BUSINESS ECONOMICS AND FINANCIAL ANALYSIS

CVR

DR.E.UMAREDDY

Topic Number	Topic	
	Unit-III	
1	Production Function	
2	The Law of Variable Proportions	
3	Isoquants,Types, Marginal Rate of Technical Substitution(MRTS),	
4	Isocost line	
5	Least Cost combination of Inputs and Expansion path	
6	The laws of Returns to Scale	
7	Types of Costs ,short run and Long run cost functions	
8	Break-Even Analysis and BEP Problems and Solutions	
9	Market, Market structures	
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Theory of Production

Production is the process of transforming inputs into outputs. Production can be defined as the creation of utility(Value) in different ways.

- Form Utility: Change in the Form of an object (Raw material transformed to finished goods)
- Place Utility: Change in Place of an object (By the means of Transportation, Supply chain, Factory to Retailer)
- Time Utility: Change in Time of consumption (Warehousing, preservation)

1.Production Function:

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

"The production function is purely a technical relation which connects factor inputs and output."- Prof. Koutsoyiannis.

Defined production function as "the relation between a firm's physical production (output) and the material factors of production (inputs)." -Prof. Watson

In this way, production function is an indicator of the physical relationship between the inputs and output of a firm.

Short-run production function.

The short-run is defined as the period of time in which all production factors are classified into fixed and variable factors. Duringthis period at least one of the inputs is fixed. According to the following short-run production function, labour is the only variable **input** while the rest of the inputs are regarded as fixed.

Q=f(L) L is Labour which is variable, Land and Capital are constant

Long-run Production function

The Long-run is defined as the period of time in which all production factors are variable factors. All production factors need to be increased for increased level of Output.

Q=f(K,L,L)

Where Q= Quantity of Production, K= Capital, L= Labour, L= Land

OR

Q= f (a,b.c,d…n,T)

Where Q= Quantity of Production

a,b,c,d…n =Production factors, T = Technology

2.The Law of Variable Proportions

The Law of Variable Proportions which is the new name of the famous Law of Diminishing Returns.

The law of variable proportions states that as the quantity of one factor is increased, keeping the other factors fixed, the marginal product of that factor increases in the initial stage and it will eventually decline. This means that upto the use of a certain amount of variable factor, marginal product of the factor may increase and after a certain stage it starts diminishing.

Assumptions of Law.

→Constant Technology--- This law assumes that technology does not change throughout the operation of the law.
→Fixed amount of some factors. —at least one factor of production must be fixed for this law.
→ Possibility of varying factor proportions—This law assumes that variable factors can be --changed in the short run.

Land inHectors (Fixed Factor)	Variable Input (Labour)	Total Product(in quintals)	Average Product(in quintals)	Marginal Product(in quintals)	Stage of Production
1	1	10	10	10	Stage I Increasing Marginal returns
1	2	25	12.5	15	
1	3	37	12.3	12	Stage II Diminishing Marginal returns
1	4	47	11.8	10	
1	5	55	11	8	
1	6	60	10	5	
1	7	63	9	3	
1	8	63	7.9	0	Stage III Negative Marginal Returns
1	9	62	6.8	-1	

This law has THREE stages

1.Increasing Returns.

2. Diminishing Returns.

3. Negative Returns.

1.Increasing Returns:

In this stage, Average Product increases, Marginal Product increases and also Total Product. TP increases at more proportionate rate. TP increases from 10 to 25 units. This stage is known as increasing returns. This stage of increasing output by increasing labour does not last for a long time. This continues upto 3rdunits. In the first stage, marginal product curve of a variable factor rises in a part and then falls. The average product curve rises throughout and remains below the MP curve**.** MP reaches maximum in this stage.

2.Diminishing Returns:

This is the most important stage in the production function. In stage 2, the total production continues to increase at a diminishing rate until it reaches its maximum point where the 2nd stage ends. In this stage both the marginal product (MP) and average product of the variable factor are

diminishing but are positive. When TP reaches the maximum, MP is zero.MP intersects the X axis in this stage.

As more and more variable factors are used on fixed factor, marginal and average product begins to decrease. Factors of production are indivisible. Economically this is the most viable area of production.

3.Negative Returns.

In the 3rd stage, the TP decreases. The TP, curve slopes downward (From point H onward). The MP curve falls to zero and then is negative. When we increases the labour even after MP becomes zero, then MP becomes negative and it goes below the X axis. This is the most unviable region. In our table from 8th unit onwards, this stage starts.

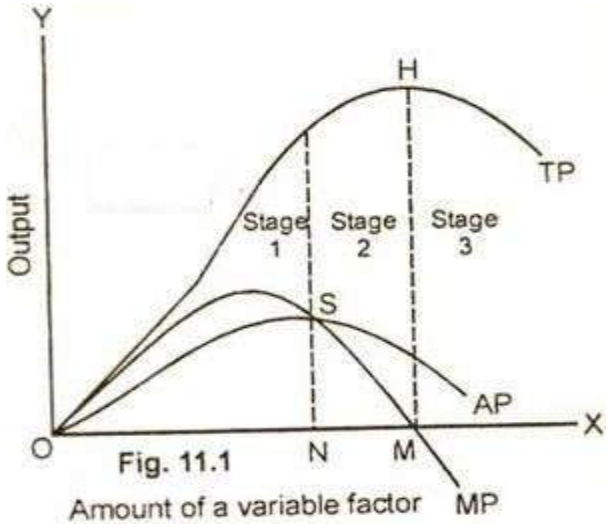


Fig. 11.1

Any sensible producer will stop the production in the second stage where AP and MP begins to decrease, but MP has not become negative. The producer will employ the variable factor (say labor) up to the point where the marginal product of the labor equals to the wage rate.

3.Isoquants

Isoquant is a curve which is the locus of all combinations of two input factors for the same level of output. Isoquant is also called as equal product curve or production indifference curve or constant product curve. Isoquant indicates various combinations of two factors of production which give the same level of output per unit of time. The significance of factors of productive resources is that, any two factors are substitutable e.g. labour is substitutable for capital and vice versa. No two factors are perfect substitutes. This indicates that one factor can be used a little more and other factor a little less, without changing the level of output.Output produced by different combinations of L and K is say, Q, then Q=f (L, K).

