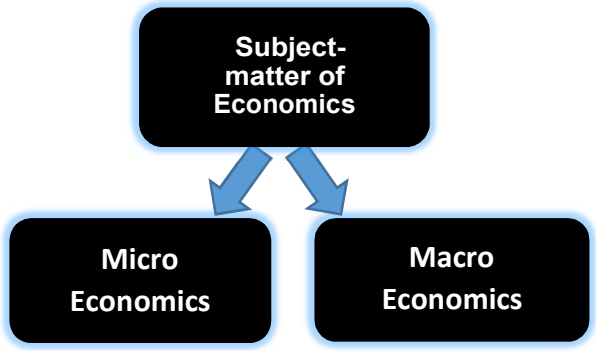
Chapter 1: Nature & Scope of Business Economics

- Classical economists defined Economics in terms of "The Science of Wealth".
- "Economics is an inquiry into the nature and causes of wealth of the nations." - **"Adam Smith [Known as father of Modern Economics]" -**
- **Book - "An Enquiry into the Nature and Causes of Wealth of Nations" - Published in the year 1776**
- ***Adam Smith insisted that Economics deals with acquisition, accumulation and expenditure of wealth. Since his definition gives prominence to the wealth aspect, it is called 'wealth definition'.***
- "Science which deals with wealth**"- J.B. Say**
- **Economics *is a study of mankind*** *in the ordinary business of life. It examines that part of individual and social action, which is most closely connected the attainment and with the use of the material requisites of well being. Thus, it is on the one side a study of wealth and on the other and important side a* ***part of the study of the man."*** **– Alfred Marshall**
- "*The range of our inquiry becomes restricted to that part of social welfare that can be brought directly or indirectly into relation with the measuring rod of money*.**"- A.C. Pigou.**

Economics
Economics is the study of processes by which the relatively scarce resources are allocated to satisfy the competing unlimited wants of human beings in a society.



- ***Micro Economics*:**

The term Micro Economics is derived from the ***Greek word mikros, meaning "small".***

Under micro economics we study:

- Product Pricing /Price Theory
- Consumer behavior
- Factor pricing **–** Includes Wage, Rent, Interest & Profits
- Study of a firm
- Location of an industry

- ***Macro Economics*:**

The Term Macro economics is derived from the ***greek word macros****, meaning "large".* It is the study of overall economic phenomena as a whole rather than its individual parts.

1. National Income and output
2. Employment
3. External Value of Money
4. General Price Level
5. Economic Growth and Development
6. Savings and investments
7. Theory of International Trade

Note: - It should be noted that micro and macro economics are interdependent

Business Economics
enables application of economic logic and analytical tools to bridge the gap between theory and practice.

Nature of Business Economics
Business Economics is basically concerned with micro economics. However, macro economic analysis has got an important role to play in business economics. Macroeconomics analyzes the environment in which the business has to function.

Nature of Business Economics

- **A Science**
- **Based on Micro Economics**
- **Incorporates elements of Macro Economics**
- **Use of Theory of Markets & Private Enterprises**
- **Pragmatic in Approach**
- **Interdisciplinary in Nature**
- **Normative in Nature**

Central Economic Problems

Human wants are unlimited and productive resources are scarce. An economy without scarcity is not found in the real world. ***All wants cannot be satisfied with the scarce productive resources for the satisfaction of wants, so problem of use of scarce resources arise. This is generally called 'the central economic problem'.***

1. **What to produce**

   How to produce : This problem is related to the choice of technique for producing a commodity. An economy has to choose between

   a. ***Labour intensive technique***
   b. ***Capital –intensive technique***

2. **For whom to produce**
3. **What provision should be made for Economic Growth**

Note: It is to be noted here that 'when are goods produced' is not central problem of an economy.

Economic Systems

An economic System refers to the sum total of the arrangements for the production and distribution of goods and services in a society. It also refers to the mode of production, exchange and distribution and the role which govt. plays in economic activity. ***It may be of three types-***

1. Capitalist Economy
2. Socialist Economy
3. Mixed Economy

Capitalist Economy (Free Market Economy)

Capitalist economy is one in which the factors of production are privately owned and managed and in which production takes place on the initiative for private profits. It is a free economy in which government interference is not found. ***An economy is called capitalist or a free market economy or laissez-faire economy (liberal)***.

Characteristics:

1. **Right of Private Property**
2. **Freedom of Enterprise**
3. **Freedom of choice by consumers**

   In a free market economy, the allocation of resources is determined by the consumer preference.

4. **Profit Motive**
5. **Competition**
6. **Price mechanism**

   A capitalist economy uses 'prices' as the principal means of allocating resources.

7. **Inequalities of Income**

Socialist Economy (Controlled Economy):

In a Socialist Economy, all material means of production i.e. land, capital and mines etc. are owned by the whole community represented by the STATE. All the members being entitled to the benefits from the fruits of such socialized planned production on the basis of equal rights. State decides the size and direction of the investment. ***The state works for the welfare of the society and profit motive is not important for it***.

[A Socialist economy is also called as "Command Economy" or a "Centrally Planned Economy"]

***Characteristics*:**

1. **Collective ownership of means of production**
2. **Centrally planned economy**
3. **Economic equalities**
4. **Social welfare**
5. **Lack of competition**
6. **Elimination of exploitation**
7. **Relative equality of Income**
8. **Absence of Price Mechanism**

Mixed Economy (India)

The concept of mixed economy is of recent origin and given **by J.M. Keynes** as a compromise between socialism and capitalism.

***Features*:-**

1. ***Coexistence of both private and public sectors***
2. ***Planned Economy***
3. ***Positive role of the government***
4. ***Dual system of pricing***

Over-all planning is done by the State authority called Planning Commission.

Chapter 2: Theory Of Demand & Supply

MEANING OF DEMAND

"By demand, we mean the various quantities of a given commodity or service which consumers would buy in one market in a given period of time, at various prices, or at various incomes, or at various prices of related goods."

Five Elements of Demand

1. Desire (want) for a commodity
2. Means to purchase (Availability)
3. Willingness to pay (Ready to pay)

   } **Effective Desire**

4. Certain price – Quantity demanded at a given price
5. Certain period of time – continuous flow (for e.g. per day, per week).

WHAT DETERMINES DEMAND / FACTOR AFFECTING DEMAND/ DEMAND FUNCTION

$$D_m = f\ (P, Pr, Y, T, E, O)$$

1. **Price of the commodity (P)**
2. **Price of related commodities (Pr):**

   Related commodities are of two types:

   a. ***Complementary goods*:** Complementary goods are those goods, which are consumed together, or simultaneously e.g. tea and sugar, automobiles and petrol, pen and ink.
   b. ***Substitutes or Competing goods*:** Substitutes are those goods which can be used in place of one another e.g. tea and coffee, ink pen and ball pen.

