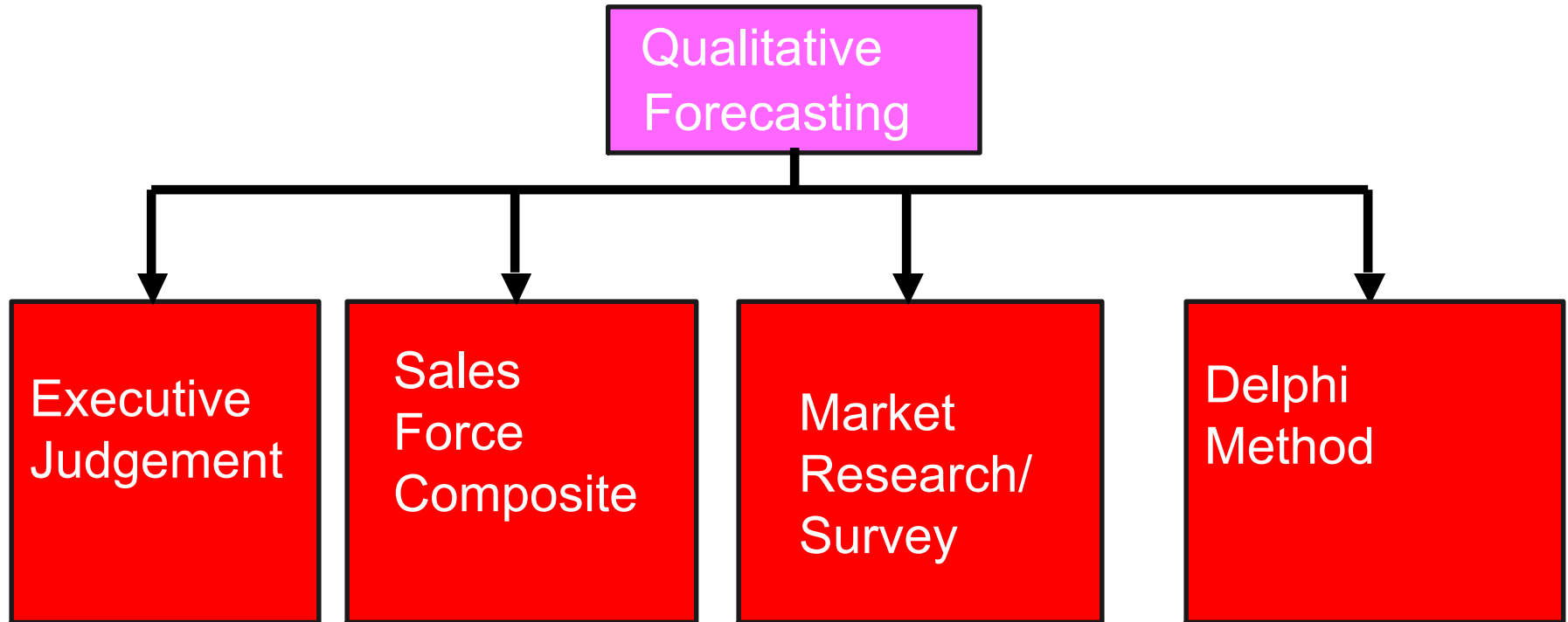
Quantitative
methods

Qualitative
Methods

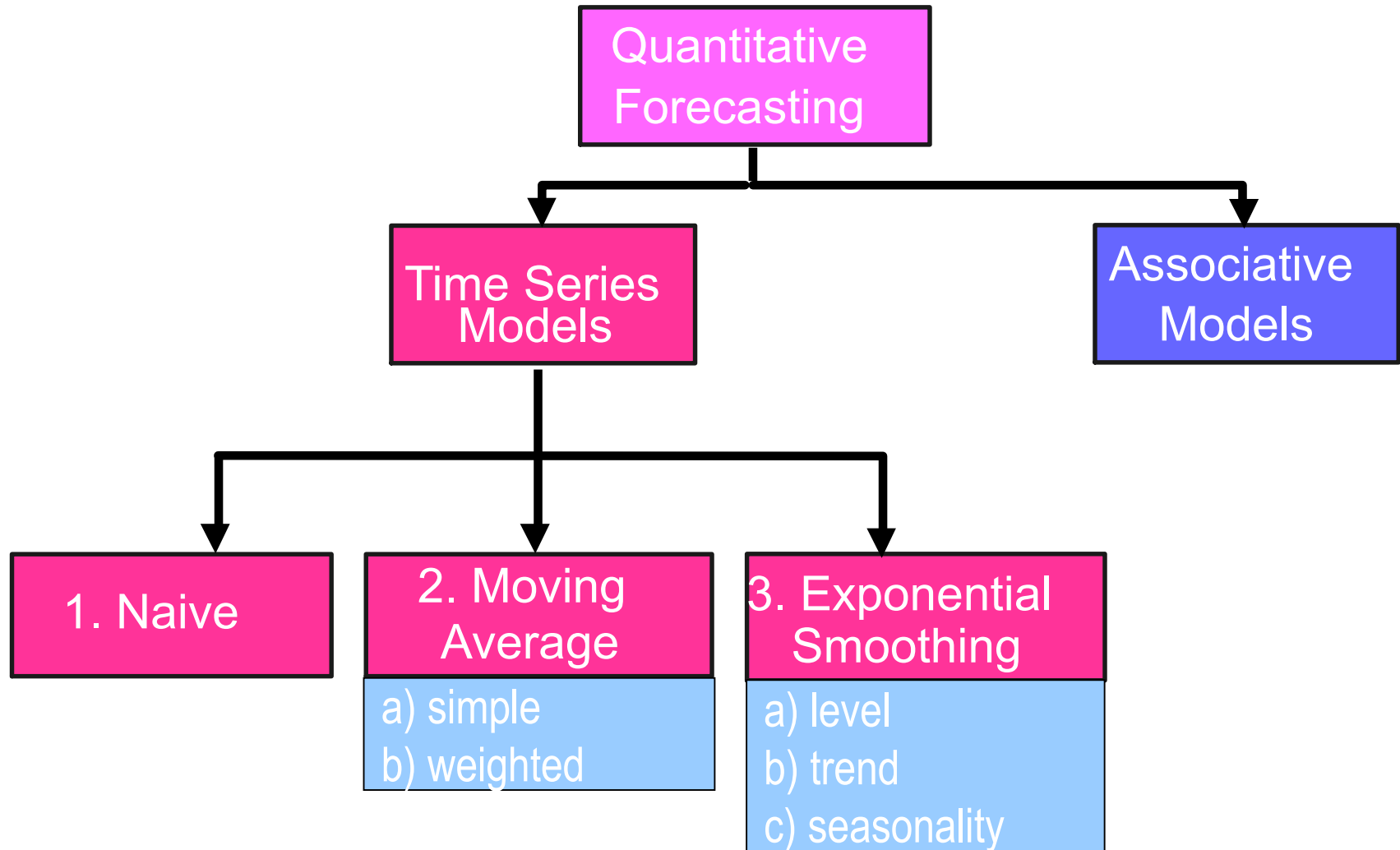
Forecasting During the Life Cycle



Qualitative Forecasting Methods



Quantitative Forecasting Methods



QUALITATIVE METHODS

1. **Executive Judgment**: Opinion of a group of high level experts or managers is pooled
2. **Sales Force Composite**: Each regional salesperson provides his/her sales estimates. Those forecasts are then reviewed to make sure they are realistic. All regional forecasts are then pooled at the district and national levels to obtain an overall forecast.
3. **Market Research/Survey**: Solicits input from customers pertaining to their future purchasing plans. It involves the use of questionnaires, consumer panels and tests of new products and services.

4. Delphi Method:

- The opinion of number of experts is gathered individually. The group involves individuals from inside as well as outside the organization.
- An analyst combines all these opinions using same weighting system and passes this combined forecast to the forecasters.
- The forecasters make a new round of forecasts with this information.
- This process is continued till an overall consensus is arrived from all members of the panel.
- This method is used to forecast the demand for a new products.
- It is an expensive method.