Assumptions

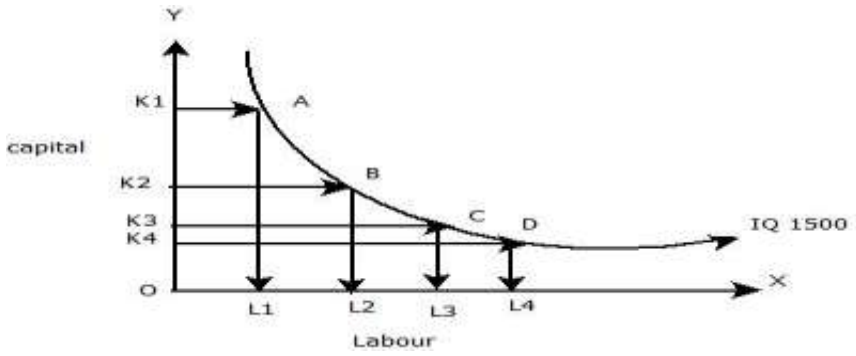
1. There are two factor inputs labour and capital
2. The proportions of factor are variable.
3. Physical production conditions are given
4. The Scale of operation is variable
5. The state of technology remains constant

The shape of Isoquant

The shape of isoquant plays an important a role in the production theory as it indicates rate at which one factor can be substituted with another. Isoquant map shows all the possible combinations of labour and capital that can produce different levels of output. The isoquant closer to the origin indicates a lower level of output. The slope of isoquant is indicated as $\Delta L/\Delta K = MRTS$

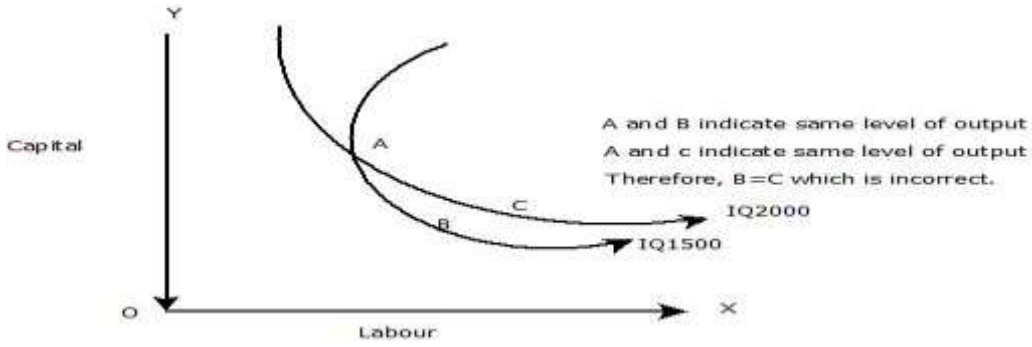
Table indicating various combinations of Labour and Capital to produce 1500 Units of Output

COMBINATIONS	UNITS OF CAPITAL	UNITS OF LABOUR	TOTAL OUTPUT
A	50(OK1)	1 (OL1)	1500(IQ1)
B	45(OK2)	2(OL2)	1500(IQ1)
C	41(OK3)	3(OL3)	1500(IQ1)
D	38(OK4)	4(OL4)	1500(IQ1)

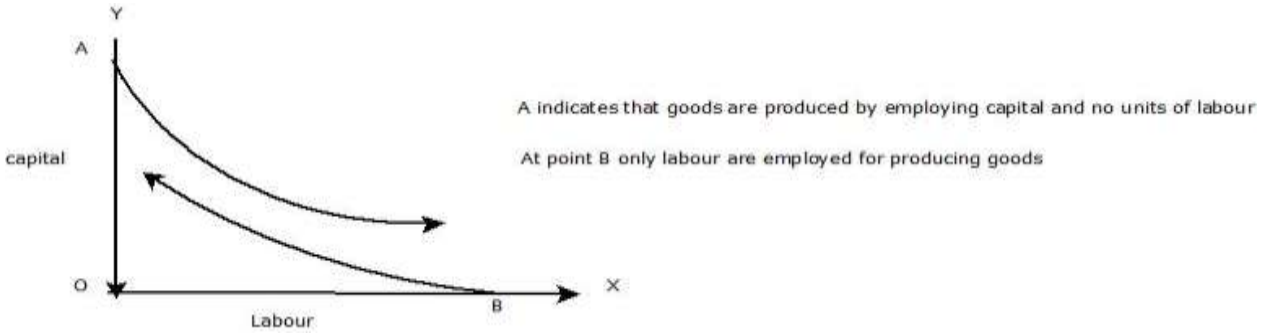


Properties/Characteristics of Isoquants

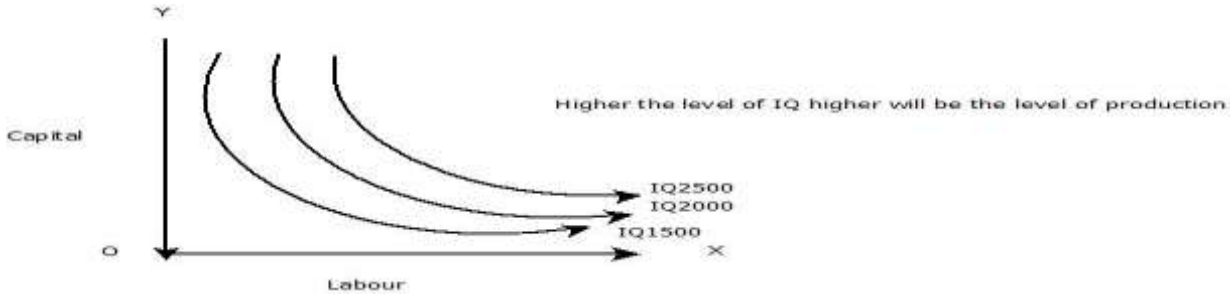
1.Two isoquants do not intersect each other:



2.No isoquant can touch either axis



3.A higher IQ implies a higher level of output

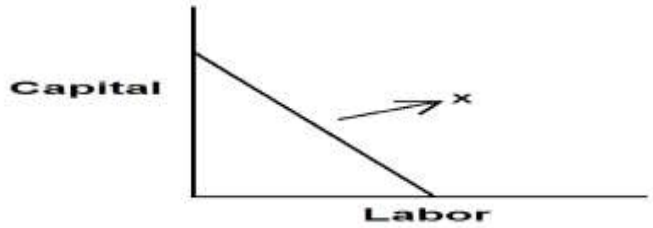


4.IQs are never parallel to each other. The reason behind this attributed to the Slope of Isoquants which changes from one point to another.

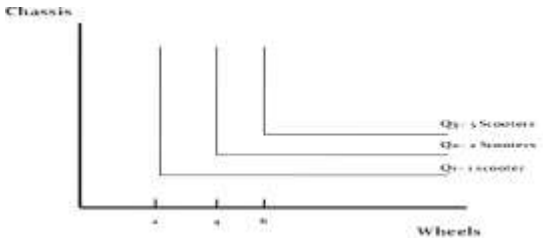
5.IQs are convex to the origin:convex isoquants possess continuous substitutability of K and L over a stretch.