3. **Income of the household (Y):**

   a. ***In case of Inferior goods*** increase in income decrease the quantity demanded. So there is inverse relation.
   b. ***In case of Necessaries*** as the income of household increases, the demand for necessaries also increases in the beginning and becomes income inelastic (constant) thereafter.

4. **Tastes and Preference of consumers (T):**

   A positive change in the tastes and preference shall lead to an increase in demand and vice-versa. Fashion can also affect demand and goods which are more in fashion command higher demand than goods, which are out of fashion. '**Demonstration effect'** plays also an important role in affecting demand for a product.

5. **Future Expectation about price (E)**
6. **Other Factors (O):**

   a. ***Size of population***:
   b. ***Composition of population***:
   c. ***Distribution of income***:

   Apart from the above, factors such as class, group, education, marital status, consumer's expectations with regard to future price and weather conditions, also play an important role in influencing household demand.

Note- *'Quantity supplies' and 'factor price' do not determine demand*.

LAW OF DEMAND

Law of Demand states **other things being equal**, there is an inverse relationship between price and **quantity demanded** of a commodity i.e. the price of a commodity falls, the quantity demanded of it will rise and if the price of commodity rises, its quantity demanded will decline.

RATIONALE FOR THE LAW OF DEMAND:

1. **Law of diminishing marginal utility**
2. **Substitution effect**
3. **Income effect**

Price Effect (PE) = Substitution Effect (SE) + Income Effect (IE).

[Hicks and Allen have explained the law in terms of substitution effect and income effect.]

4. **Number of consumers**
5. **Different Uses**

EXCEPTIONS TO THE LAW OF DEMAND:

In this case direct relation between price and demand is found and slope of demand curve will be positive.

1. ***Conspicuous goods (More Price, More Utility):***

   This concept of 'Conspicuous Consumption' is given by the Veblen and it is called **Veblen effect or Prestige Goods effects or Snob Goods.** Diamonds are often given as an example of this case. The higher the price

of diamonds, higher is the prestige value attached to them and hence higher is the demand for them.

2. ***Giffen goods:***

'Giffen goods" are those goods, which are considered inferior by consumers, and examples of such goods are low quality of rice and wheat.

"Sir Robert Giffen, found that when price of bread increased, the British workers purchased more bread not less of it. This was something against the law of demand. Why did this happen? The reason given for this is that when the **price of bread** went up, it caused such a large decline in the purchasing power of the poor people they were forced to cut down the **consumption of meat** and other more expensive foods. Since bread, even when its price was higher than before was still the cheapest food article; people consumed more of it and not less when its price went up. Such goods which exhibit direct price demand relationship are called Giffen goods."

In case of a Giffen goods, demand curve will upward sloping to the right.

3. ***Conspicuous necessities***
4. ***Future expectations about prices***
5. ***Irrational and Impulsive purchases***
6. ***Demand for Necessaries***
7. ***Speculative goods***
8. ***Ignorance effect***

EXPANSION AND CONTRACTION IN DEMAND/MOVEMENT (CHANGE IN QUANTITY DEMANDED)

***Due to change in price alone* demand for a commodity changes, it is called Movement. Movements are of two types:**

a. **Expansion in Demand/Increase in Qty. Demand/ Downward movement on the same Demand Curve:**

Rise in demand due to fall in price is called **Expansion of demand.**

b. **Contraction of Demand/Decrease in Qty. Demand/ Upward movement along the same Demand Curve:**

Fall in demand due to rise in its price is called contraction of demand. In other words contraction of demand is the result of increase in the price of good concerned.

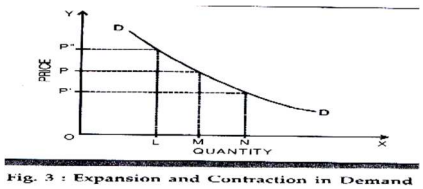


Fig. 3 : Expansion and Contraction in Demand

INCREASE AND DECREASE IN DEMAND / Shifting (CHANGE IN DEMAND)

When due to change in factors other than price i.e. Pr, Y, T, E, O demand for a commodity changes. It is called shifting. Shifting is of two types.

a) ***Increase in Demand / Rightward shift in demand curve*:** When there is increase in demand due to change in factors other than price; it is called increase in demand.

Causes of increase in demand

1. Rise in price of substitutes.
2. Fall in price of a complement good
3. Rise in income
4. Taste & preference favour of commodity
5. Future expectation about rise in price
6. Increase in population

b) ***Decrease in Demand / Leftward shift in demand curve*:** When decrease in demand is due to change in factors other than price it called decrease in demand.

1. Fall in price of substitutes.
2. Rise in price of a complement
3. Fall in income
4. Taste & preference against the commodity
5. Future expectation about fall in price
6. Decrease in population

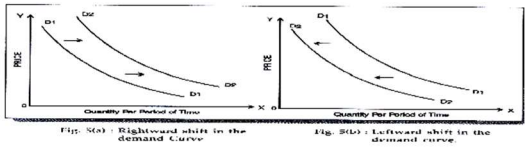


Fig. 5(a) : Rightward shift in the demand Curve

Fig. 5(b) : Leftward shift in the demand curve

ELASTICITY OF DEMAND (Ed)

It is the percentage change in quantity demanded divided by the percentage change in one of the variables on which demand depends, there variables are P, Pr, Y, T, E, O. **Price elasticity of demand is usually referred to as elasticity of demand (Ed=Ep).**

Types of Elasticity of demand (Ed)

1. Price Elasticity of Demand (Ep)
2. Income Elasticity of Demand (Ey)
3. Cross Elasticity of Demand (Ec)
4. Advertisement Elasticity

PRICE ELASTICITY OF DEMAND (Ep)

It is measured as percentage change in quantity demanded divided by the percentage change in price, other things remaining equal.

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

Where Ep = Price Elasticity, Q= Quantity, P = Price, Δ = Change

Note: Due to negative relation between price and quantity, we ignore the negative sign and consider only the numerical value of the elasticity.

DEGREES/TYPES/COFFICIENT OF PRICE ELASTICITY OF DEMAND

1. ***Perfectly elastic demand (Ed = α)***
2. ***More than unitary elastic demand (Ed>1)***
3. ***Unit elastic demand (Ed=1)***
4. ***Less than unit elastic demand (Ed<1)***
5. ***Perfectly inelastic demand (Ed=0)***

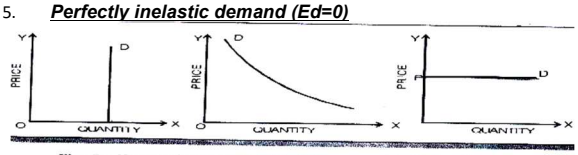


Fig. 8 : Demand curve of zero, unitary, and infinite elasticity

MEASUREMENT OF PRICE ELASTICITY OF DEMAND

1. Total Outlay Method
2. Point Elasticity
3. Arc Elasticity

1. **Total Outlay Method:** Price elasticity can also be measured on the basis of changes in the total outlay(or expenditure) due to change in the price. **Under this method elasticity will be of three types:**

- **E=1:** When as a result of change in price, ***the total expenditure remains the same, the commodity is said to have a unitary elastic demand***.
- **E>1:** When as a result of a rise in price, the **total expenditure** on the commodity falls and as a result of a fall in price, the total expenditure rises, ***the commodity is said to have more than unit elastic demand***.
- **E<1:** When as a result of a rise in price, the **total expenditure** on the commodity rises and as a result of a fall in price the total expenditure falls the ***commodity is said to have less that unity elastic demand***.

