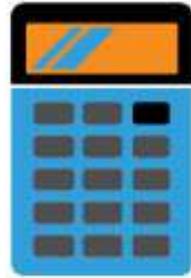


Chapter 1



Introduction

- By paying price goods are available to us
- But who made them available?
- There is a long chain from the producer of good to its retailer.
- Some value is added to the product at every stage and so does the cost too.
- Lots of effort and time by people, technology and money is involved in production.
- This is the cost of making products available to the customer for satisfaction of needs and wants.
- Customer pays price for the product which is revenue for producers.



Revenue Formula = Quantity x Price



costs

```
graph TD; costs --> fixed_costs; costs --> variable_costs; costs --> mixed_costs;
```

fixed costs

variable costs

mixed costs

$$\text{PROFIT} = \text{REVENUE} - \text{COST}$$



TO INCREASE
THIS...



... INCREASE
THIS...



... OR DECREASE
THIS

$$\text{Cost} = f(Q, T, P)$$

Where

F = Function

Q = output

T = Technology

P = Price of Input

TYPES OF COSTS

BASIS OF CLASSIFICATION

NATURE OF EXPENSES

Material, Labour and Other Overhead Cost

RELATION TO COST OBJECT

Direct and Indirect Cost

FUNCTIONS

Production, Admin, Finance, Selling, Distribution, R&D, Quality etc.

BEHAVIOUR

Fixed Cost, Variable Cost and Semi Variable Cost

PURPOSE OF DECISION MAKING

Opportunity Cost, Marginal Cost, Imputed Cost, Relevant Cost etc.

PRODUCTION PROCESS

Batch Cost, Process Cost, Operation Cost, Joint Cost, Prime Cost etc

TIME PERIOD

Historical, Predetermined, Standard and Estimated Cost

Economic and accounting costs

Accounting costs

- The actual (explicit) costs involved in production
- E.g. Mortgage, rent, power, raw materials, wages, etc.

Economic costs

- Accounting cost (explicit) + the opportunity costs (implicit) of the resources used.
- E.g. The rent lost by the owner of a factory whose firm currently uses the building

Particulars	Explicit Cost	Implicit Cost
Meaning	Explicit costs occur when the company pays for the usage of its factors of production.	Implicit costs occur when the company uses resources belonging to the owner such as capital and inventory.
Alternatively known as	Explicit cost is also referred to as out-of-pocket costs	Implicit cost is referred to as imputed or opportunity cost.
Determining Costs	Explicit cost can be determined easily.	Implicit cost does not have track and cannot be determined precisely



Incremental
vs. Sunk cost

- **Incremental Cost**
 - Incremental cost is the change in cost tied to a managerial decision.
 - Incremental cost can involve multiple units of output.
 - Marginal cost involves a single unit of output.
- **Sunk Cost**
 - Irreversible expenses incurred previously.
 - Sunk costs are irrelevant to present decisions.

HISTORICAL COST & REPLACEMENT COST

- **Historical Cost** – cost of an asset. Example – plant and machinery.
- **Replacement Cost** – refers to the price which would have to be paid at present for acquiring the same asset.

PAST COST & FUTURE COST

- **Past Cost** – these are the actual costs incurred in the past and recorded in the books of account.
- **Future Cost**- cost which will take place in the future period of time.



