



UGC-NET

COMMERCE

NATIONAL TESTING AGENCY (NTA)

PAPER – 2 || VOLUME – 2

Business Economics, Business Finance,
Business Statistics & Research Methods



VOLUME - 2

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3 UNIT

Business Economics

Theory of Profit

1. Risk theory - Hawley
 2. Innovation theory of Profit - Schumpeter
 3. Rent theory - Walker
 4. Dynamic theory - JB Clark
- **Business Economics:** it is a modern theory dealing with applications of economic principles at the time of organisational decisions.
 - **Normative Economics:** It is subjective and value based. It studies the opinions of policy makers and cannot be verified for truth.
 - **Positive Economics:** It is based on facts and can be verified for truth.

Chapter - 1 Scope of Business Economics

- Decision making: what to produce, how to produce, whom to produce, when to produce etc.
- Forward planning: for future decisions like sales, production
- Economic model of thought to analyse business situation

Chapter - 2

Objectives of Business Firms

Objectives of firm

A business firm is commonly defined as a commercial organisation that participates in selling goods or services to consumers in order to reap profits. It employs productive resources to obtain products and/or services which are offered in the market with the aim of making a profit. Conventional theory of firms assumes profit maximisation as the sole objective of business firms; however the firms pursue more than one objective. Some important objectives, other than profit maximisation are:

- Maximisation of the sales revenue
- Maximisation of firm's growth rate
- Maximisation of Managers utility function
- Making satisfactory rate of Profit
- Long run Survival of the firm

Tip: Do not memorise the complete definition only learn the names of the authors as per the unique keyword in their definition so that when you see any question related to the name of the author you can identify it easily.

Example:

- Synthesis of microeconomic theory and quantitative methods: T.J. Webster
- Methods to business and administrative decision making: Hirschey and Pappas
- Link between economic theory and decision sciences: Mansfield
- Application of economic theory and methodology: Brigham and Poppas
- A fundamental academic subject: Hague
- Use of economic modes of thought: McNair and Meriam
- Application of economic principles and methodologies: Prof. Evan J Douglas.

Concept of Managerial Economics

Managerial economics uses both Economic theory as well as Econometrics for rational managerial decision making.

Econometrics is defined as use of statistical tools for assessing economic theories by empirically measuring relationship between economic variables. It uses factual data for solution of economic problems.

Managerial Economics is associated with the economic theory which constitutes "Theory of Firm". Theory of firm states that the primary aim of the firm is to maximize wealth. Decision making in managerial economics generally involves establishment of firm's objectives, identification of problems involved in achievement of those objectives, development of various alternative solutions, and selection of best alternative and finally implementation of the decision.

Scope of Managerial Economics

- Demand analysis and forecasting—for making choice of business i.e., what to produce and how much to produce.
- Cost analysis — choosing the factors of production.
- Pricing theories — to decide price in the market.
- Profit analysis — to find break-even point.
- Capital budgeting — for investment decisions.
- Competition in the market — for deciding business strategy.
- Business environment—impact of macro and micro environment on firm.

Functions of Managerial Economics

- Identifying business problems related to resource allocation
- Pricing problem
- Inventory and queuing problem
- Investment problems



Chapter - 3

Demand Analysis

Demand

- Demand for a commodity refers to the quantity of the commodity which an individual person is willing and able to buy at a particular price at a specific time.
- Demand is made up of desirability to buy, willingness to pay for it, and ability to pay its price. This is individual demand. Thus, demand is a function of price.
- Market demand is the sum of all the individual demands for a commodity in the market.
- Management decisions relating to production, cost allocation, pricing, advertising, budgeting, etc. call for an analysis of the market demand for its firm's product.