Types of Isoquants

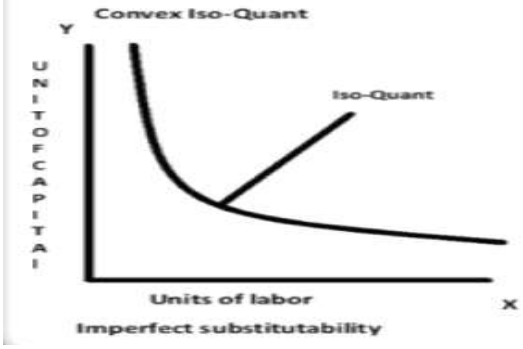
1.Linear Isoquant Curve: This curve shows the perfect substitutability between the factors of production. This means that any quantity can be produced either employing only capital or only labor or through "n" number of combinations between these two.



2.Right Angle Isoquant Curve: This is one of the types of iso-quant curves, where there is a strict complementarity with no substitution between the factors of production. According to this, there is only one method of production to produce any one commodity.



3.Smooth Convex Isoquants



- It assumes continuous substitutability of labour and capital only over a certain range, beyond which factors cannot be substituted for each other.
- This iso-quant appears as a smooth curve convex to origin.

Marginal Rate of Technical Substitution(MRTS)

MRTS defined as the rate at which one factor can be substituted for another factor to obtain the same level of output.

The MRTS is the slope of an Isoquant and measures the rate at which the two inputs can be substituted for one another while maintaining a constant level of output .

$$MRTS = -\frac{\Delta K}{\Delta L}$$

The MRTS can also be expressed as the ratio of two marginal products:

$$MRTS = \frac{MP_L}{MP_K}$$

4.The Isocost Line

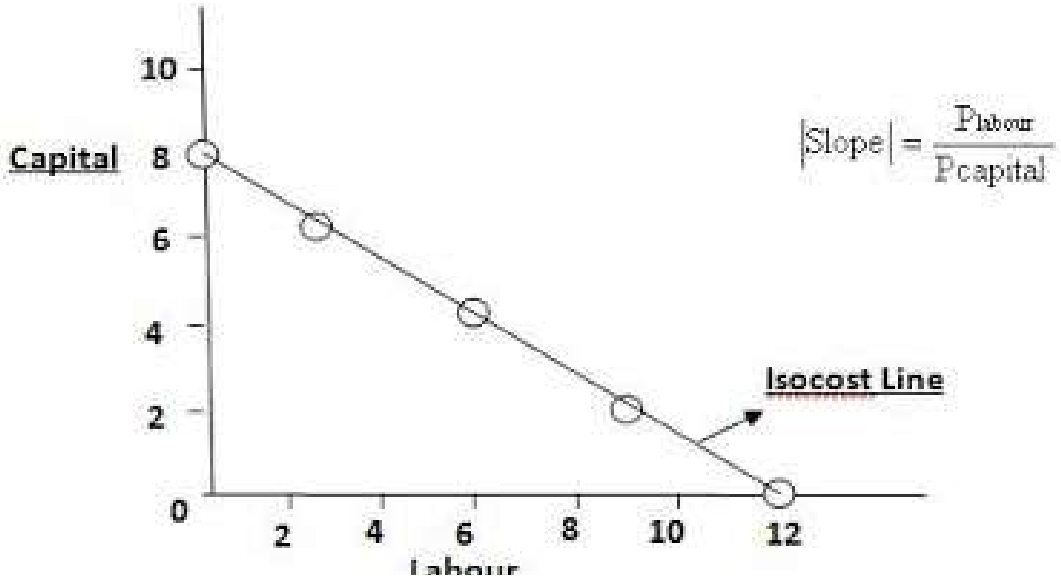
The isocost line is an important component when analyzing producer's behavior. The isocost line illustrates all the possible combinations of two factors that can be used at given costs and for a given producer's budget. In simple words, an isocost line represents a combination of inputs which all cost the same amount.

isocost line is the locus of all those combinations of labour and capital which, given the prices of labour and capital, could be bought for a given amount of money.

The slope of the isocost line is equal to the ratio of the factor prices, that is, the slope of isocost line.

Now suppose that a producer has a total budget of (Rs)120 and and for producing a certain level of output, he has to spend this amount on 2 factors A and B. Price of factors A and B are(Rs) 15 and (Rs)10 respectively.

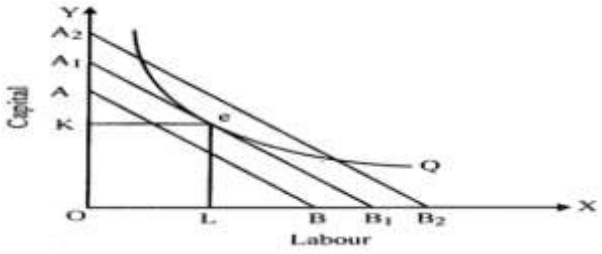
Combinations	**Units of Capital**	**Units of Labour**	**Total expenditure**
	Price = 15(Rs)	**Price = 10(Rs)**	**(in Rs)**
A	**8**	**0**	**120**
B	**6**	**3**	**120**
C	**4**	**6**	**120**
D	**2**	**9**	**120**
E	**0**	**12**	**120**



Wage (W) is the price a firm has to pay for labor and rent (r) is the price it has to pay for capital. The slope of an isocost line represents the cost of one factor of production in terms of the other.

5.Least Cost combination of Inputs

Every firm aims at producing the output with the minimum cost. The single isoquant Q denotes the desired level of output to be produced. There is a family of isocost lines AB, within the range of input combination for the Isoquant.



The firm minimizes its cost at the point ‘e’ where the isoquant Q is tangent to the isocost line AB. The optimal combination of factors is OK and OL. The optimal combination takes place at the point ‘e’ where the given output can be produced at the least cost. At the point of tangency, that is, at point 'e', the slope of isocost line is equal to the slope of the isoquant.

MPL/MPK=PL/PK

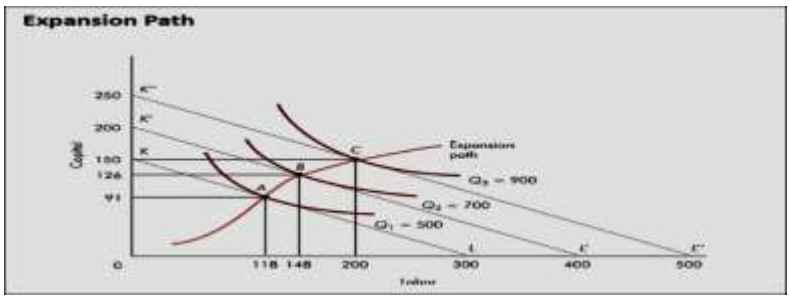
Rewriting the equation we get

MPL/PL=MPK/PK

Where MPL/PL is the extra output obtained from an additional dollar spent on Labour and
MPK/PK is the extra output obtained from an additional dollar spent on Capital
When the extra output obtained from the last dollar spent on L> The extra output obtained fromthe last dollar spent on K the firm gets a bigger bang from the last dollar spent on L.In thissituation firm should hire more of Labour and less of K. This substitution can be continued as long dollar spent in K and in L produce the same output. ie.,MPL/PL=MPK/PK

- **Expansion path**

The expansion path is locus of all input combinations for which the MRTS is equal to the factor price ratio.
•The locus of all such points of tangencies between the Isoquant and the parallel Isocost lines is the expansion path for the firm. Expansion path gives the efficient (least-cost) input combinations for every level of output.
•Along expansion path, input-price ratio is constant & equal to the marginal rate of technical substitution



6.The laws of Returns to Scale

The law of returns to scale describes the relationship between outputs and the scale of inputs in the long-run when all the inputs are increased in the same proportion.