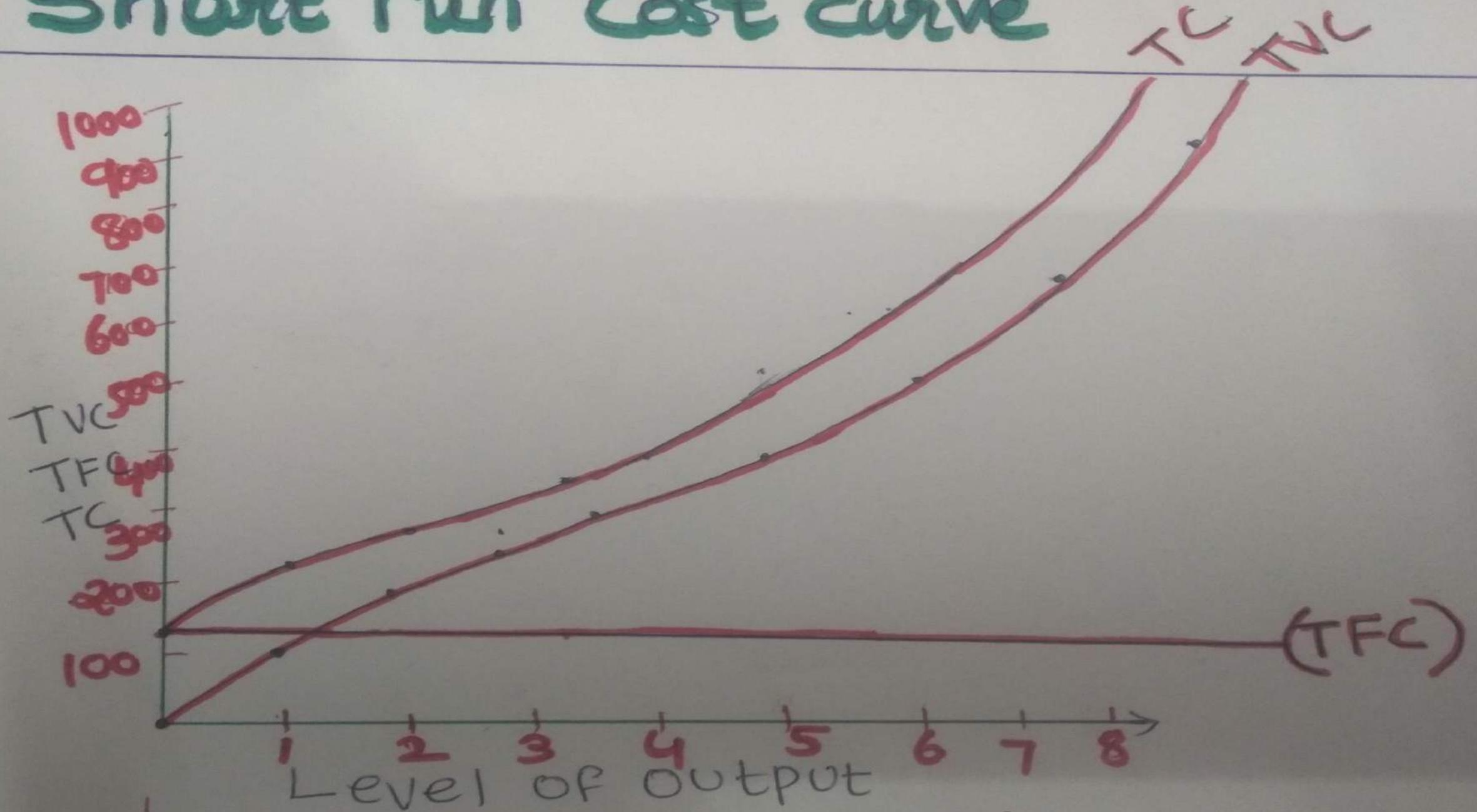
Private and Social Costs

- Private Costs
 - Are paid only by the producer or consumer concerned
 - They are internal costs of production or consumption
- Social Costs
 - $\text{Social Cost} = \text{Private Cost} + \text{External Cost}$
 - Negative externalities add to social costs or reduce social benefits
 - We assume that the consumer and/or producer does not take external costs into account when making decisions
 - This can lead to a misallocation of resources (causing a loss of allocative efficiency)
 - This means that social welfare is not maximized - a cause of market failure