QUANTITATIVE METHODS

1) Time-Series Models

- Time series models look at past patterns of data and attempt to predict the future based upon the underlying patterns contained within those data.

2) Associative Models

- Often called causal models .
- Assume that the variable being forecasted is associated to other variables in the environment.
- They try to project based upon those associations.

1) Naive Approach

- Demand in next period is the same as demand in most recent period (May sales = 48 → June forecast = 48).
- Usually not good.

2) a) Simple Moving Average

- Assumes an average is a good estimator of future behavior

$$F_{t+1} = \frac{A_t + A_{t-1} + A_{t-2} + \dots + A_{t-n+1}}{n}$$

F_{t+1} = Forecast for the upcoming period, $t+1$

n = Number of periods to be averaged

A_t = Actual occurrence in period t

2) b) Weighted Moving Average

- Simple moving average models weight all previous periods equally.
- Gives more emphasis to recent data
- Weights decrease for older data.

$$F_{t+1} = w_1 A_t + w_2 A_{t-1} + w_3 A_{t-2} + \dots + w_n A_{t-n+1}$$

3) Exponential Smoothing

- Assumes the most recent observations have the highest predictive value.
- Gives more weight to recent time periods.
- Need initial forecast F_t to start.

$$F_{t+1} = F_t + \alpha(A_t - F_t),$$

F_{t+1} = Forecast value for time $t+1$, A_t = Actual value at time t ,
 α = Smoothing constant = $2/(t+1)$

Regression analysis/ Associative Models

- Regression analysis takes advantage of the relationship between two variables.
- Demand is then forecasted based on the knowledge of this relationship and for the given value of the related variable.
- The simplest form of the relationship is, of course, linear, hence it is referred to as a regression line.
- Ex: Sale of Tires (Y), Sale of Autos (X) are obviously related
If we analyze the past data of these two variables and establish a relationship between them, we may use that relationship to forecast the sales of tires given the sales of automobiles.
- Regression techniques
 1. Least square method
 2. Logarithmic straight line method/exponential method
 3. Parabolic method.

1) Least square linear regression

- It is a statistical technique that may be used to estimate the total cost at the given level of activity (units, labor/machine hours etc.) based on past cost data.
- It mathematically fits a straight cost line over a scatter-chart of a number of activity and total-cost pairs in such a way that the sum of squares of the vertical distances between the scattered points and the cost line is minimized.
- Assuming that the cost varies along y-axis and activity levels along x-axis, the required cost line may be represented in the form of following equation: $y = a + bx$

EQUATION

- By using mathematical techniques ,the following formulas to calculate a and b may be derived:

$$a = \frac{(\sum y \times \sum x^2) - (\sum x \times \sum xy)}{(N \sum x^2) - (\sum x)^2} \quad b = \frac{N \times \sum xy - (\sum x \times \sum y)}{(N \sum x^2) - (\sum x)^2}$$

- Where

N is number of pairs of units/observations

$\sum y$ is the sum of total costs of all data pairs/demand in rupees.

$\sum x$ is the sum of units of time of all data pairs as day, week, etc

2) Logarithmic straight line method

- Usually a smooth curve is better for data.
- Assuming that $y = ab^x$

$$\log_{10} a = \frac{\sum \log_{10} y}{N} \qquad \log_{10} b = \frac{\sum x \log_{10} y}{\sum x^2}$$