Types of Demands

- **Individual demand** - by a single customer.
- **Market demand** - Summation of all individual demands.
- **Industry demand** - Total demand for a commodity produced by all the firms constituting that industry is called the industry demand like demand for all kinds of cars.
- **Short-run demand** - for goods over a short period like fashion goods, seasonal goods.
- **Long-run demand** - Refers to the demand which exists over a long period. Most generic goods (FMCG and consumer durables) have long-term demand.
- **Autonomous demand** - Also called as direct demand, is one that arises on its own out of a natural desire to purchase. It is independent of demand for any other commodity like demand for food, cloth, house, etc.
- **Derived demand** - It arose because of the demand for some other commodity, like demand for house is autonomous demand. Demand for cement, bricks and iron is derived demand, derived from construction needs.
- **Demand for durable** - goods Goods whose usefulness is not exhausted in a single use. They can be used repeatedly like TV, clothes, shoes, cars, electronic goods.
- **Demand for non-durable goods** - Non-durable goods are those which can be consumed only once in a very short time. All food items, drinks, cosmetics, fall in this category. They are perishable in nature.

Demand Elasticity

It refers to change in quantity demanded due to change in its Price, Income and Prices of related goods.

- Price Elasticity
- Income Elasticity
- Cross Elasticity

Price elasticity of demand-

Percentage Method: It shows the $\% \text{CHANGE IN QTY. DEMANDED} / \% \text{CHANGE IN PRICE}$

ARC method:

- It measures elasticity on midpoints between two selected points on a demand curve.

- This method is applied when change in price is large

Point Elasticity

- It measures Price elasticity at any given point in the curve.
- This method is applied when change in price and resulting qty. Is very small.

Terminology	Description	Numerical measure	Shape of the curve
Perfectly Elastic	Buyers are prepared to buys all at some price and none at even slightly higher price	EP= Infinity	Parallel to Y-axis
Perfectly Inelastic	Qty. demanded does not change due to change in price	EP= 0	Parallel to X-axis
Relatively Elastic	Change in qty demanded is more than change in price	EP>1	Flat
Relatively Inelastic	Change in Qty. demanded is less than change in price	EP<1	Steeper
Unitary Inelastic Demand	Change in Qty. demanded is equal to Change in Price	EP=1	Rectangular Hyperbola

Total Expenditure method

Total expenditure(TE)	Elasticity
TE Remains same with the fall and rise of price(no change)	EP=1
TE Increase with decrease in price and TE decrease with increase in price(opposite direction)	EP>1
TE Increase with increase in price and TE decrease with decrease in price(same direction)	EP<1

Marginal Revenue (MR) and Price Elasticity

MR +	Demand is elastic
MR -	Demand is inelastic

Income elasticity

- It talks about change in Qty demand due to change in price.
- It can be measured by $\% \text{Change in Qty demanded} / \% \text{Change in Income}$
- It can be Zero (necessity), Negative (inferior good), Unity, Greater than unity, Less than unity.
- **Cross Elasticity** i.e change in Qty demanded due to change in Price of related goods.
- It can be measured by $\% \text{Change in Qty demanded} / \% \text{Change in Price of related goods}$

- **Substitute goods:** Positive effect i.e., Change in Qty demanded and price of related goods is in the same direction. If the price of Substitute goods increases the Qty demand of our product will also increase. Example: Tea and Coffee
- **Complementary Goods: Negative effect** i.e., Change in Qty demanded and price of related goods is in the Opposite direction. If the price of Complementary goods increases the Qty demand of our product will decrease. Example: Petrol and Car.

Demand Function

Demand function sets the relation between the demand and the factors that influence the demand. Demand for a commodity not only depends on the price of a commodity, but also on the income, price of substitutes and complementary goods, tastes, habits of consumer.

Short-run Demand Function

Quantity demanded of X (D_x) depends on prices of X (P_x), other factors remain constant in the short run. Thus $D_x = f(P_x)$. Thus change in P_x causes change in D_x .

Long-run Demand Function

Quantity demanded of X (D_x) depends on all the factors related to price as well as the consumer.

$$D_x = f(P_x, I, T, P_s, P_c, \dots)$$

Where, P_x = Price of commodity x

I = Income of consumer, T = Taste and preference of consumer

P_s = Price of substitute goods, P_c = Price of complementary goods

Linear Demand Function

It is a straight line curve with constant $\Delta D / \Delta P$ i.e., change in demand w.r.t change in price is same on the whole curve. It creates demand line.