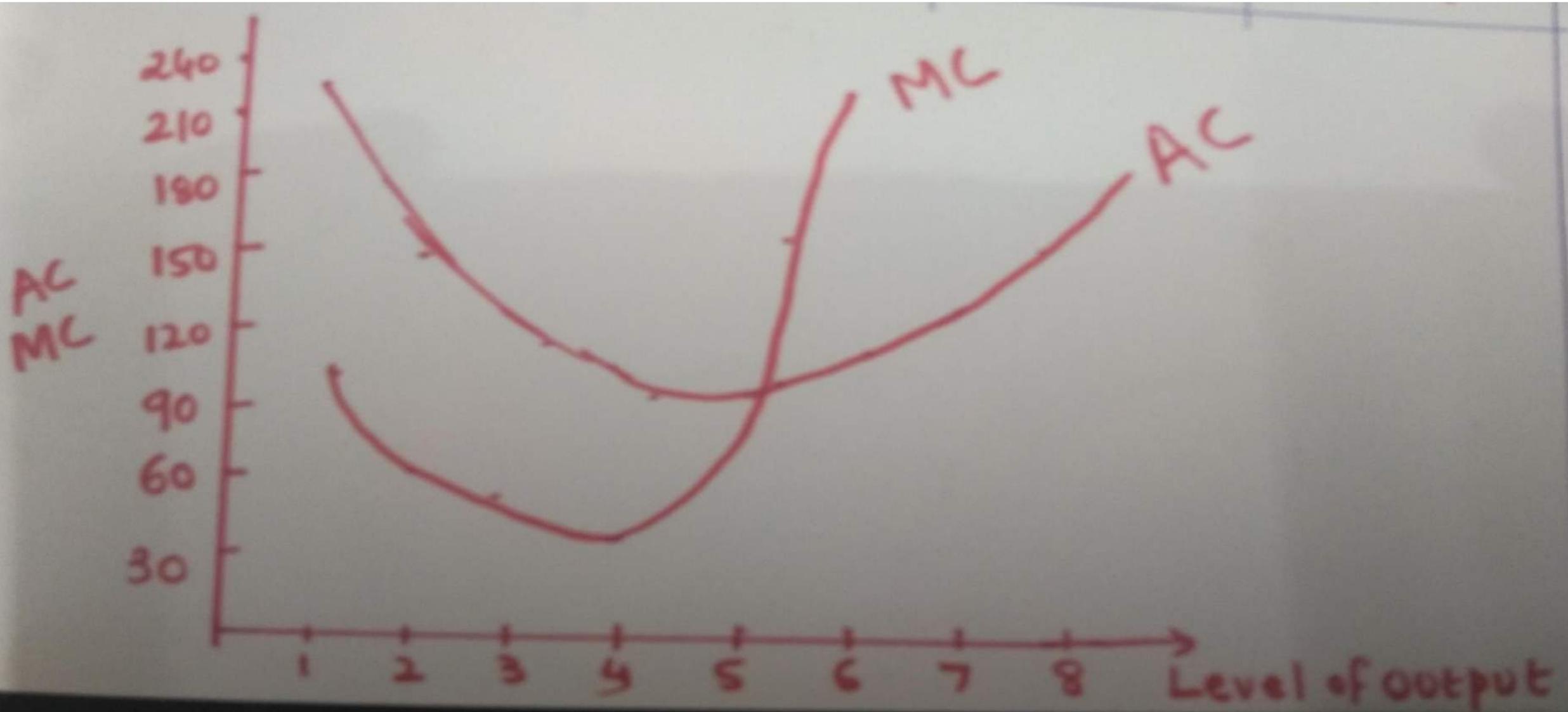
Cost analysis in short run

Units of output	TFC	TVC	TFC + TVC	TC / U_{mit}	$\Delta TVC / \Delta U$
			TC	AC	MC
0	120	0	120	-	-
1	120	100	220	220	100
2	120	160	280	140	60
3	120	210	330	110	50
4	120	240	360	90	30
5	120	400	520	104	160
6	120	540	660	110	140
7	120	700	820	117.14	160
8	120	880	1000	125	270

Short run cost curve



Short run AC and MC curve



Relationship between AC, MC and TC in short run

- One or two factor are variable, rest of the factors are fixed.
- Plant curve
- Duration is less than one or two year
- Relationship of AC, MC and TC
 - TFC is parallel to X axis
 - TVC begin from origin, increase at decreasing rate initially and at one point it will increase at increasing rate
 - When AC falls with an increase in the output, MC is lower than AC.
 - At level of optimum output, AC is minimum and $AC=MC$
 - When AC rises with increase in an output, MC is higher than AC i.e. MC curve lies above the AC curve