$$\log_{10} y = \log_{10} a + x \log_{10} b$$

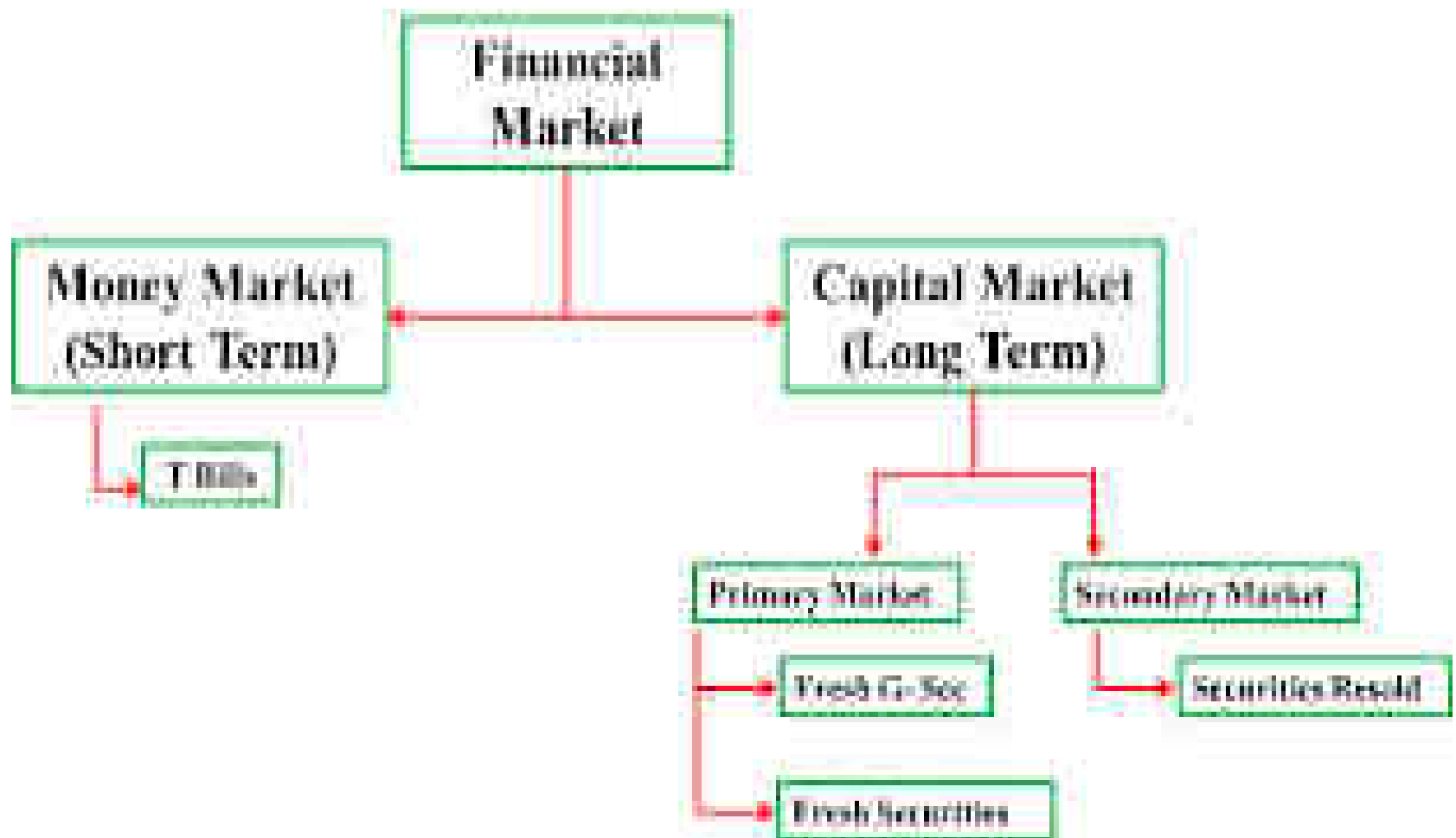
Business finance

- Business finance refers to money and credit employed in business.
- It involves procurement and utilization of funds so that business firms may be able to carry out their operations effectively and efficiently.
- **Functions**
 1. To procure funds at most favorable conditions.
 2. To manage the funds with efficient manner.
 3. To links finance to cash management.