Non-linear Demand Function

It is a curvilinear shaped curve with $\Delta D / \Delta P$ changes along the curve. It creates demand curve.

Law of Demand

This law states that demand for goods increases with the decrease in price for goods, other factors remaining same and Vice Versa.

Elasticity of Demand

- Law of demand tells us the effect of changes in price on the demand in terms of increase or decrease but does not inform about the degree of responsiveness of consumers to a price change. We cannot quantify the change in demand by studying law of demand.
- Elasticity of demand is the measure of the responsiveness of demand to changing prices. The measure is known as the elasticity coefficient (E_d).

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

- **Cobb - Douglas Function** given by part H. Douglas and C.W. Cobb.

- It is a Linear homogenous Production function of degree one which takes in to account two inputs labour and capital for the entire output of the manufacturing industry $CL = A L^{\alpha} C^{\beta}$ $\alpha + \beta = 1$ (it indicates constant return)

Types of Demand Curves on Basis of Their Elasticities

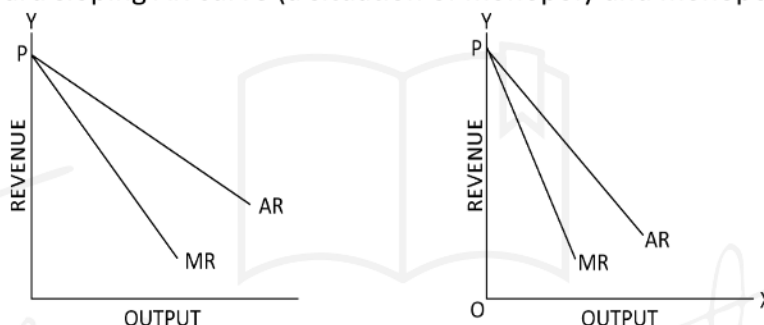
Perfectly Inelastic Demand Curve

- Curve where price change has no effect on quantity demanded. It remains OQ at price OP1 as well as OP2 $\Delta Q = 0$. Total revenue decreases with decrease in price.
- $E_d = 0$. Very essential commodities like medicines, salt, etc have no effect on demand of the change in price.

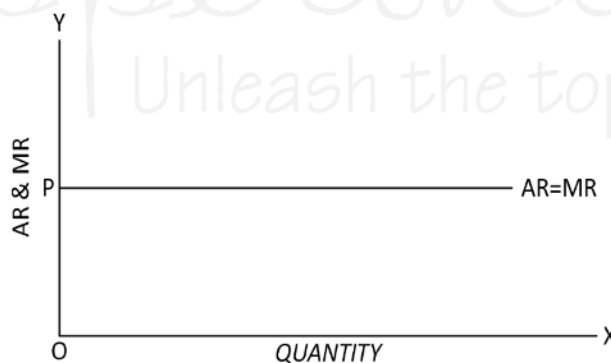
Relationship between AR & MR

Relationship between AR and MR -

- (a) When AR is decreasing, MR should be decreasing faster than AR. Thus, downward sloping MR curve is below the downward sloping AR curve (a situation of monopoly and monopolistic competition)



- (b) If AR is constant, MR is equal to AR. Both are indicated by the same horizontal straight line (a situation of perfect competition)



*Average and Marginal Revenue Curves
under Perfect Competition*

Chapter - 4

Consumer Behaviour

Utility

- It is the basis for demand of a commodity by individual.
- Product utility It satisfies the requirements of a consumer
- Consumer's utility Psychological feeling of pleasure from its consumption to a consumer. It is a post consumption phenomenon.

Consumer's Utility

It is a subjective concept which depends totally on the consumer who consumes it because

- Product has utility to actual consumer only. Meat has no utility to vegetarians.
- Utility varies from time to time - woollens have utility in winters and no utility in summers.
- A commodity need not have same utility for same consumer at different times.

Cardinal and Ordinal

Cardinal Utility

- Classical economists like Carl Manger, Jeremy Bentham, Leon Walras and neo-classical economists like Alfred Marshall believed that utility can be measured in quantitative figures just as height and weight. It gives absolute figures of utility.
- Neo-classical economists coined the term “util” to measure the utility of any good consumed. Thus “util” is a unit of utility. They assumed that 1 util = 1 unit of money and that utility of money remains constant.