Note: **1.** Sometimes Total Expenditure called Total Revenue
2. By this method, we can only say whether a good is elastic or inelastic; we cannot find out the exact coefficient of elasticity.

2. **Point elasticity method:**

In point elasticity, we measure elasticity at a given point on a demand curve. Point Elasticity makes use of **derivative rather than finite changes** in price and quantity. It may be defined as

$$\frac{dq}{dp} \times \frac{p}{q}$$

Where $\frac{dq}{dp}$ is the derivative of quantity with respect to price at a point on the demand curve, and 'p' and 'q' are the price and quantity at that point.

It is to be noted that elasticity is different at different points on the same demand curve. Method used for the **straight line demand curve** is as follows:

Ep = Lower Segment on the demand curve (LS) / Upper Segment on the demand curve (US)

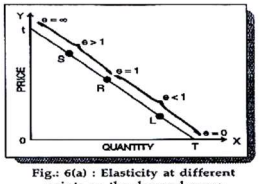


Fig.: 6(a) : Elasticity at different points on the demand curve

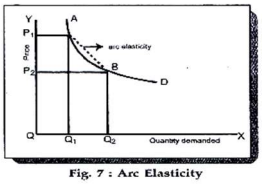


Fig. 7 : Arc Elasticity

3. **Arc Elasticity Method:** When the **price change is somewhat larger** and we have to measure Elasticity over an Arc on the demand curve (say between A and B in figure) rather than at a specific point on it. In such cases,

the **concept of Arc Elasticity is used**. In Arc Elasticity, we use the average of the two prices and quantities (original and new).

$$\frac{\Delta Q}{\Delta P} x \frac{(P_1 + P_2)/2}{(Q_1 + Q_2)/2}$$

Where P1 and Q1 are original price and quantity respectively and P2 and Q2 are subsequent price and quantity respectively.

Note – Due to negative relations between price and quantity, we ignore the negative sign and consider only the numerical value of the elasticity.

ICAI, in most of the cases, have used ARC method for calculation of price elasticity.

FACTORS AFFECTING /DETERMINANTS OF ELASTICITY OF DEMAND:

1. **Availability of substitutes**:
   If ***commodities have more close substitutes, have more elastic demand. And, if commodities have less substitutes, have inelastic demand***. It should be noted that ***while as a group of a good may have inelastic demand, but when we consider its various brands, we say that a particular brand has elastic demand***. Thus while demand for petrol is inelastic, the demand for Indian oil's petrol is elastic demand.
2. **Position of a commodity in the consumer's budget**:
   Generally, *greater the proportion of the income spent on a commodity, the greater will be its elasticity of demand and vice-versa*.
3. **Nature of the commodity**: In general, luxury goods are price elastic while necessities are price inelastic.
4. **Number of uses**: *The more the possible uses of a commodity the greater will be its price elasticity and vice versa*.
5. **The period**: A person can better adjust himself in the long period. So demand will be elastic in long period. But in the short period, demand will be inelastic because he has no time to adjust his demand.
6. **Consumer habits**: If a consumer is habitual consumer of a commodity no matter how much its price change, the demand for the commodity will remain inelastic.
7. **Tied Demand / Joint demand**: The demand for those goods, which are tied/joint to others, is normally inelastic as against those whose demand is independent for e.g. demand of stationery with computer.
8. **Price range**: Goods, which are in ***very high price range or in very low price range have inelastic demand*** but those, which in ***middle price range have elastic demand***.

INCOME ELASTICITY OF DEMAND **(E_i):**

Income elasticity of demand means the ratio of percentage change in quantity demanded due to percentage change in income of consumers.

E_i = Percentage Change in Quantity demanded / Percentage Change in Income

$$E_i = \frac{\Delta q}{\Delta i} x \frac{I}{Q}$$

NOTE: There is No ARC method in INCOME ELASTICITY.

Types of income elasticity: *It may be of three types*

1. **Positive** E_i - In case of Necessary/Normal /Luxury good, there will be positive relation between income and demand because as income increases demand increases and vice versa.

   Positive income elasticity may be of three types:

   E_i = 1 (equal to one)

   E_i > 1 (greater than one) **[Luxurious Goods]**

   E_i < 1(less than one) **[Normal Goods/Necessities]**

2. **Negative** E_i (E_i < 0 - less than zero) **– In case of inferior Goods**, the income elasticity of demand is negative because there will be an inverse relation between income and demand for inferior goods. As income increases demand for inferior goods decreases and vice versa.

3. **Zero** E_i (E_i = 0) – In this case, whether income increases or decreases, the quantity demanded remains the same.

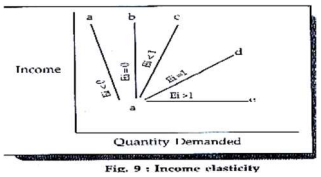


Fig. 9 : Income elasticity

CROSS ELASTICITY OF DEMAND (E_c):

The cross elasticity of demand is proportional change in quantity of X demanded resulting from given relative change in the price of **the related commodity** Y.

E_c = Percentage Change in Quantity demanded 'X' / Percentage Change in Price 'Y'

X and Y may be substitute goods or complementary goods.

Substitutes goods

In case of substitute goods (Tea and Coffee), there is positive relation so **positive cross elasticity** is found here. Positive lies between +0 to + ∞.

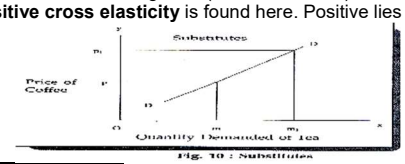


Fig. 10 : Substitutes

Complementary goods

In case of complementary goods (Pen and Ink), there is inverse relation, so **negative cross elasticity** is found here. Negative lies between -0 to -∞.

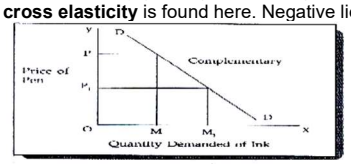


Fig. 11 : Complementary Goods

There may be another method in which average of the two prices and quantities are taken:

Arc method of $E_c = \frac{Q_{2x} - Q_{1x}}{Q_{2x} + Q_{1x}} x \frac{P_{2y} + P_{1y}}{P_{2y} - P_{1y}}$

Note: Here do not ignore – or + sign because – indicates negative relation and + indicates positive relation.