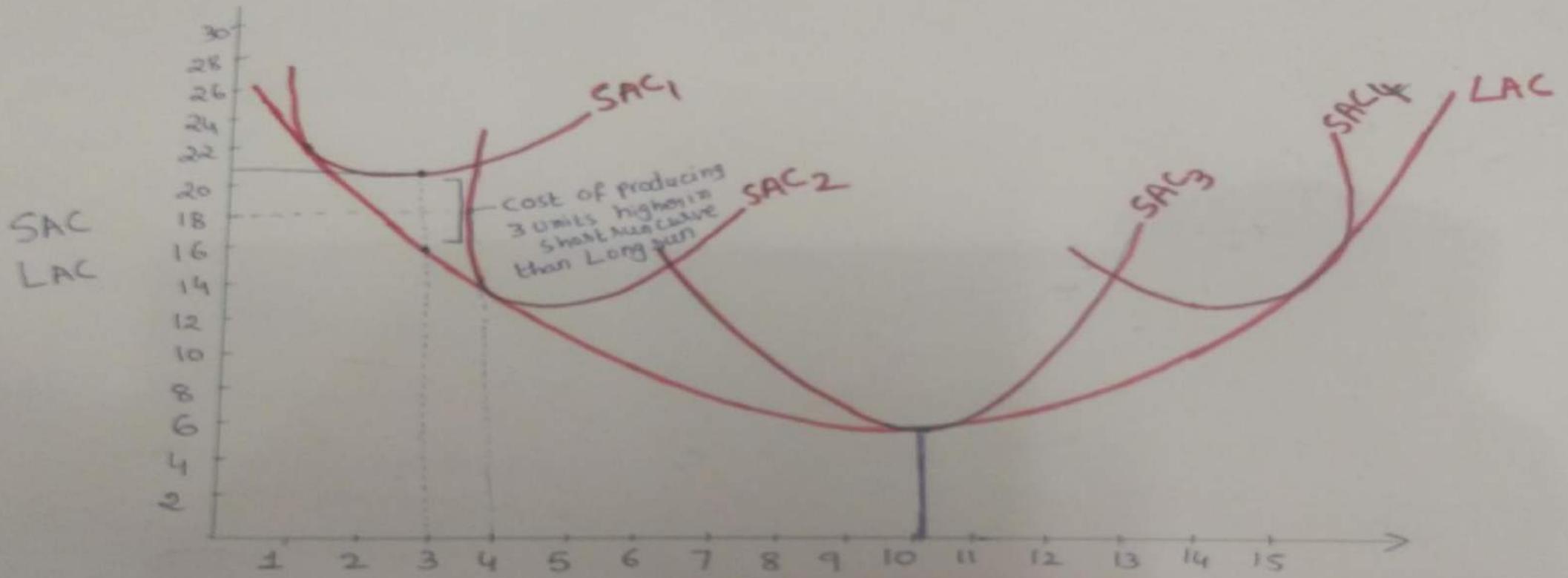
Long run cost analysis

- In the **long run**, no **cost** is fixed. We can determine our production level and adjust plant sizes, investment in capital and labour accordingly. ... When average **cost** is decreasing with each additional investment, we are enjoying economies of scale, but not yet working at maximum efficiency.
- this gives us unlimited options. Depending on the scale we choose to implement, each level of production will be associated to new, [short run cost](#) curves. When we exhaust the infrastructure these provide us, we can upgrade to a new production level and so forth. The actual long run cost curve is made up of all of these individual scenarios, built up year after year.

Cost Analysis in long run

- All factors are variable in long run
- Planning curve
- Duration is more than atleast 2 years
- Long run consists of all possible short run situations among which the entrepreneur choose.
- In the short run the plant size is fixed, in long run firm can move from one plant to another. Firm can go to larger plant if it has to increase its output.
- TC will be lower in the long run with increase in output because of divisibility of work and specialization of work.
- Envelope curve: it supports the family of SAC curve from below

Cost Analysis in long run



(Level of output) in thousand unit

- LAC curve initially slope downwards due to economies of scale
- Average cost can not be higher in the long run than short run.
- Productivity of variable factor high initially

Revenue Analysis



revenue



profit



Revenue

- **revenue** is the income that a business has from its normal business activities, usually from the sale of goods and services to customers. **Revenue** is also referred to as sales or turnover.
- $TR=Q*P$ suppose if company has sold 250 units of shirts for price of rs. 100 per shirt then $TR= 250*100=25000$ Rs.
- $AR= TR/Q = 25000/100=250$
- $P=TR/Q = 25000/100=250$
- If sales increase, TR will also increase