Assumptions of Cardinal Utility Theory

- Rationality It is assumed that consumer is rational in nature, he will spend his money on that commodity first which yields the highest utility and the last which gives the least utility.
- Limited money income of a consumer to spend on goods.
- Consumer tries to maximize his satisfaction on spending.
- It is assumed that the utility gained from the successive units of a commodity consumed, decreases as a person consumes them.
- Marginal utility of money remains constant, whatever be the level of a consumers income.
- Utility is additive $U_n = U_{x1} + U_{x2} + \dots + U_{xn}$

Ordinal Utility

- Modern economists like JR Hicks and RGD Allen are of the view that utility cannot be measured in absolute figures. Utility can be expressed only ordinally i.e., in order of their prefer ability.
- This is known as ordinal concept i.e., a consumer may not be able to say that chocolate gives 8 utiles of satisfaction and cake give 12 utiles of pleasure. But, he or she can always tell whether chocolate gives more or less utility than cake. This is the basis of ordinal theory of consumer behaviour.
- Cardinal utility approach can be called as Neo-classical approach.
- Ordinal utility approach of Hicks and Allen can be called as the Indifference curve analysis.

- Cardinalis used “money” as a measure of utility in absolute terms.

Assumptions of Ordinal Utility Theory

- Rationality Aim of maximizing total satisfaction.
- Ordinal utility Consumer is only able to express the order of his preference for different products.
- Transitivity of choice If a consumer prefers A to B and B to C, then he will prefer A to C.
- Consistency of choice If a consumer prefers A to B in one period, he does not prefer B to A in another period or even will not treat A equals to B.
- Diminishing marginal rate of substitution of one good for another shown by $D_y D_x$ This approach assumes that $D_x D_y$ goes on decreasing when a consumer continues to substitute X for Y.

Total Utility (TU)

Summation of the utilities derived by a consumer from the various units of a good at a point or over a period of time.

Marginal Utility (MU)

- It may be defined as the addition of an extra utility to the total utility resulting from the consumption of one additional unit. Thus, utility derived from last unit consumed can be measured by change in total utility. It is proposed by Alfred Marshall. Suppose marginal unit is nth unit. Therefore,

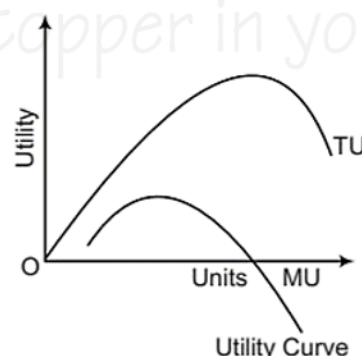
$$MU_n = TU_n - TU_{n-1} = \frac{\Delta TU_n}{\Delta Q_n}$$

- Where MU_n is marginal utility for nth unit, ΔQ_n is change in quantity consumed by one unit, and ΔTU_n is change in total utility.

Law of Diminishing Marginal Utility

Also called as the “Gossen’s First Law”, proposed by Hermann Heinrich in 1854.

- States that the marginal utility (MU) of a good diminishes as an individual consumes more and more units of a good. The extra utility or satisfaction that he derives from an extra unit consumed goes on falling.
- It is only the MU that declines and not the Total Utility (TU) that is increasing but at a decreasing rate.
- This law of diminishing MU is based on two facts
- As an individual consumes more and more units of a good, intensity of his want for goods goes on falling and a point is reached where the individual no longer wants anymore units of the good. That is, when saturation point is reached, MU of a good becomes zero, afterwards it can be negative. Second fact is that the different goods are not perfect substitutes for each other, in the satisfaction of other particular wants. It is consumed for satisfaction of only one specific want.
- Money is an exception. MU of money is never zero or negative since it can be put to various uses for satisfying different wants.
- Law of diminishing MU is one important cause for the demand curve to slopes downward.