In ICAI, in most of the cases, Arc method has been used for calculation of cross elasticity.

DEMAND DISTINCTIONS:

There are following types of demand distinctions-

1. **Producers goods**: Goods used for the production of other goods- machinery
   Consumer Goods: Goods for final consumption – readymade clothes & foods
2. **Durable goods**: Goods that can be consumed more than once.
   Non durable goods: Goods that cannot be consumed more than once- milk, bread.
3. **Derived demand**: Demand origination as a consequence of purchase of original (parent) product – demand for cement arises of a consequence of demand for building.
   Autonomous demand: Independent Demand of other goods – also called Direct Demand.
4. **Short run demand :** Demand which arises as a result of change in price or income
   Long-run demand: Demand ultimately exists and enough time is allowed to adjust the market.
5. **Industry Demand:** Demand for the total firms operating under an industry – total demand for steels in the nation
   Company Demand: Demand for single company – demands for TATA steels

ADVERTISEMENT ELASTICITY

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

advertising elasticity greater will be the responsiveness of demand to change in advertisement. Advertisement elasticity varies between zero and infinity.

- It is measured by % change in demand divided by % change in spending on advertising.

DEMAND FORECASTING

Forecasting of demand is the art and science of predicting the probable demand for a product or a service at some future date on the basis of certain past behaviour patterns of some related events and the prevailing trends in the present.

Methods for Demand Forecasting

- Survey of Buyer's intentions
- Collective opinion method
- Expert opinion method
- Barometric Method
- Statistical Methods
- Controlled Experiments

THEORY OF CONSUMER BEHAVIOUR

WANTS

All wants have some features- wants are unlimited, satiable, competitive, complementary, alternative, wants vary with time, place and person, wants influenced by advertisement, recur again and wants become habits and customs.

***Classification of wants*:**

1. ***Necessaries*:**

   Necessaries are those which are essential for living. They are known as 'necessaries of efficiency'. If by custom and tradition, people require some wants**, it is known as 'Conventional Necessaries.'**

2. ***Luxuries***: They are the addition to efficiency and they are the expensive and superfluous items.

3. ***Comforts*:**

   It is lie **between necessaries and luxuries**. There goods are necessary for happy living but not so essential.

UTILITY

Utility is the power of a commodity to satisfy human wants. In other words, Utility may be defined as the satisfaction derived from the consumption of a good.

1. It is subjective entity and differs from person to person, time to time and place to place.
2. **Utility (expected utility) is different from satisfaction (realized utility).** But when economists speak of the utility of a certain good, they are referring to the **satisfaction gained from consuming the good.**
3. **Utility differs from beneficial /usefulness:** For eg. Wine and poison have utility but not beneficial.
4. **Two theories are:**
   - Marginal Utility on the basis of **Cardinal Utility** – Alfred Marshall
   - Indifference curve analysis on the basis of **Ordinal utility** – Hicks and Allen

Cardinal and Ordinal Utility:

1. According to **cardinal utility** concept, utility of a commodity can be measured and compared in numerical terms like 10, 8, 6, 4, and 2. ***Utility is measured in terms of money which a consumer is ready to pay*** – **MARSHALL.**
2. According to **ordinal utility** concept, the ***utility derived from the consumption of goods can not be measured in numerical terms but can be compared or ranked***. For eg. Satisfaction of 2 cups tea = 1 cup coffee - **HICKS AND ALLEN.**

Total Utility (TU): It is sum of utility derived from different units of commodity consumed by a consumer.

TU = ∑MU or TU = $MU_1 + MU_2 + MU_3 \ldots\ldots\ldots\ldots MU_n$

Marginal Utility (MU): Marginal utility may be defined as the satisfaction derived by a consumer from the consumption of an additional unit of a particular good.

MU= ΔTU/ Δ Qty. consumed or $TU_n - TU_{n-1}$

Utility is also known as 'Satiety' and TU is known as 'Full Satiety" and MU is also known as 'marginal satiety'.

Relation between TU and MU: Total utility is the sum of marginal utilities. In the above table MU always declines and when MU decreases TU increases, when MU is zero then TU is maximum. This is called 'saturation point' and after that when MU become negative, TU decreases. MU may be positive, zero or negative but TU never negative.

MARGINAL UTILITY ANALYSIS

Alfred Marshall, explains how a consumer spends his income on different goods and services so as to attain maximum satisfaction.

Assumptions of the MU Analysis:

1. ***The cardinal measurability of utility:***
   According to this theory, utility is measurable and quantifiable entity in the terms of money, which a person is ready to pay.
2. ***Constancy of the MU of money:***
   The MU of money remains constant throughout when an individual is spends money on goods.
3. ***The hypothesis of independent utility:***
   It means independent unit have independent utility and it ignores complementarities between goods.
4. ***Rationality:***
   It is assumed that consumer is rational while spending money, He is not making impulsive purchases.

THE LAW OF DIMINISHING MARGINAL UTILITY:

Law of Diminishing Marginal Utility (DMU) states that *"The additional benefit which a person derives from a given increase in stock of a thing diminishes with every increase in the stock that he already has"* .

In other words as per law of DMU, *the marginal utility of a good diminishes as an individual consumes more units of a good. And its total utility increases upto a certain level but at a diminishing rate*.

***Relation between Total Utility and Marginal Utility*:**

1. When the total utility rises the marginal utility diminishes
2. When the total utility is maximum then the marginal utility is zero
3. When the total utility is diminishing then the marginal utility is negative.

***Three more assumptions*: There are three more assumptions:**

1. Taste, income of the consumer remains unchanged
2. The units of the commodity are identical in all aspects.
3. There is no time-gap between consumption

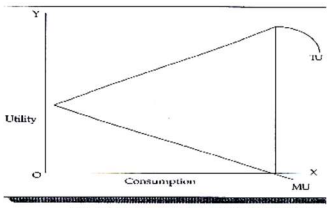


Fig. 12 : Total Utility and Marginal Utility

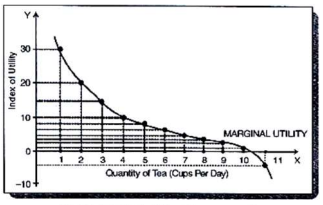


Fig. 13 : Marginal utility of tea consumed

CONSUMER'S SURPLUS (CS) – Alfred Marshall

CS is the difference between maximum price a person is willing to pay for a goods and its market price.