According to the Roger Miller, the law of returns to scale refers "to the relationship between the changes in output and proportionate change in all factors of production". The firm increases its scale of production by using more space, more machines and labourers (as a input) in the factory, to meet a long-run change in demand.

Assumptions

- All factors (inputs) are variable
- Technological changes are absent.
- The product is measured in quantities.

Three different cases

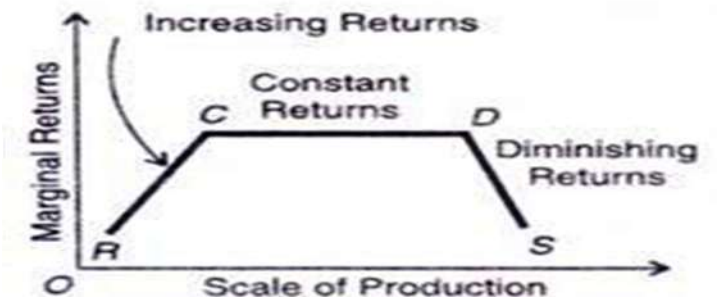
I. Increasing returns to scale (Output goes up proportionately more than the increase in input usage)

II Constant returns to scale (Output goes up by the same proportion as the increase in input usage)

III Decreasing returns to scale. (Output goes up proportionately less than the increase in input usage)

Applications of the Law

- This law is applicable in all industries, but more in agriculture.
- Identifies Economical Production level -Rationale producer prefers second stage where TP reaches maximum, MP become zero, not negative. and AP decreases.
- Identifies Economical combination of Inputs -Third stage is unfeasible because MP is negative, so no meaning in paying additional wages to labours.



I. Increasing returns to Scale:

This situation occurs if a percentage increases in all inputs results in a greater percentage change in output. For e.g. a 10 % increase in all inputs causes a 20% increase in output.

By increasing its scale, the firm may be able to use new production methods that were infeasible at the smaller scale. For instance, the firm may utilize sophisticated, highly efficient, large-scale factories. It also may find it advantageous to exploit specialization of labour at the large scale. This is shown in the following example.

Inputs (Units)	Output (Units)
2 capital + 2 Labour	200
4 Capital + 4 Labour	500

The table shows that the input is increasing by 100%, on the other hand the output is increased by 150%. This shows the increasing returns to scale. As changes in the output is more than the change in input.

Causes of Increasing Returns to scale

Indivisibilities: Indivisibility means that certain factors are available only in some minimum sizes. Certain inputs particularly machinery, management etc. are available in large and lumpy units. Such inputs cannot be divided into small sizes to suit the small scale of production. For e.g. there cannot be half a machine, half a computer or half a manager. Such inputs have to be employed even if the scale of production is small. Therefore, as the scale of production increases, these indivisible factors are utilized better and more efficiently. This leads to increasing returns to scale.

Greater Specialization: As the scale of production increases, the efficiency of labour increases due to division of labour and specialization of labour. Similarly, when the scale of production increases, it becomes possible to use specilaised machines and the services of specialized and expert management.

II Constant returns to Scale

Constant returns to Scale: It occurs if a given percentage change in all inputs results in an equal percentage in output. For instance, if all inputs are doubled, output also doubles; a 10% increase in inputs would imply a 10% increase in output; and so on.

Inputs (Units)	Output (Units)
2 capital + 2 Labour	200
4 Capital + 4 Labour	400

The above example shows that as the inputs (i.e. labour and capital) increased to 100%, output also increased to 100%.

Causes of constant Returns to scale

• Limits of Economies of scale: Increasing returns to Scale cannot go on indefinitely. There is a limit to these economies of scale When the economies of scale are exhausted, and diseconomies are yet to start, there may be a briefs phase of constant returns to scale.

III Decreasing Returns to scale:

It occurs if a given percentage increase in all inputs results in a smaller percentage increase in output. The most common explanation for decreasing Returns involves organization factors in very large firms. As the scale of firms increases, the difficulties in Coordinating and monitoring the many management functions.

Inputs (Units)	Output (Units)
2 capital + 2 Labour	200
4 capital + 4 Labour	300

The above shows, that inputs ate increases to 100% but the increase output is 50%, which shows that there is decreasing returns to scale.

Causes of Decreasing Returns to scale.

•Complexity of management: Increase in the scale of production on beyond a point may create the problem of proper management, leading to a decrease in managerial efficiency. Large scale of production creates the problem of lack of proper, larger bureaucracy, lengthy Chain of Communication and command between the top management and men on the production line. As a consequence of all these, the overall efficiency of management decreases.

•Increase diseconomies in marketing at very large level of production and Sales.

7.Cost Analysis

production function tells us how much output a firm can produce with its existing plant and equipment. The level of output depends on prices and costs. The most desirable rate of output is the one that maximizes total profit that is the difference between total revenue and total cost.

Entrepreneurs pay for the input factors- Wages for labour, price for raw material, rent for building hired, interest for borrowed money. All these costs are included in the cost of production. The economist's concept of cost of production is different from accounting.

7.1 Types Of Costs

There are various classifications of costs based on the nature and the purpose of calculation. But in

economics and for accounting purpose the following are the important cost concepts.

Actual cost/ Outlay cost/ Absolute cost / Accounting cost: The cost or expenditure which a firm

incurs for producing or acquiring a good or service. (Eg. Raw material cost)

Opportunity cost: The revenue which could have been earned by employing that good or service in

some other alternative uses. (Eg. A land owned by the firm does not pay rent. Thus a rent is an

income forgone by not letting it out)

Explicit cost: Cost actually paid by the firm. If the factors of production are hired or rented then it is

an explicit cost.

Implicit cost: If the factors of production are owned by a firm then its cost is implicit cost.

Fixed cost: Some inputs are used over a period of time for producing more than one batch of goods.

The costs incurred in these are called fixed cost. For example amount spent on purchase of

equipment, machinery, land and building.

Variable cost: When output has increased the firm spends more on these items. For example the

money spent on labour wages, raw material and electricity usage. Variable costs vary according to the output. In the long run all costs become variable.