Conditions Where Law of Diminishing MU applies are

- Units of the commodity should be consumed continuously in succession at one particular time.
- There should not be any changes in the taste, fashions, lifestyles, and customs of the consumer. Mental stage should be same.
- All units of commodity should be homogenous in features.
- Prices of all units of commodity and their substitutes should remain the same.

Law of Equi-marginal Utility

- Also known as law of substitutions, law of maximum satisfaction and Gossen's Second Law.
- Law of equi-marginal utility explains the consumer's equilibrium. A consumer has a given income which he has to spend on various goods he wants. Now, how will he allocate his money between various goods? What would be his equilibrium position in respect of the purchases of various goods?
- Law of equi-marginal utility depends on the MU of goods and the price of the goods. These two factors decide the buying behaviour of a consumer.
- This Gossen's Second Law of substitution states that the "Consumer will spend his money on different goods in such a way that marginal utility of each good is proportional to its price." That is, if consumer has two goods X and Y to consume. He will be in equilibrium where

$$\frac{MU_x}{P_x} = \frac{MU_y}{P_y} = MU_m$$

Where, MU_x is marginal utility of good x, MU_y is marginal utility of good y, P_x is price of good x, P_y is price of good y.

- MU_m is marginal utility of money i.e., last rupee spent on consumption.
- If suppose MU_x / P_x is not equal to, but is greater than MU_y / P_y , then the consumer will substitute good X for good Y. As a result MU of X will fall and MU of Y will rise.

Indifference Curve

- J.R. Hicks presented this concept in his book 'Value and Capital' in 1939 and in his another work "A Revision of Demand Theory" in 1956, along with R. Allen.
- According to indifference curve analysis, utility being a psychological feeling is not quantifiable. It can be preferred.
- Indifference curve may be defined as the locus of points each representing a different combination of two substitute goods, which yield the same utility to the consumer. Such a situation is possible because consumer has a large number of goods to consume and that one commodity can be substituted for another. He can make various combinations of two substitute goods which give him the same level of satisfaction. Thus, he would be indifferent between the combinations when he makes a choice. When such combinations are plotted on a graph, it results in indifference curve. It can also be called as Iso-utility curve.

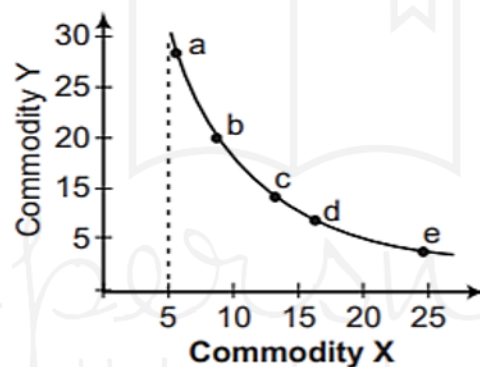
Shapes of Indifference Curve

MRS Decreasing	Convex
MRS Increasing	Concave
MRS Zero	L shaped
MRS Constant	Straight line

Indifference Schedule

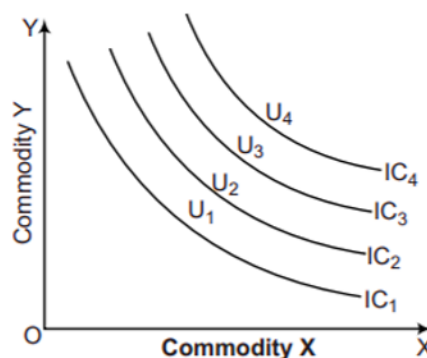
- For goods X and Y- suppose there are 5 combinations of units of X and Y consumed giving equal utility U. See figure.