CS = what a consumer is ready to pay- what he actually pays,

What a consumer ready to pay' is taken in terms of 'MU' and 'what he actually pays' is taken in terms of 'Price'. So,

CS = MU – P

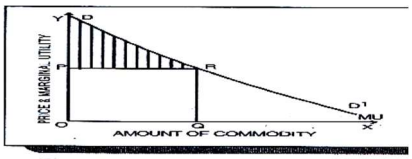


Fig. 14 : Marshall's Measure of Consumer's Surplus

***Limitations*:**

1. Consumer's surplus cannot be measured because it is difficult to measure the MU.
2. In the cases of necessaries, the marginal utilities of the earlier units are highest. In such case the consumer's surplus is always infinite.
3. CS is affected by the availability of substitutes.
4. There is no simple rule of deriving the utility of articles of prestige value (e.g. diamonds).
5. Marshall assumed MU of money remain constant and this assumption in unrealistic.
6. Utility cannot be measured in terms of money

INDIFFERENCE CURVE (IC) ANALYSIS

This theory is alternative and more realistic method of explaining consumer demand. It is based on consumer preferences. The Consumer preference approach is an ordinal concept based on ordering of preferences.

***ASSUMPTIONS UNDERLYING 'IC' APPROACH*:**

1. Consumer is rational and possesses full information.
2. Consumer is capable of ranking all combinations of goods according to the satisfaction. **[Ordinal]**
3. Consumer has consistent consumption pattern behavior. If he prefers A to B and B to C then he must prefer A to C. **[Transitivity]**
4. More is preferable to less, i.e. if combination A has more commodities than combination B, then A must be preferable to B. **[Consistency]**

INDIFFERENCE CURVE (IC):- HICKS AND ALLEN – ORDINAL APPROACH - An IC is the curve, which represents all those combinations of two goods, which give same satisfaction to the consumer.

PROPERTIES OF INDIFFERENCE CURVE:

An indifference curve slope downward to right: In the below table and figure. It shows than, an indifference curve has negative slope that implies that it slopes downward from left to right. The reason underlying this property is that if consumer ***has to stay at the same level of satisfaction***, quantity of one commodity must decrease when quantity of other commodity increases.

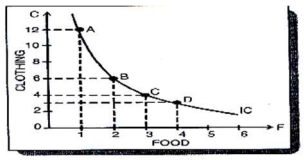


Fig. 15 : A Consumer's Indifference Curve

Indifference curves can never intersect to each other: It implies that only one indifference curve will pass through a point in the indifference map. In the other words, two indifference curves cannot represent the same level of satisfaction so they cannot intersect each other. In the figure at IC1, satisfaction at A=B and IC2, satisfaction at A=C but B ≠ C, So we an say that two ICs never intersect to each other.

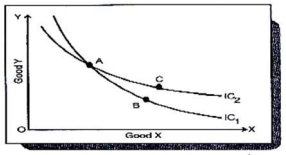


Fig. 17 : Intersecting Indifference Curves

Indifference curves are always convex to the origin not concave: It has been observed that as more and more of one commodity (X) is substituted for another (Y), the consumer is willing to part with less and less of the commodity being substituted (i.e.Y). This is called law of diminishing marginal (Law of DMRSxy) rate of substitution between X and Y goods.

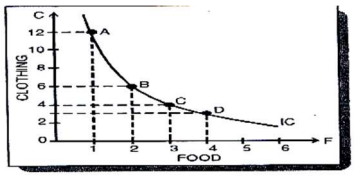


Fig. 15 : A Consumer's Indifference Curve

A higher indifference curve represents a higher level of satisfaction that lower IC:

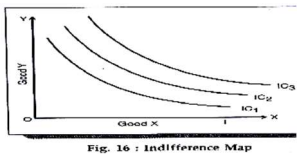


Fig. 16 : Indifference Map

Indifference curve will not touch the X or Y axis – This is contrary to our assumption that the consumer wants combination of two goods. Therefore IC will not touch either X axis or Y axis.

BUDGET LINE/PRICE LINE

Budget line shows all those combinations of two goods which the consumer can buy spending his given money income on the two goods at their given prices.

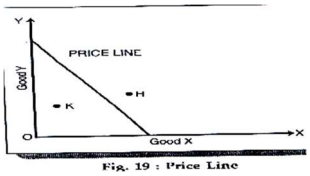


Fig. 19 : Price Line

CONSUMER'S EQUILIBRIUM UNDER IC ANALYSIS:

A consumer is in equilibrium when he is deriving maximum possible satisfaction from the goods and is in no position to rearrange his purchases of goods.

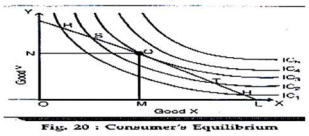


Fig. 20 : Consumer's Equilibrium

Thus at the equilibrium Point Q,

$$MRS_{xy} = \frac{MU_x}{MU_y} = \frac{P_x}{P_y}$$

- ✓ The ***slope of Indifference curve*** shows the marginal rate of substitution of X for Y (MRS_{xy}) which is equal to $\frac{MU_x}{MU_y}$ while the ***slope of price line*** indicates the ratio between the prices of two goods i.e. $\frac{P_x}{P_y}$.

***We can, therefore, express the condition for the consumer's equilibrium in two ways*:**

1. Price line must be tangent to the indifference curve.
2. The marginal rate of substitution of good X for good Y must be equal to the ratio between the prices of the two goods.

SUPPLY

- ➢ ***The term supply refers to the amount of a good or service that the producers are willing and able to offer to the market at various prices during a period of time.***
- ➢ Supply refers to what firms offer for sale and not necessarily to what they succeed in selling.
- ➢ ***Supply is a flow***. Thus stock is not supply, because supply is the part of stock.
- ➢ Supply may defined as a schedule which shows the various amounts of a products which a producer is willing to and able to produce and make available for sale in the market at each specific price in a set of possible prices during some given period: **– By Prof. McConnell**

DETERMINANTS OF SUPPLY (FACTORS AFFECTING SUPPLY)

1. ***Price of the product (P):***
2. ***Price of related goods (Pr):***
3. ***Prices of factor of production (Cost of Production):***
4. ***Technology (T):***
5. ***Government policy (G):***
6. ***Future Expectation about price (E):***
7. ***Other factors (O):***

LAW OF SUPPLY

Other things being equal, when price increases then supply for a commodity increases and when prices decreases then supply for a commodity decreases. Thus supply has positive relation with price.

Types of supply schedule and supply curve:

There may be two types of supply schedule and supply curve-

1. Individual supply schedule and supply curve (Single Seller)
2. Market supply schedule and supply curve (No. of sellers)

But both supply schedule and curves have positive relationship between price and supplied quantity.

MOVEMENT ON THE SUPPLY CURVE (CHANGE IN QTY. SUPPLIED)

When supplied quantity changed due to change in only price, it is called movement.

Movement are two types

Expansion in supply – Rise in supply due to rise in its price, is called "Expansion in supply."

Contraction in supply – Fall in supply due to fall in its price is called "Contraction in supply."

SHIFTING (CHANGE IN SUPPLY)

When supply of a commodity changes due to ***change in factors other than price***.