7.2 COST FUNCTIONS: SHORT-RUN AND LONG-RUN

The relationship between product and costs is known as the cost function

Short Run Costs

Short run costs are accumulated in real time throughout the production process. Fixed costs have no impact of short run costs, only variable costs and revenues affect the short run production.

Variable costs change with the output. Examples of variable costs include employee wages and costs of raw materials. The short run costs increase or decrease based on variable cost as well as the rate of production. If a firm manages its short run costs well over time, it will be more likely to succeed in reaching the desired long run costs and goals.

Long Run Costs

Long run costs are accumulated when firms change production levels over time in response to expected economic profits or losses. In the long run there are no fixed factors of production. The land, labor, capital goods, and entrepreneurship all vary to reach the the long run cost of producing a good or service. The long run is a planning and implementation stage for producers. They analyze the current and projected state of the market in order to make production decisions. Efficient long run costs are sustained when the combination of outputs that a firm produces results in the desired quantity of the goods at the lowest possible cost. Examples of long run decisions that impact a firm's costs include changing the quantity of production, decreasing or expanding a company, and entering or leaving a market.

Differences

The main difference between long run and short run costs is that there are no fixed factors in the long run; there are both fixed and variable factors in the short run. In the long run the general price level, contractual wages, and expectations adjust fully to the state of the economy. In the short run these variables do not always adjust due to the condensed time period. In order to be successful a firm must set realistic long run cost expectations. How the short run costs are handled determines whether the firm will meet its future production and financial goals.

The relationship between short-run and long-run cost

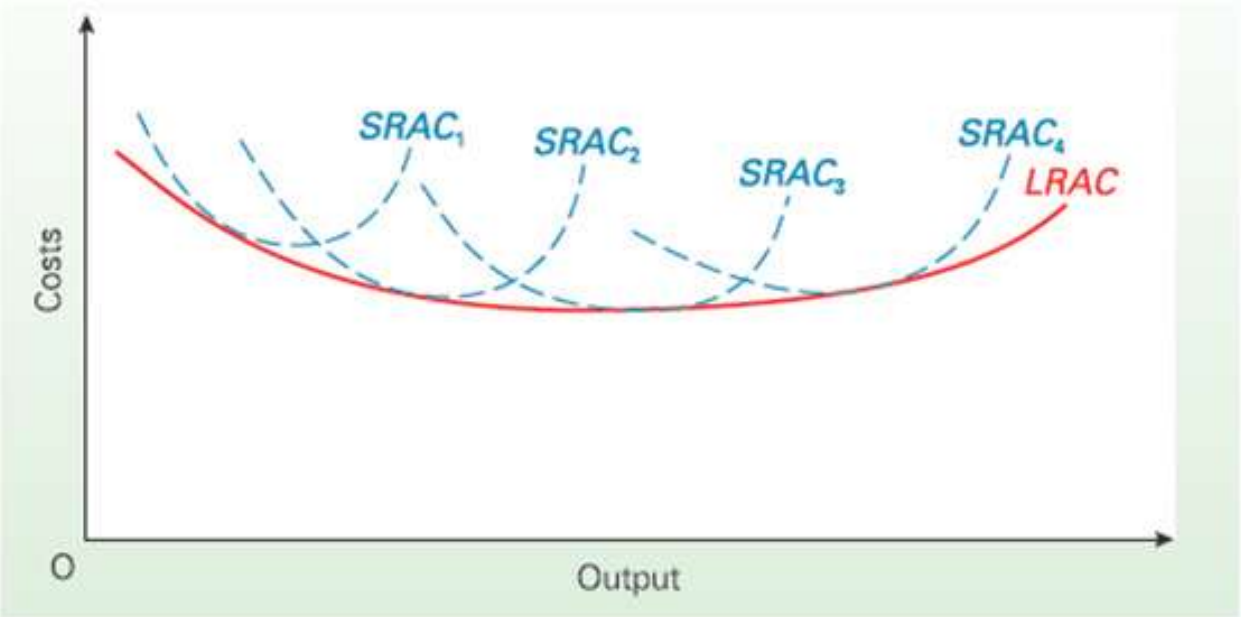
The relationship between short-run and long-run cost curves is that the long-run average cost curve is a lower boundary of the short-run cost curves. In other words, the long-run average cost is usually lower than the short-run average cost.

Here are some other details about the relationship between short-run and long-run cost curves:

Fixed assets In the short run, fixed assets are held constant, while in the long run, all costs are variable.

Shape: Both the short-run and long-run cost curves are U-shaped, with the minimum point at the optimal scale of production.
Slopes: The long-run cost curve is downward-sloping, while the short-run cost curve can be either upward- or downward-sloping.

Tangency: Each short-run Average cost (SRAC) curve can be tangent to the long-run Average cost (LRAC) curve at only one point.
Optimal production level: The optimal production level is where the average cost in the long-run curve is at its lowest, and the short-run curve touches it.



8.Break-Even Analysis

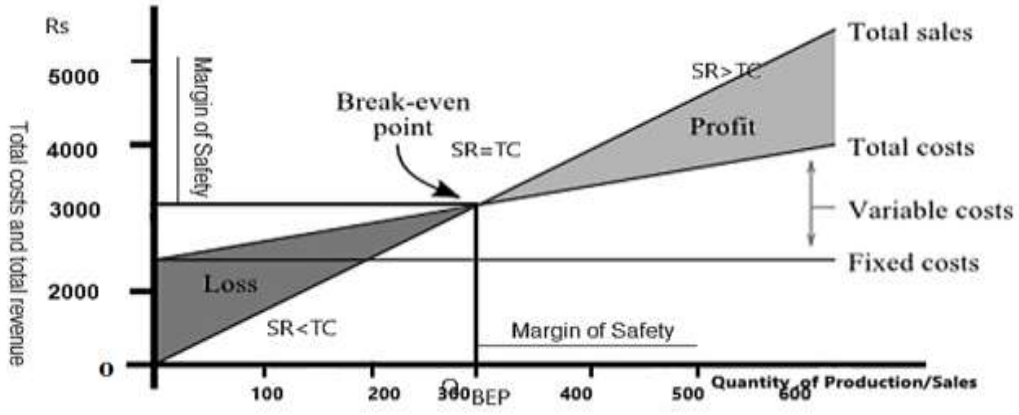
Break –Even analysis is a technique of determining the level production or sale where a firm gets neither Profit nor Loss. This technique widely used to study the relationship between Costs , Volume (Quantity of production or sales) and Profit of a Business.

Assumptions of Break –Even analysis

Break-Even Point is determined under the following assumptions

1. Total Costs are Divided into Total Fixed Costs and Total Variable costs
2. Total Fixed costs remain constant with any level of production/sales.
3. Total variable costs change with production level but Variable cost per unit remain constant.
4. Selling Price of the product remain constant with every level of sales.
5. Perfect Synchronization between Production quantity and sales quantityie., There will be no closing and Opening stocks.
6. Only one product in the entire production. In case of Multi products, Proportion of the Product Mix remain same with the changed level production.
7. Efficiency of the firm remain same with every level of production.