Combination	Units of Y	Units of X	Total Utility
a	27	5	U
b	20	11	U
c	12	17	U
d	7	20	U
e	3	25	U



Indifference Map

Consumer can take many other combinations giving total utility greater than or less than U. So, there can be various indifference curves showing various levels of total utility. In this chart, four IC curves IC₁, IC₂, IC₃, IC₄ make an indifference map. IC₁ having lowest total utility and curve IC₄ represents combinations giving the highest total utility. Least total utility is U₁ and highest total utility is U₄. See figure

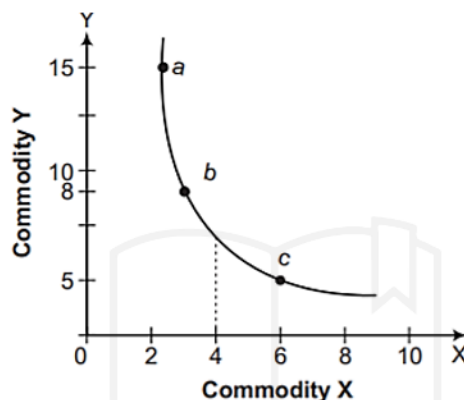


Properties of Indifference Curve

- Indifference curve have a negative slope-which implies that the two commodities are substitutes for each other. Also if quantity of one commodity is increased, the quantity of other commodity will automatically be decreased so that consumer feels the same level of satisfaction from the new combination of the two commodities. See figure.

Combination	Units of Y	Units of X	MRS _{y-x}
a	15	2	
b	8	4	$-7 / 2 = -3.5$
c	5	6	$-3 / 2 = -1.5$

- Marginal rate of substitution is negative and goes on decreasing from 3.5 to 1.5. This diminishing



marginal rate of substitution causes the indifference curves to be convex to the origin. It also implies that no two commodities are perfect substitutes for one another.

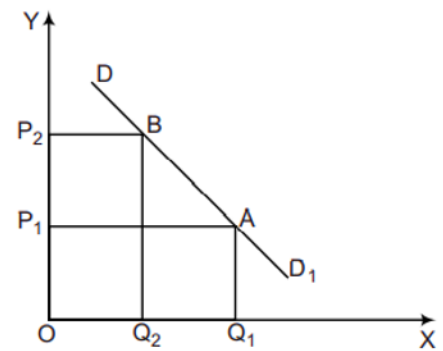
- Indifference curves can neither intersect nor be tangent to one another. The intersection violates the transitivity rule of $A=B$, $B=C$, then A should be equal to C ($A = C$), where A , B and C are three different combinations of two commodities lying on the same IC curve.
- Upper Indifference curve represent a higher level of satisfaction than the lower ones.
- Cannot Touch either axis.
- Are not necessarily Parallel to one another.

Budget Line/Price Line

- Every consumer wants to maximize his utility from expenditure incurred on buying goods. But, every consumer has two limitations — one is his limited income, and other is the price of product. These two combined form a budgetary constraint. All the combinations of two commodities available to the consumer, whose, combined price do not exceeds his income, when joined form a budget line, or price line. Slope of budget line is equal to the price ratio of two commodities.
- The demand curve is negatively sloped indicating that a fall in price leads to increase in demand. This is because of the following reasons Lower prices bring in new buyers to add to market demand. Decline in price causes the real income of the consumer to increase which induces more buying capacity. This is called “Income Effect”. When price falls, but prices of other related goods remains constant, commodity becomes relatively cheaper. This makes the consumer to replace costly goods with this cheaper goods. This is called “Substitution Effect”.
- Price effect = Substitution effect in come effect.

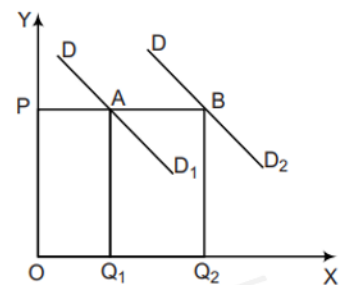
Movement along the Demand Curve

It implies extension or contraction of demand. This is related with changes in the price of commodity, there will not be any change in other factors affecting demand. Suppose on demand curve DD_1 , consumer changes his demand from Q_1 at lower price P_1 on Point A to the new demand Q_2 at higher price P_2 on point B, this is upward movement along the demand curve from point A to B due to increase in price. This is called contraction in demand = $OQ_1 - OQ_2$. Decrease in price cause increase in demand which is extension of demand. Increased price causes contraction of demand. See figure



Shift in Demand Curve

It implies movement of demand curve from one position to another, not because of changes in the price of commodity, but because of change in other factors like income, tastes, price of related goods. This change is called as increase in demand or decrease in demand. Initially quantity demanded is OQ_1 at a price P on A point of demand curve DD_1 . Now demand curve shift upward right to new position as DD_2 . At same price P , quantity demanded increased to OQ_2 . This change is due to non-price factors. See figure



Revealed Preference Theory—By Samuelson

This theory is based on the axiom that all the combination on a budget line are equally expensive, and if a consumer purchases any one particular combination. It means his preference for that particular combination is revealed. The consumer reveals his preference by the combination of goods he buys at different prices. This theory is also treated as the “Third root of the logical theory of demand”.