Sources of capital

1. Short term capital
 2. Medium term capital
 3. Long term capital
- Figures

Financial market



TAXATION



- A tax is a compulsory charge or payment imposed by government on individuals or corporations.
- The most important source of revenue of the government is taxes.
- The act of levying taxes is called taxation.
- There are two types of taxes . Direct taxes and indirect taxes.
- If tax is levied directly on the income or wealth of a person, then it is a direct tax.
e.g. income-tax, wealth tax.
- If tax is levied on the price of a good or service, then it is called an indirect tax.
e.g. excise duty, custom duty, service tax and sales tax or value added tax.

Objectives of Taxes

- Raising Revenue
- Regulation of Consumption and Production
- Encouraging Domestic Industries
- Stimulating Investment
- Reducing Income Inequalities
- Promoting Economic Growth
- Development of Backward Regions
- Ensuring Price Stability

CANONS OF TAXATION

- A good tax system is based on some principles. Adam Smith has formulated four important principles of taxation. A few more have been suggested by various other economists. These principles which a good tax system should follow are called canons of taxation.
- Adam Smith's four canons of taxation
 1. Canon of Equality
 2. Canon of Certainty
 3. Canon of Convenience
 4. Canon of Economy

1) Canon of Equality

- This states that persons should be taxed according to their ability to pay taxes.
- That is why this principle is also known as the canon of ability.
- Equality does not mean equal amount of tax, but equality in tax burden.
- Canon of equality implies a progressive tax system.

2) Canon of Certainty

- According to this canon, the tax which each individual is required to pay should be certain and not arbitrary.
- The time of payment, the manner of payment and the amount to be paid should be clear to every tax payer.
- The application of this principle is beneficial both to the government as well as to the tax payer.