Graphical Method of determining Break Even point



Equation Method of determining Break Even point

Break-Even Point can be identified with help of the following sales revenue equation

Sales Revenue (SR)= Total Costs± Profit/Loss

At Break-Even Point Profit/Loss = 0

∴SR= TC

⇒ SR=TFC+TVC

Rewriting the above equation (Sales Revenue(SR) depends on Selling Price(SP) and Quantity (Q) and TVC depends on Variable cost per unit (VC) and Quantity (Q))

SP×Q=TFC+VC×Q

Q(SP-VC)=TFC

$$Q = \frac{TFC}{SP - VC}$$

Where Q= Break Even Quantity, TFC= Total Fixed Costs, SP= Selling Price per Unit

VC= Variable Cost per Unit

Managerial Significance or Applications of Break Even analysis

1. It identifies Minimum Level production or Sales to be undertaken by the Firm to avoid Losses.
2. It identifies required Sales or Production to earn desired profits
3. It identifies Impact of Change in Variable cost, Fixed cost and selling Price on Profitability of the business.
4. It Identifies most profitable Products for the business.
5. It facilitates Decision making related to Add or Drop of Products to the Product Line

Limitations of Break-Even Analysis

1. Break-Even Analysis is based on various assumptions which are not realistic.

2. It can be only used for planning of Production/Sales Level and it does not provide solutions to the problems of Production/Sales.

BEP Problems and Solutions

1. A Company produces a single Product. Following cost data is given about itsproduct:

Selling price per unit Rs.40
Variable cost per unit Rs.24
Fixed cost per annum Rs. 16000
Calculate:

(a)BEP Units(b)P/V ratio (c) break even sales(Rs) (d) sales to earn a profit of Rs. 2,000 (e) Profit
at sales of Rs. 60,000

Solution:

(a)BEP **(Units)**

$$Q = \frac{TFC}{SP - VC}$$

$$= \frac{16000}{40 - 24}$$

=1000 Units

b) P/V Ratio = (SP-VC)/SP×100

= (40-24)/40 x 100 = 16/40 x 100
=40%

(c) Break even sales (Rs)

= TFC/ P/V Ratio
= 16,000 x 100 / 40 = 40,000

(d) The sales required to earn a profit of 2,000(Rs)

TFC+ Desired Profit/P/V Ratio
= 16000 + 2000/40%
= 18,000 x 100/40
=45,000 (Rs)

(e)Profit at sales of 60,000(Rs)

Sales x P/V Ratio = TFC + Profit

Putting this values: Rs. 60,000 x 40/100 = 16000 + P

24,000 = 16000 + Profit

24,000 – 16,000 = Profit

Profit = 8,000(Rs)

1. From the following Data Findout

i) P/V Ratio

ii) Total Fixed Costs

iii) BEP(Rs)

iv) Margin of Safety in Year 2017

Year	2016	2017
Sales(Rs)	200000	300000
Profit(Rs)	30000	50000

Solution:

i) P/V Ratio = (Δ Profit/ΔSales)×100

Δ Profit=50000-30000= 20000

Δ Sales= 300000-20000 =100000

P/V Ratio= (20000/100000)×100

= 20%

ii) We Know that P/V Ratio= TFC + Profit/Sales OR TFC =(Sales×P/V Ratio)-Profit

In the year 2016

TFC=(200000×20/100)-30000

= 10000(Rs)

iii) BEP(Rs)=TFC/P/V Ratio

=10000/20/100

=10000×100/20

=50000(Rs)

iv) Margin of Safety (Rs) =Actual Sales (Rs)-Break-Even sales (Rs) OR Profit/P/V Ratio

=300000-50000

=250000(Rs)

OR

=50000/20%

=250000(Rs)

3. From the following information find out:

a. P/V Ratio

b. Sales &

c. Margin of Safety

Fixed Cost = Rs.40, 000

Profit = Rs. 20,000

B.E.P. = Rs. 80,000

Solution:

a. P/V Ratio.

We know that SR – TVC = TFC + Profit

P/V Ratio= SR-TVC/SR or TFC +Profit/SR

BEP(Rs) x P/V Ratio = TFC (Value of P is zero at BE Sales) OR P/V Ratio = TFC/BEP(Rs)

Putting the value,

P/V Ratio = 40,000/80,000 = 50/100 OR 50%

b. Actual Sales.

We know that Sales x P/V Ratio = TFC+ Profit

OR Sales = TFC+ Profit /P/V Ratio

So, = (40,000 + 20,000)/50/100

= (60,000 x 100)/50

=Rs.1, 20,000

c. Margin of Safety.