Exceptions to the law of demand

- **Giffen Paradox** by Sir Robert Giffen :- it states that demand will increase with increase in price and decrease with decrease in price. Causes for upward demand curve: Depression, War, Speculation.
- **Snob effect**:- it refers to Desire to own exclusive goods. Like designer cars, clothes, works of art.
- **Bandwagon effect**:- Following other people's actions and choices.

Chapter - 5

Law of Variable Proportion

Production generally involves transformation of Inputs into Outputs. Production is the function of land, labour, management, capital, and technology.

$$Q = f(L, N, M, K, T)$$

(L= labour, N= land, M= management, K= capital, T= technology)

We classify Production function into two types on the basis of type of factors:

1. **Short Run:** if one input is variable and other inputs are fixed
2. **Long run:** If all the inputs are variable.

Isoquants

- These are equal product curves just like the Indifference curve.
- It shows different combinations of two inputs which produce the same level of output.

Properties:

- Isoquants are negatively sloped
- Do not intersect
- Do not touch either axis
- Convex to the origin
- Higher isoquant higher level of output

Law of Variable Proportion

This law applies in short run production where one factor is fixed and one is variable. It shows the input output relationship when output increases or decreases due to change in input.

X-axis depicts output and Y-axis depicts Total Production(TP), Average Production(AP), Marginal Production(MP)

TP= it is the summation of output produced by all the inputs

MP= it is the additional output produced by additional input unit

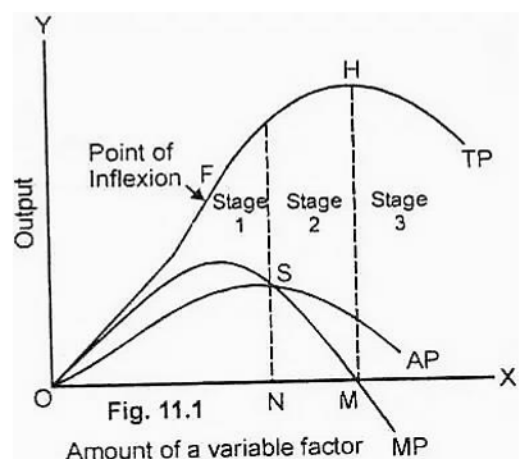
AP= Average production per unit

Assumptions of the law

1. Only one factor is variable, other is fixed
2. Homogeneous units of variable factor
3. No change in technology
4. It applies in short run only

Three stages of Law of variable Proportion

1. Stage 1 TP is increasing at increasing rate, AP, MP is also increasing
2. At point of inflexion Mp starts declining
3. Stage 2 TP increase with decreasing rate, MP declining and becomes 0 at end, AP starts declining
4. Stage 3 TP starts declining, MP becomes negative, AP is still declining.



Why Increasing Return?

- Because of economies of scale:
- Economies can be internal as well as External.

Internal Economies: which are open to a single factory or a firm independently of the action of other firms

Technological economies	Economies in production
Inventory Economies	Economies in transport and storage
Managerial economies	Specialised department under specialised personnel
Marketing Economies	Large scale purchase of material

External economies: which are open to all the firms in the industry i.e effect of external environment. These are Unavoidable.

Why Decreasing Return?

Because of Diseconomies of scale

- Fixity of factor
- Internal diseconomies: Technological, Production, managerial
- Factors of production are imperfect substitute of one another

Law of Return to scale: It indicates change in output due to proportionate change in all the factors of production i.e all factors are variable.

Assumptions:

1. All factors are variable
2. Product is measured in quantities
3. Perfect competition