INCREASE AND DECREASE IN SUPPLY

Increase in Supply: Increase in supply due to favorable *change in factors other than price*, is called "Increase in Supply".

Decrease in supply: Decrease in supply due to unfavorable *change in factors other than price* is called "Decrease in supply".

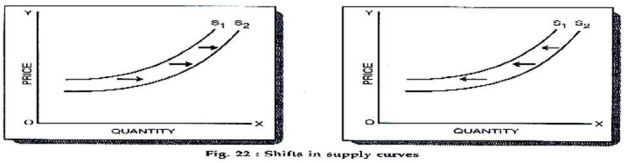


Fig. 22 : Shifts in supply curves

CHAPTER 3: THEORY OF PRODUCTION AND COST

- **production is any economic activity, which is directed to the satisfaction of the wants of the people**.
- **According to fundamental law of science man can not create matter. Man can only create or add utility.**

METHODS OF PRODUCTION (CREATION OF UTILITY)

Form Utility Place Utility Time Utility Personal Utility

Thus entire process of production is nothing but creation of form utility, place utility, time utility and/or personal utility.

FACTORS OF PRODUCTION

Factors of production means the factor services used in the process of production. These factors can be classified as:

1. Land 2. Labour 3. Capital 4. Entrepreneurship

MEANING OF PRODUCITON FUNCITON

The production function may be two types-

1. **Short period production function:**
   In the short run, **atleast one factor remain fixed** and others are variable. This is **done when law of variable proportion** is derived.
2. **Long period production function:**
   In the long run, all factors are varied in the same proportion and it is **the matter of law of returns to scale.**

Assumptions: Production function is based on the certain assumptions:

1. Particular unit of time
2. Technical knowledge remain constant
3. Factors are divisible
4. Producer is using best technique

Cobb-Douglas Production Function

This concept is given by **Paul H. Douglas and C.W. Cobb** of the U.S.A. and in this case, output is manufacturing production and inputs are Labour and Capital.

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

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

LAW OF VARIABLE PROPORTION (LAW OF DIMINISHING RETURNS)

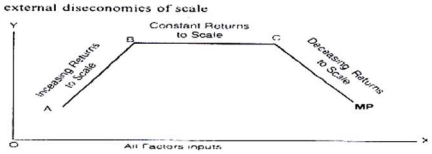
STAGES	TP	MP	AP
Stage I	Increases at an increasing rate	Continue to increase with decreasing rate and reaches at maximum point.	Increases at decreasing rate.
Stage II	Increases at diminishing rate and reaches its maximum point.	Decreases and becomes zero	Reaches at its maximum point and start decreasing.
Stage III	Begins to fall	Becomes Negative	Continues to diminish

LAW OF RETURNS TO SCALE

In the long run, all factor inputs in the production function can be changed. The behaviour of output consequent to change in the quantities of ***all factor inputs in the same proportion*** (i.e. keeping, the factor proportions unaltered) is known is 'returns to scale'.

Return to scale may be three types:

1) **Increasing Returns to Scale**
2) **Constant returns to Scale: Constant return to scale is also called 'Linear Homogeneous Production Function'.**
3) **Diminishing Returns of scale**



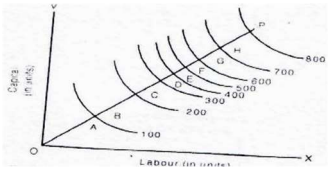
In the above figure ***from A to B, there is increasing return to scale*** because MP is increasing and ***from B to C, there is constant return to scale*** because MP is constant and ***from C to D there is decreasing returns to scale*** because MP is decreasing.

Causes of the application of the law of returns to scale:

i) ***Internal and external economics of scale***

ii) ***Internal and external diseconomies of scale***

The Law of Increasing, Constant and Decreasing returns to scale can be understood with the help of **Iso Quant Curve (IQC)** in this way-



In the above figure, all IQC represents equal production curve i.e. 100 units, but as more units of labour and capital introduced additional output increases in the same manner but Labour and capital firstly introduced in decreasing manner (from A to D) and it gives 'Increasing returns to scale' and after that in constant manner (from D to F), it gives 'constant returns to scale' and lastly in increasing manner (from F to P) it gives 'decreasing returns to scale'.

INTERNAL AND EXTERNAL ECONOMIES AND DISECONOMIES OF SCALE

INTERNAL ECONOMIES AND DISECONOMIES:

Internal economies are those economies, **which are firm specific**. Those are available to that particular firm in the industry, which seeks to increase its level of output by way of increasing its scale of production.

1) ***Technical Economies* & Diseconomies**
2) ***Management Economies* & Diseconomies**
3) ***Commercial Economies* & Diseconomies**
4) ***Financial economies* & Diseconomies**
5) ***Risk bearing economics* & Diseconomies**

EXTERNAL ECONOMIES AND DISECONOMIES

External economies are those economies, **which are industry-specific (firms).** These are available to all the firms in the industry, when the scale of operation of the industry as a whole expands.

1) ***Cheaper raw materials and capital equipment:***
2) ***Technological external economies:***
3) ***Development of skilled labour:***
4) ***Growth of ancillary industries:***
5) ***Better transportation and marketing facilities:***

External Diseconomies

- However, external diseconomies may arise due to expansion of an industry. An example of external diseconomies is the rise in some factor prices.
- Moreover, too many firms in an industry at one place may also result in higher transportation cost, marketing cost and high pollution control cost.
- The government may also prohibit or restrict expansion of the industry at a particular place.

COST ANALYSIS: Cost analysis refers to the ***study of the behaviour of cost in relation to one or more production criteria***, namely, size of output, scale of operations, prices of factors of production and other relevant economic variables. It is ***concerned with financial aspects of production***.

COST CONCEPTS

1) **Accounting costs and Economic costs:**

Accounting costs relate to those costs only, which *involve cash payments by the entrepreneur* of the firm. Accounting costs are also **called explicit costs**.

Implicit Cost: Costs of factors owned by the entrepreneur himself and employed in his own business are called implicit costs. **Implicit costs also known non-accounting costs**.

***For example*:**
a) Rent of self owned Building
b) Interest on self owned capital
c) Wages to entrepreneur

Economic costs include both accounting costs and implicit costs.

Economic cost = Accounting cost (Explicit cost) + Non Accounting cost (Implicit cost)

Economic profit = Total Revenue – Economic cost

Accounting profit = Total Revenue (TR) – Explicit cost (or Accounting Cost)

Accounting Profit – Non Accounting Cost = Economic Profits.

Note: Accounting Profits is always greater than Economic Profits.

2) **Outlay costs and Opportunity costs:**

Outlay costs involve actual outlay of funds on wages, material, rent and interest etc.

Opportunity cost of factor refers its value in its next best alternative use or it is the cost of forgone opportunity.

3) **Direct or Traceable costs and Indirect or Non-Traceable costs**

Direct costs are costs that are readily identified and are traceable to a particular product, operation or plant. e.g. Direct Material, Direct labour, and Manufacturing costs.