Margin of Safety = Actual Sales – B.E.P Sales

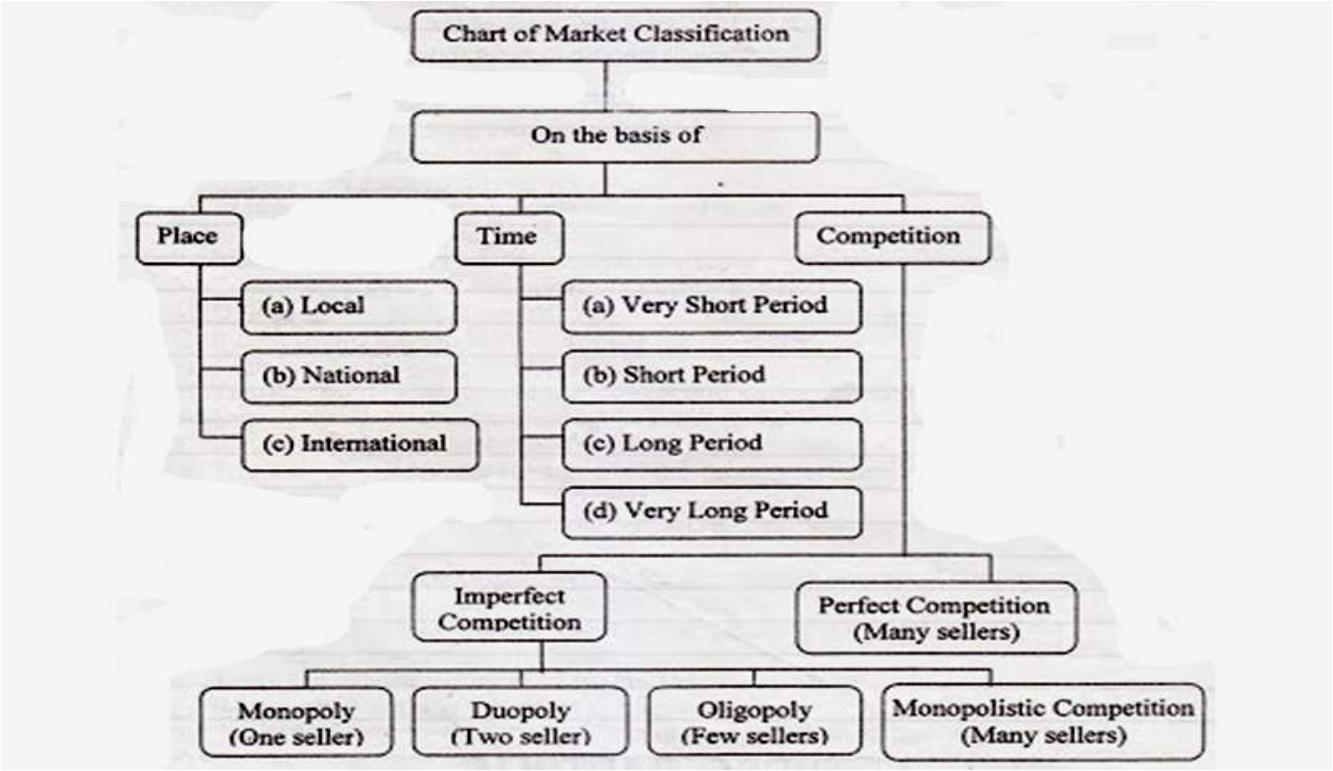
So, MOS = 1, 20,000 – 80,000

MOS =(Rs)40, 000

9. Market Meaning, Types or Classification of Market

In general, Market means a place where buyer and seller meets together in order to carry on transactions of goods and services.

But in Economics, it may be a place, perhaps may not be. In Economics, market can exist even without direct contact of buyer and seller. Therefore Market refers to the set of conditions in which buyers and sellers come in contact with each other directly or indirectly, to buy or sell goods.



Market Structure

Definition: The Market Structure refers to the characteristics of the market either organizational or competitive, that describes the nature of competition and the pricing policy followed in the market

The major determinants of the market structure are:

- The number of sellers operating in the market.
- The number of buyers in the market.
- The nature of goods and services offered by the firms.
- Price fixation power
- The entry and exit barriers in a particular market.

10.Perfect Competition

Perfect competition refers to a market structure in which the number of buyers and sellers are very large, all are engaged in buying and selling a homogeneous product without any entry restrictions and all sellers are the price takers.

Features of Perfect competition

1. Large number sellers: In this market there are large number sellers, so that no seller can influence the price. Influence of an individual seller is absolutely insignificant. They will have to accept the price established in the market. A single seller cannot increase the price. If he increases, he will have no buyers for the product.
2. large number of buyers: buyers are in a large number, so that individually no buyer is in a position to influence the price. They will have to accept the price established in the market. The buyers cannot bargain for a lower price, as there are enough buyers at the prevailing price.
3. Homogeneous commodity: A commodity sold in the market is homogeneous, that is, identical in quality and size. A difference of any type would provide an excuse for the seller to charge a higher price. When goods are homogeneous there is no possibility of charging a higher price by any seller under the pretext of qualitative or quantitative differences.
4. Every firm/seller isa price taker – No seller have power to set the price in the market. Each seller contribute less or negligible quantity for the market supply.
5. Free Entry and Exit: There is no restriction on any producer to produce a commodity and sell it in the market. The firms are free to enter or exit the market. New firms enter the industry when excess profits are earned by the industry. Some firms may leave when loss is sustained by the industry.
6. Complete market information: This condition implies close contact between buyers and sellers. Both of them possess complete knowledge about the prices at which goods are being bought and sold, and the prices at which others are prepared to buy or sell. They have perfect knowledge of the place where the transactions are being carried on. This condition forces the sellers to sell the product at the prevailing market price and buyers to buy at that price.

7. Perfect mobility of factors of production: Factors are assumed to be freely mobile. Every firm can access the required quantity of production factors irrespective of size of their firm.
8. No transport cost: From the place of production to the market factors of production and goods are transported without any cost. This condition is essential for the existence of perfect competition which requires that a commodity must have the same price everywhere at any time. If transport costs are added to the price of the product, even a homogeneous commodity will have different prices depending upon transport costs from the place of supply.
9. No intervention of Government: Price in the market and output of the firms do not influenced by government policies.

11.Monopoly Market Structure

The word monopoly has been derived from the combination of two words i.e., 'Mono' and 'Poly'. Mono refers to a single and poly to seller.

Monopoly is a market situation in which there is a single seller. There are no close substitutes of the commodity it produces, there are barriers to entry". -Koutsoyiannis

In this way, monopoly refers to a market situation in which there is only one seller of a commodity.

CHARACTERISTICS OF MONOPOLY

The following are the major features of the monopoly market:

1. Single seller of the product: In a monopoly market, there is only one firm producing or supplying a product. This single firmrm constitutes the industry and as such there is no distinction between firm and industry in a monopolistic market. Monopoly is characterized by an absence of competition.
2. No close-substitutes: A monopoly firm has full control over the market supply of a product or service.
3. A monopolist is a price maker and not a price taker. The monopolist generally sells a product which has no close substitutes.
4. Barriers to Entry: In a monopolistic market, there are strong barriers to entry. The barriers to entry could be economic, institutional, legal and Technical.

5. Price Discrimination: The practice on the part of the monopolist to sell the identical goods at the same time to different buyers at different prices

Reasons of monopoly creation.

The fundamental cause of monopoly is barriers to entry; in effect other firms cannot enter the market. A few reasons for occurrence and continuation of monopoly are:

1) Strategic control over a scarce resources, inputs or technology by a single firm limiting the access of other firms to these resources.

2) Through developing or acquiring control over a unique product that is difficult or costly for other companies to copy.

3) Governments granting exclusive rights to produce and sell a good or a service.

4) Patents and copyrights given by the government to protect intellectual property rights and to encourageinnovation.

5) Business combinations or cartels (illegal in most countries) where former competitors cooperate onpricing or market share.

6) Extremely large start-up costs even to enter the market in a modest way and requirement of

extraordinarily costly and sophisticated technical know-how discourage firms from entering the market.

7) Natural monopoly arises when there are very large economies of scale. A single firm can produce theindustry's whole output at a lower unit cost than two or more firms could. It is often wasteful (for consumersand the economy) to have more than one such supplier in a region because of the high costs of duplicatingthe infrastructure. For e.g. telephone service, natural gas supply and electrical power distribution.

Criticism on Monopoly

- Monopoly is often criticized because it reduces aggregate economic welfare through loss of productive and allocative effciency.
- Monopolists charge substantially higher prices and produce lower levels of output than would exist ifthe product were produced by competitive firms.
- Monopoly prices exceed marginal costs and therefore reduces consumer surplus. There is a transfer ofincome from the consumers to the monopolists. Not only that consumers pay higher prices, but theywould also not be able to substitute the good or service with a more reasonably priced alternative.
- Monopoly restricts consumer sovereignty and consumers' opportunities to choose what they desire.