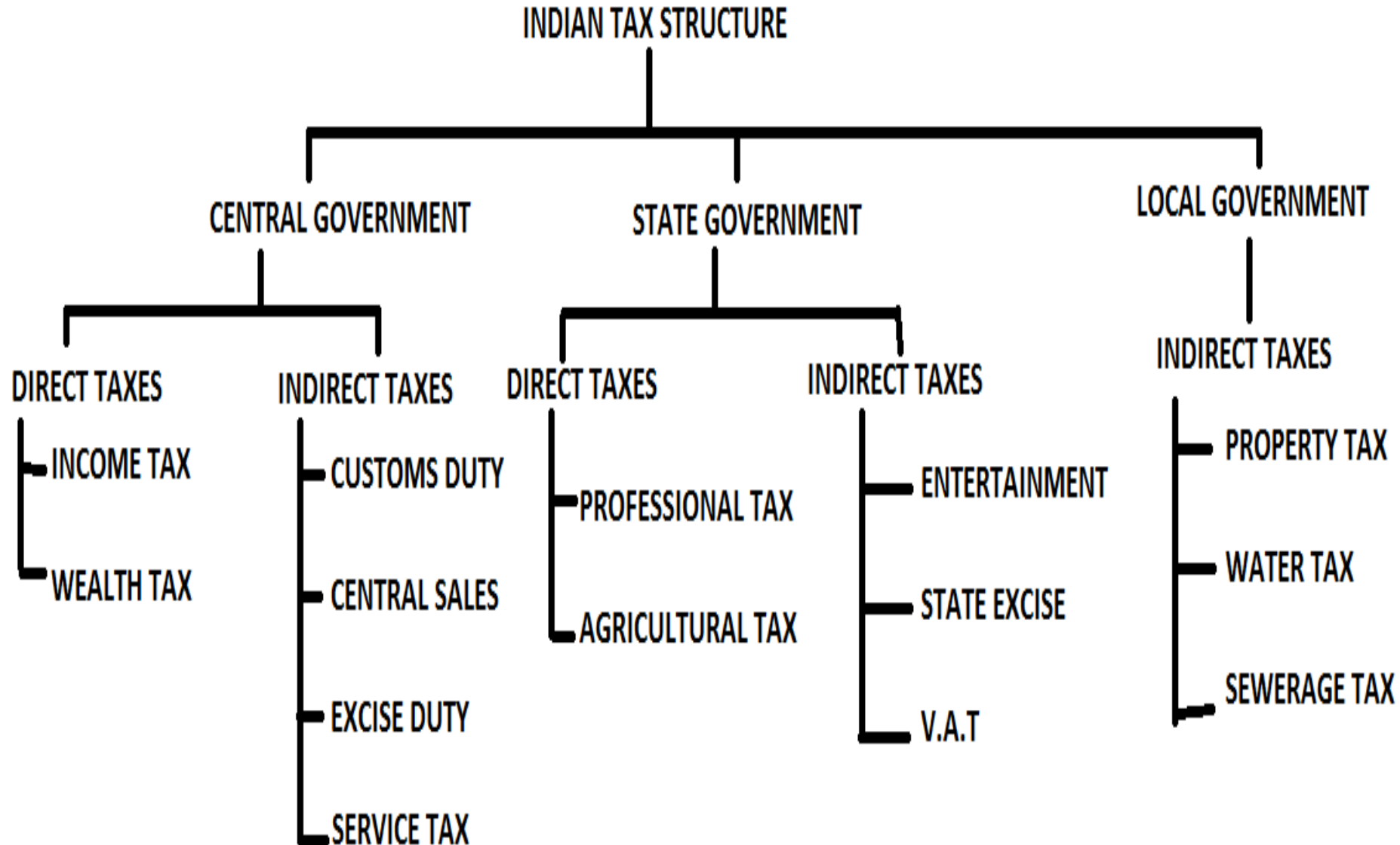
3) **Canon of Convenience**

- According to this canon, the mode and timings of tax payment should be convenient to the tax payer.
- It means that the taxes should be imposed in such a manner and at the time which is most convenient for the tax payer.
- For example, government of India collects the income tax at the time when they receive their salaries. So this principle is also known as 'the pay as you earn method'.

4) **Canon of Economy**

- Every tax has a cost of collection.
- The canon of economy implies that the cost of tax collection should be minimum.

Classification of Taxes



Classification of Taxes

- On the basis of degree of progression of tax, it may be classified into

1) Proportional tax

- A tax is called proportional when the rate of taxation remains constant as the income of the tax payer increases.
- In this system all incomes are taxed at a single uniform rate, irrespective of whether tax payer's income is high or low.

2) Progressive tax

- When the rate of taxation increases as the tax payer's income increases, it is called a progressive tax.
- In this system, the rate of tax goes on increasing with every increase in income.

Regressive taxation

- A regressive tax is one in which the rate of taxation decreases as the tax payer's income increases.
- Lower income is taxed at a higher rate, whereas higher income is taxed at a lower rate.

Degressive taxation

- A tax is called degressive when the rate of progression in taxation does not increase in the same proportion as the increase in income.
- In this case, the rate of tax increases upto a certain limit, after that a uniform rate is charged. Thus degressive tax is a combination of progressive and proportional taxation.
- This type of taxation is often used in case of income tax. This is the case of income tax in India as well.

DIRECT TAX

- A direct tax is one paid directly to the government by the persons on whom it is imposed.
- It is charged directly on an individual, firm, company etc.
- This is oppressive in its nature, and unequal in its operation and simple in its collection.
- This is Tax on earning.
- Eg :Tax on Corporate Income, Capital Gains Tax, Personal Income Tax, Tax Incentives

1) Income Tax

- The tax imposed on an individual or a group of individuals on their annual incomes is known as income tax.
- Every individual whose annual income exceeds a certain specified limit is required to pay a part of his income in the form of income tax.
- Its rates are announced in the beginning of each financial year by the central government.

2) Wealth Tax

- The tax imposed on the wealth (property as well as money) of an individual is called wealth tax.
- The exemption limit for wealth tax is Rs 5, 00,000.

3) Gift Tax

- If an individual transfers any of his movable or immovable property voluntarily to any other individual it is called a gift.
- If the value of a gift exceeds a specified limit then the person giving the gift has to pay gift tax to the government whereas the person receiving the gift need not pay any tax.