Indirect costs are not readily identified and not visibly traceable to a particular product, operation or plant e.g. Indirect material, Indirect labour and Indirect expenses.

4) **Fixed and variable costs:**

Fixed costs do not change with changes in level of output, e.g., rent, insurance etc. It can not be avoided.

Variable costs are those costs that change with changes in level of output. E.g cost of raw material and wages etc.

COST FUNCTION

- ***Cost functions are of two kinds***:
- (a) Short - Run Cost Functions & (b) Long - Run Cost Functions

SHORT-RUN TOTAL COSTS

✓ ***Short-Run:***
Short Run is a period in which some factors are fixed and some factors are variable. Fixed factor have fixed cost and variable factor have variable cost. So, ***law of variable proportion applies here***. In short-run output can be increased or decreased by changing variable factors only but fixed factors cannot be varied.

✓ ***Long-Run:***
Long-Run is a period in which all factors can be varied. There is only variable cost, it's doesn't have fixed cost. So ***law of returns to scale applies here***. In long run output can be increased or decreased by changing all the factors.

Both short-period and long-period can not be quantified

✓ ***Total cost (TC):***
Total cost of production is the sum of all expenditure incurred in producing a given volume of output. In other words, TC = TFC + TVC

✓ ***Total Fixed Cost (TFC):***
Fixed Cost does not change with changes in the level of output. ***TFC is parallel to X-axis***. In the figure given below, even at zero output-fixed cost remain the same in the short run.

✓ ***Total Variable cost (TVC):***
Variable costs are those costs that change with changes in level of output. ***It has inverse 'S' shape and start from origin***. Figure given below shows that as output is zero cost is also zero and as output increases, cost also increases

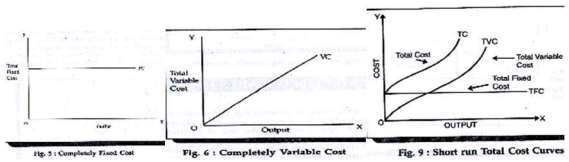


Fig. 5 : Completely Fixed Cost | Fig. 6 : Completely Variable Cost | Fig. 9 : Short run Total Cost Curves

✓ ***Semi-Variable Cost & Stair-Step Variable Cost***:
There are some costs which are neither perfectly variable, nor absolutely fixed in relation to the changes in the size of the output. **They are known as semi-variable costs**. Example: Electricity charges include both a fixed and a charge based on consumption.

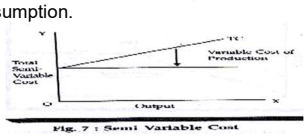


Fig. 7 : Semi Variable Cost

In the above figure, SVC of Electricity is divided in two parts- FC and VC and in below figure, a ***Stair-Step Variable Cost increases in a stair-step*** i.e. remain fixed over certain level of output but suddenly jump to a new higher level of output **Like Fixed salary of foreman.**

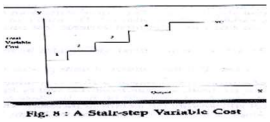


Fig. 8 : A Stair-step Variable Cost

SHORT-RUN AVERAGE COST

1. ***Average Fixed Cost (AFC):***
   - ***[AFC = TFC/Q]***
   - ***This curve is also called Rectangular Hyperbola.***
2. ***Average Variable Cost (AVC):***
   - ***[AVC = TVC/Q]***
3. ***Average Total Cost (ATC):***
   - ***[ATC = TC/Q or AFC+AVC]***.
4. ***Marginal Cost (MC):***
   - Marginal Cost is the change in total cost due to change in the output
   - MC = Change in total cost / change in ***quantity produced***
   - MC = Change in Total Variable Cost / change in ***quantity produced***.
   - The MC curve is also 'U' shape.

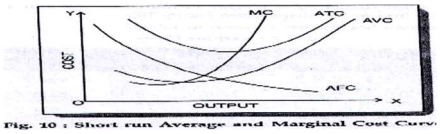


Fig. 10 : Short run Average and Marginal Cost Curv

LONG-RUN AVERAGE COST CURVE (LAC) [ENVELOP CURVE OR PLANNING CURVE]

- ***SAC curves are also called Plant Curves***.

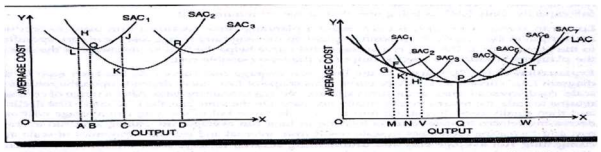


Fig. 11 : Short run Average Cost Curves | Fig. 12 : Long run Average Cost Curves

It is to be noted in the above figure, that LAC curve is not tangent at the minimum point of SACs-

✓ When LAC declines — LAC is tangent to the falling portion of SAC
✓ When LAC rising — LAC is tangent to the rising portion of SAC
✓ **When LAC minimum — LAC is tangent to the minimum point of SAC**

The long-run average cost curve will be a smooth curve enveloping all short run average cost curves, so it is ***called 'enveloping curve'.***

Long run cost curves are often called a planning curve *because a firm plans to produce any output in the long run by choosing a plant on the LAC curve corresponding to the given output.*

PRICE DETERMINATION IN DIFFERENT MARKETS

TYPES OF MARKET STRUCTURES

1. Perfect Competition
2. Monopolistic Competition / Imperfect Competition / Monopolistic Competitive Market
3. Monopoly / Monopolist Market
4. Oligopoly

CONCEPT OF DIFFERENT TERMS OF REVENUE:

1. **Revenue**
   The revenue of a firm is its sales, receipts or incomes.
2. **Total Revenue (TR)**
   TR refers to the amount of money, which a firm realized by selling certain units of a commodity.

TR = P X Q Where 'P' is the Price & 'Q' is quantity of a commodity sold.

3. Marginal Revenue (MR)

MR is the change in TR resulting from the sale of an additional unit of a commodity.

MR = Change in TR / Change in Qty. sold

Or $TR_n - TR_{n-1}$

4. Average Revenue (AR)

AR is revenue earned per unit of output. It is nothing but Price of one unit of output.

AR = TR/Q = P*Q / Q = P Where 'Q' is the quantity of a commodity sold.

MR, AR, TR and Elasticity of Demand

It is to be noted that marginal revenue, average revenue and price elastic of demand are uniquely related to one another through the formula:

$$MR = AR \times \frac{e-1}{e}$$ **where 'e' = Price Elasticity of Demand**

If E=1, then MR = 0

If E>1, then MR will be positive

If E <1 then MR will be negative

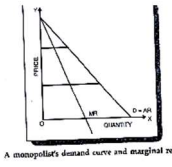
MONOPOLY MARKET

Characteristics (Features)

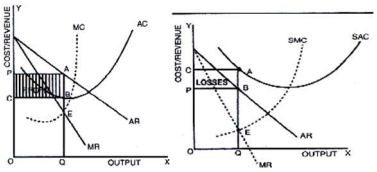
1. **Single seller and Large numbers of Buyers**
2. **Restrictions to entry**
3. **No close substitutes**
4. **Firm is also an industry**
5. **Price maker and price taker both are same**
6. **Demand curve of the firm and market both are same**
7. **Perfect immobility**

Example: Railways and Delhi Metro are the best example of monopoly in India.