- Monopolists may use unjust means for creating barriers to entry to sustain their monopoly power. Theyoften spend huge amount of money to maintain their monopoly position. This leads increases averagetotal cost of producing a product.
- A monopolist having substantial financial resources is in a powerful position to influence the politicalprocess in order to obtain favourable legislation.
- Very often, monopolists do not have the necessary incentive to introduce ecient innovations thatimprove product quality and reduce production costs.

12.MONOPOLISTIC COMPETITION

It refers to the market situation in which many producers produce goods which are close substitutes of one another. This market features both the markets monopoly and perfect Competition. In fact, this type of market is more common than pure competition or pure monopoly.

Features of Monopolistic Competition

(i) More number of sellers: In a monopolistically competitive market, there are many number of

independent firms who individually have a small share in the market.

(ii) Product dfferentiation: In a monopolistic competitive market, the products of different sellers are differentiated on the basis of brands. Because competing products are close substitutes, demand is relatively elastic, but not perfectly elastic as in perfect competition. Firms use size, design, colour, shape

(iii) Freedom of entry and exit: Barriers to entry are comparatively low and new firms are free to enter themarket and existing firms are free to quit.

(iv)Selling cost: firms need advertisement and sales promotion for their products to attract the customers.

(v) Non-price competition: In a monopolistically competitive market, firms are often face competition with other firms offering a similar product or service, and therefore try to compete on bases other than price, for example: they indulge in aggressive advertising, product development, better distribution arrangements, efficient after-sales service and so on.

13.Comparison of Perfect Competition, Monopoly and Monopolistic Competition

Fetures	Perfect competition	Monopoly	Monopolistic Competition

Number of Sellers and Buyers	Large number of buyers and large number of firms in the industry	Single seller, no differenceBetween firm and industry	Large number of buyers and many number of firms in the industry
Product	Homogenous products which are perfect substitutes	No close substitutes	Differentiated products which are close substitutes, but not perfect substitutes
Entry and Exit Barriers	Free entry and exit	Strong barriers to entry	Free entry and exit
control over price	Price-taker	Price maker	Some control over price
profits	No supernormal profits in the longrun	Supernormal profits both in the short run and long run	No supernormal profits in the longrun
selling costs	No selling costs	Generally low selling costs, only	High Selling cost due to heavy competition

14.Types of Pricing

Pricing is the process by which a business decides on the price at which to sell its products or services.

Types of pricing

1. Cost-plus pricing: Price is fixed by considering Total cost of product and profit margin

2. Competitive pricing: Set a price based on what the competition charges.

3. Price skimming: Set a high price and lower it as the market evolves. Skimming is a type of pricing used by companies that have a significant competitive advantage and which can gain maximum revenue advantage before other competitors begin offering similar products or substitutes. The high price attracts new competitors into the market, and the price inevitably falls due to increased supply.

4. Penetration pricing: Set a low price to enter a competitive market and raise it later. The penetration pricing strategy is used in order to attract more customers and to make the customer switch from current brands existing in the market.

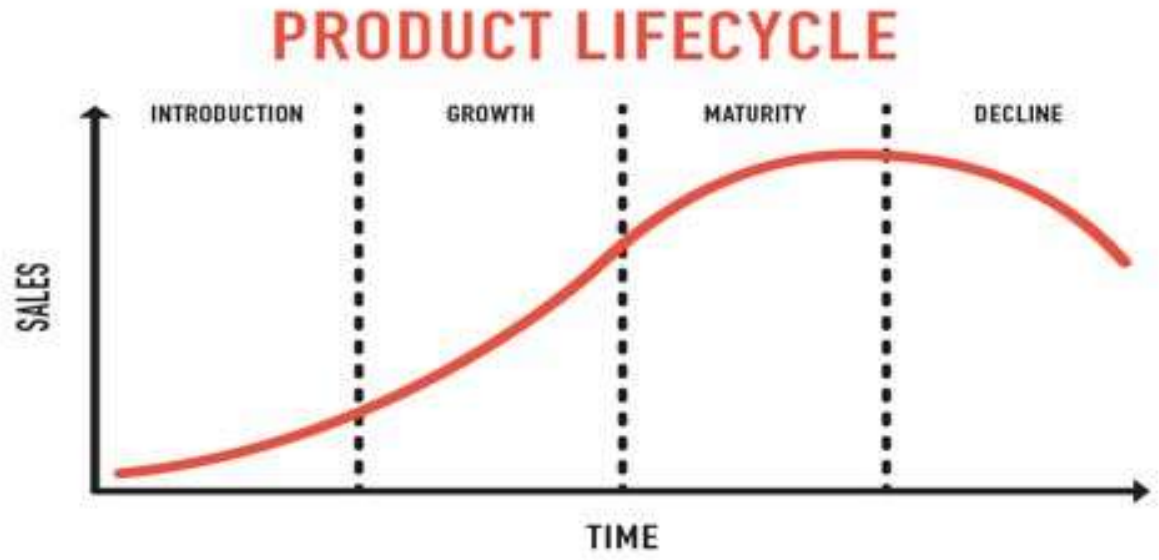
5.Value-based pricing: Price is based on product or service's Price and utility to the customer believes it's worth.

Comparison of various types of **Pricing**

	Pros	Cons
Cost-plus pricing	Time-saving way to price	Does not incorporate the value to the customer
Competitive pricing	Simple: adjusts to competitors' prices Aggressive pricing: good for companies with healthy margins Dismissive pricing: offers market leadership protection	Focuses too much on what others are doing. Lower prices can bring financial trouble if sales volume dips. Ignoring competitors may leave you vulnerable to surprises in the market.
Price skimming	Its early high prices help recoup development costs.	Copycat products can rob later-stage sales potential.
Penetration pricing	Its significantly lower price can motivate customers to switch brands	Price wars and too-low prices can become the norm.
Value-based pricing	A boon to artisanal goods, high-tech products and other unique services.	Not beneficial for all products where differentiation is not a key variable.

15. Life cycle pricing

Life cycle pricing is a strategic approach that adjusts the price of a product or service based on its stage in its life cycle. It's a tool that can help marketers, designers, and management maximize sales and profitability.



Here are some pricing strategies for different stages of a product's life cycle:

- **Introduction**

  Focus on covering development costs and reflecting the product's value. This stage may involve price skimming or penetration pricing.

- **Growth**

  Adjust prices to maximize market share and capitalize on increasing demand.

- **Maturity**

  Maintain market share and profitability. This may involve offering discounts, bundle deals, or other promotions.

- **Decline**

  Manage the product's decreasing popularity. This may include price reductions to clear out inventory or phasing out the product.