Merits & Demerits

- The larger burden of the direct taxes falls on the rich people who have capacity to bear these taxes.
- Direct taxes are important instrument of reducing inequalities of income and wealth.
- In the direct taxation, people are aware of their tax liability and therefore they would try to avoid the taxes.
- Direct taxes are generally payable in lump sum or even in advance and become quite inconvenient.

INDIRECT TAX

- Indirect tax can be defined from different views.
- An indirect tax is the charge that is collected by intermediary (like retail store) from the individual who holds the actual economic burden of the tax (like customer). The intermediary files a tax return and eventually passes to the government.
- The indirect tax can be defined as the charge that is paid by one individual at the beginning, but the burden of which will be passed over to some other individual, who eventually holds the burden.
- It is charged indirectly on everybody, whether rich or poor.
- It is the Tax on purchases.
- Eg: Excise Duty, Customs Duty, Service Tax, Securities Transaction Tax.

1) Excise Duty

- The tax imposed by the government on the manufacturer or producer on the production of some items is called excise duty.
- The liability to pay excise duty is always on the manufacturer or producer of goods.
- The duty is normally added to the cost of goods, and is collected by the manufacturer from the buyer of goods.

2) Customs Duty

- This term is usually applied to those taxes which are payable upon goods or merchandise imported or exported.
- It is also defined as tax imposed by the government on the import of items (goods).

3) Sales Tax

- Tax paid by the consumer on the purchase of some items is called the sales tax.
- Rates of sales tax depend upon the nature of the goods purchased by the consumer.

4) Value Added Tax

- VAT is a multi-point tax levied and collected on the value added to goods at different stages of sale.
- It is a method of taxing by stages.
- It is another form of sales tax where tax is collected in stages rather than collection of the tax at the first or last point.

Difference between VAT and Sales Tax

SALES TAX

- Complex system.
- Different slabs of tax.
- Collected at one point i.E. First or last.
- No tax levied on value addition on subsequent sales
- Problems of multiple taxation
- Discouragement to disclosure

VAT

- Simplified tax system
- Only four slabs of tax
- Charged at each stage
- Tax on each value addition
- A set off is given for previous purchases
- Encouragement to disclosure

Merits & Demerits

- Indirect taxes are usually hidden in the prices of goods and services ,therefore their presence is not felt so much.
- If the indirect taxes are properly administered, the chances of tax evasion are less.
- Indirect taxes are a powerful tool in the production and investment activities of the economy.
- These taxes negate the principle of ability- to-pay
- Indirect taxes are added to the sale prices of the taxed goods without touching the purchasing power in

COMPARISON

Difference between direct and indirect taxes

Point of difference	DIRECT TAX	INDIRECT TAX
Incidence & Impact	A tax is said to be direct 'when Impact and Incidence of a tax are on one and same person.	If impact of tax is on one person and incidence on the another, the tax is called 'indirect'
Burden	Direct tax is imposed on the individual organisation and burden of tax cannot be shifted to others.	Indirect tax is imposed on commodities and allows the tax burden to shift.
Viability of payment	Direct taxes are lesser burden than indirect taxes to people as direct taxes are based on income earning ability of people.	Indirect taxes are borne by the consumers of commodities and services irrespective of financial ability as the MRP includes all taxes.
Administrative viability	The administrative cost of collecting direct taxes is more and improper administration may result in tax evasion.	Cost of collecting indirect taxes is very less as indirect taxes are wrapped up in prices of goods and services and cannot be evaded

Goods and Service Tax (GST)

- Goods and Services Tax (GST) is an indirect taxation in India merging most of the existing taxes into single system of taxation
- GST is a comprehensive indirect tax on manufacture, sale and consumption of goods and services throughout India (Except state of Jammu and Kashmir) , to replace taxes levied by the central and state governments.
- It means that if you are GST registered, you are required to collect GST tax from your customers for the goods and services rendered by you and then pay the tax collected (or not yet collected) to tax authorities
- The GST is governed by GST Council and its Chairman is Union Finance Minister of India Arun Jaitley.