8. **P = AR > MR:**



A monopolist's demand curve and marginal revenue curve



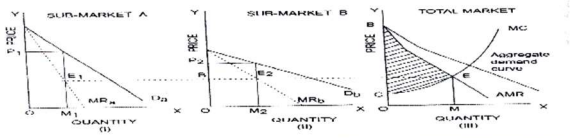
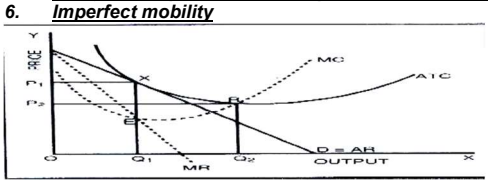


Fig. 21: Fixation of Total Output and different price in the two sub-markets by t discriminating monopolist

IMPERFECT COMPETITION (MONOPOLISTIC COMPETITION) MARKET

1. ***Large number of sellers and buyers***
2. ***Free entry and exit***
3. ***Product differentiation***
4. ***Non price competition***
5. ***Every firm is price maker and price taker of his own product***
6. ***Imperfect mobility***



Types of Oligopoly

1. ***Pure / Perfect Oligopoly:***
2. ***Differentiated / Imperfect Oligopoly:***
3. ***Open and Closed Oligopoly:***
   In Open Oligopoly, New firms can enter the market and compete with existing firms. **In closed oligopoly**, the new entry is restricted
4. ***Collusive & Competitive Oligopoly:***
5. ***Partial or Full Oligopoly:***
6. ***Syndicated and Organised Oligopoly:***

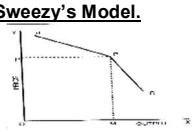
Characteristics of Oligopoly Market

1. ***Few sellers***
2. ***Advertising and selling cost (Non price competition)***

3. ***Group behaviour:***

Kinked demand curve / Indeterminateness of demand curve:

kinked demand curve hypothesis given by an American Economist Sweezy. **Hence this is called Sweezy's Model.**



PERFECT COMPETITION MARKET

1. **Large Number of Buyers and Sellers**
2. **Homogenous Product**
3. **Free Entry and Exit**
4. **Perfect Knowledge**
5. **Perfect Mobility**
6. **Uniform Price**
7. **No Govt. Restrictions**
8. **Industry is Price Maker and Firm is Price Take**
9. **Short run and Long run**
10. **P = AR = MR = DD**

    In a perfectly competitive market, **demand curve of the firm will be perfectly elastic** and this curve is **also known as price, average revenue and marginal revenue curve.**

11. **Firm's and Industry Demand Curve**
12. **Transportation cost and selling costs are not** found in perfect competition market.

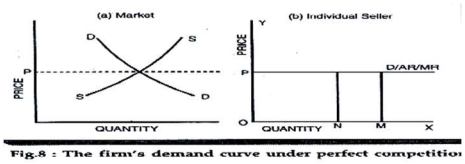


Fig.8 : The firm's demand curve under perfect competitio

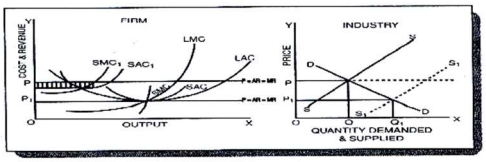
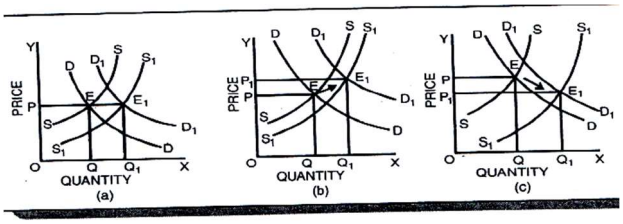


Fig. 14 : Long run equilibrium of the firm in a perfectly competitive mark

DETERMINATION OF EQUILIBRIUM PRICE



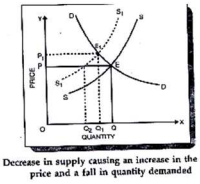
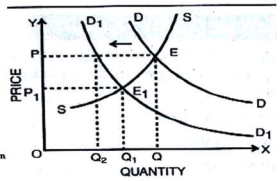
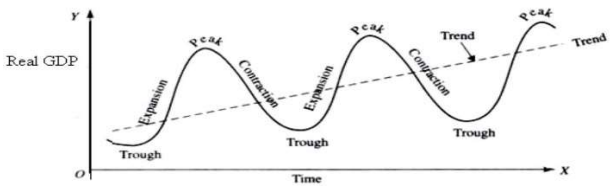


Fig. 5 : Decrease in supply causing an increase in the equilibrium price and a fall in quantity demanded



BUSINESS CYCLES



- The rhythmic fluctuations in aggregate economic activity that an economy experiences over a period of time are called business cycles or trade cycles and are manifested in fluctuations in measures of aggregate economic activity such as gross national product, employment and income.
- A typical business cycle has four distinct phases namely,
  - Expansion (also called boom or upswing) characterized by increase in national output and all other economic variables.
  - Peak of boom or prosperity refers to the top or the highest point of the business cycle.
  - Contraction (also called downs-wing or recession) when there is fall in the levels of investment, employment.
  - Trough or depression occurs when the process of recession is complete and there is severe contraction in the economic activities.
- Economists use changes in a variety of activities to measure the business cycle and to predict where the economy is headed towards. These are called indicators.
- A leading indicator is a measurable economic factor that changes before the economy starts to follow a particular pattern or trend. i.e. they change before the real output changes.
- Variables that change after real output changes are called 'Lagging indicators'.
- Coincident economic indicators, also called concurrent indicators, coincide or occur simultaneously with the business-cycle movements.
- According to Keynes, fluctuations in economic activities are due to fluctuations in aggregate e effective demand.
- According to some economists, fluctuations in investments are the prime cause of business cycles. Investment spending is considered to be the most volatile component of the aggregate demand.
- Fluctuations in government spending with its impact on aggregate economic activity result in business fluctuations.
- Macroeconomic policies, (monetary and social policies) also cause business cycles.
- According to Hawtrey, trade cycle is a purely monetary phenomenon. Unplanned changes in the supply of money may cause business fluctuation in an economy.
- According to Pigou, modern business activities are based on the anticipations of business community and are reacted by waves of optimism or pessimism.
- According to Schumpeter, trade cycles occur as a result of innovations which take place in the system from time to time.