- The basic fundamental of GST is its self-policing features which allow the businesses to claim their input tax credit by way of automatic deduction in their accounting system. This eases the administrative procedures on the part of businesses and the government.
- GST was being opposed by different state governments but finally it was made applicable. Now state governments will get a part of GST tax from the central government.

MERITS	DEMERITS
<ul style="list-style-type: none"> • Comprehensive base for single rate of tax • Removal of cascading effect of taxation • Single statute instead of multiple, reducing compliance cost • Common market; Free movement; no check-posts, internal tax frontiers or other barrier to trade • Single tax authority; compliance with only one tax • Customer will know the tax burden falling on them 	<ul style="list-style-type: none"> • Requirements for drastic amendments in Constitution of India • Change required in entire infrastructure developed for taxation at both levels • States may not agree to give up powers of taxation; worries about loss of revenue • May upset the present concept of fiscal federalism

INTERNATIONAL FINANCING

- For a developing country like India the total capital requirements cannot be met with internal sources alone, so foreign investments become an important part in supplying capital.
- The most common foreign investments are
 1. Foreign Direct Investment (FDI)
 2. Foreign Institutional Investment (FII)
 3. Foreign Portfolio Investment (FPI)

Foreign Direct Investment(FDI)

- Foreign direct investment (FDI) is an investment made by a company or individual of one country in another country, in the form of either establishing business operations or acquiring business assets in the other country.
- In Foreign direct investments ,an investor merely purchases equities of foreign-based companies.
- The key feature is that it is an investment made that establishes either effective control of, or at least substantial influence over, the decision making of a foreign business.It refers to the direct investment into the production and management.
- This means that FDI brings foreign capital, technology & management.

- Foreign direct investment is done for many reasons including to take advantage of cheaper wages in the country, special investment privileges such as tax exemptions offered by the country as an incentive to gain tariff-free access to the markets of the country.
- One example is Unilever which has its own subsidiary and long term investment here via its subsidiary Hindustan Unilever.
- Another example is when general motors set up a plant in china.
- An FDI may provide some great advantages for the MNE but not for the foreign country where the investment is made. On the other hand, sometimes the deal can work out better for the foreign country depending upon how the investment pans out.
- Ideally, there should be numerous advantages for both the MNE and the foreign country, which is often a developing country.

Foreign portfolio investment(FPI)

- A portfolio investment is a grouping of assets such as stocks, bonds, and cash equivalents. Portfolio investments are held directly by an investor or managed by financial professionals.
- Foreign portfolio investment(FPI) consists of securities and other financial assets passively held by foreign investors.
- It does not provide the investor with direct ownership of financial assets .
- This is an investment that investors make in our country, and that gives them only ownership right and not management right.
- Example: when someone from US buys a share of infosys. thats PORTFOLIO investment, as that individual does not get any say in management of infosys. But do own a share in the company.

Foreign Institutional Investment(FII)

- FPI/FII both are used interchangeably.
- The foreign institutions invest in a capital / money market which is not their home country. Such kinds of investments are seen in the Mutual Funds, Investment Companies, Pension Funds and Insurance Houses.
- This means that FII/ FPI brings only capital. FII is also called Foreign Indirect Investment.
- FPI is an investment in equity by one country in other country and FII is an investment in securities, real property and other assets by one country in other country.
- The objective of the indirect investment is to financial gain only and does not create a lasting interest in or effective management control over an enterprise.

FDI & FPI

- 1.It is long-term investment
- 2.Investment in physical assets
- 3.Aim is to increase enterprise capacity or productivity or change management control
4. Leads to technology transfer, access to markets and management inputs

- 1.It is generally short-term investment
- 2.Investment in financial assets
3. Aim is to increase capital availability
4. FII results in only capital inflows

FDI & FPI

5.FDI flows into the primary market

6.Entry and exit is relatively difficult

7.FDI is eligible for profits of the company

8.Direct impact on employment of labour and wages

5.FII flows into the secondary market

6.Entry and exist is relatively easy

7.FII is eligible for capital gain

8.No direct impact on employment of labour and wages