Perfect competition and monopoly

Perfect competition

- Large no. of buyers and sellers
- Homogeneous product
- In perfect competition price is determined by industry by intersection of market demand and market supply. Firm has to sell their product by that price.
- In perfect competition, $AR=MR=P$.

monopoly

- Only one seller and large no. of buyers
- Monopoly firm has control over price
- Unique or different product

MARKET BASED ON COMPETITION

- Perfect Market- Where there is Homogeneous products. Free Entry and exit from market of a firm. Perfect knowledge of market condition, and perfect mobility of factors of production.
- Imperfect- Where perfect competition is not in existence. Number of buyers and sellers are small. No perfect Knowledge of market conditions. There is no single price in this market.



Table 4.1: Features of Four Markets

Type of market	Number of firms	Ease of entry	Nature of the product	Example	Nature of the demand curve for a firm	Promotion strategy
Perfect competition	Innumerable	Unrestricted	Homogeneous	Potato, and other agricultural goods	Horizontal : Price-taker	None
Monopoly	One	Blocked	No substitutes	CESC supplies electricity in and around Kolkata	Downward sloping but more inelastic : Price-maker	None
Monopolistic competition	Many/ Several	Free	Differentiated	Soap, toothbrush of different varieties	Downward sloping but elastic : Price-maker	Large amount
Oligopoly	Few	Restricted	Homogeneous and/or differentiated	Car, wine	Downward sloping and relatively inelastic: Interdependence in price setting	Little or large amount

Revenue Analysis of Perfect competition market

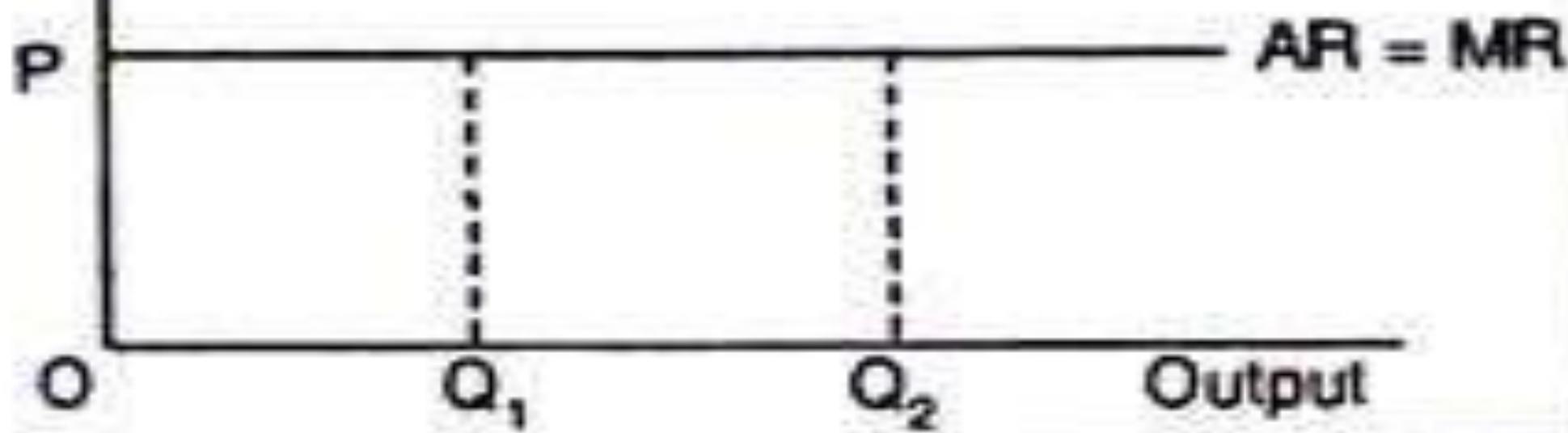
- A firm, under perfect competition, behaves as a '**price-taker**' in the sense that no single firm can influence the price of the product.

Total, Average & Marginal Revenue Schedules of a Firm in a Perfectly Competitive Market

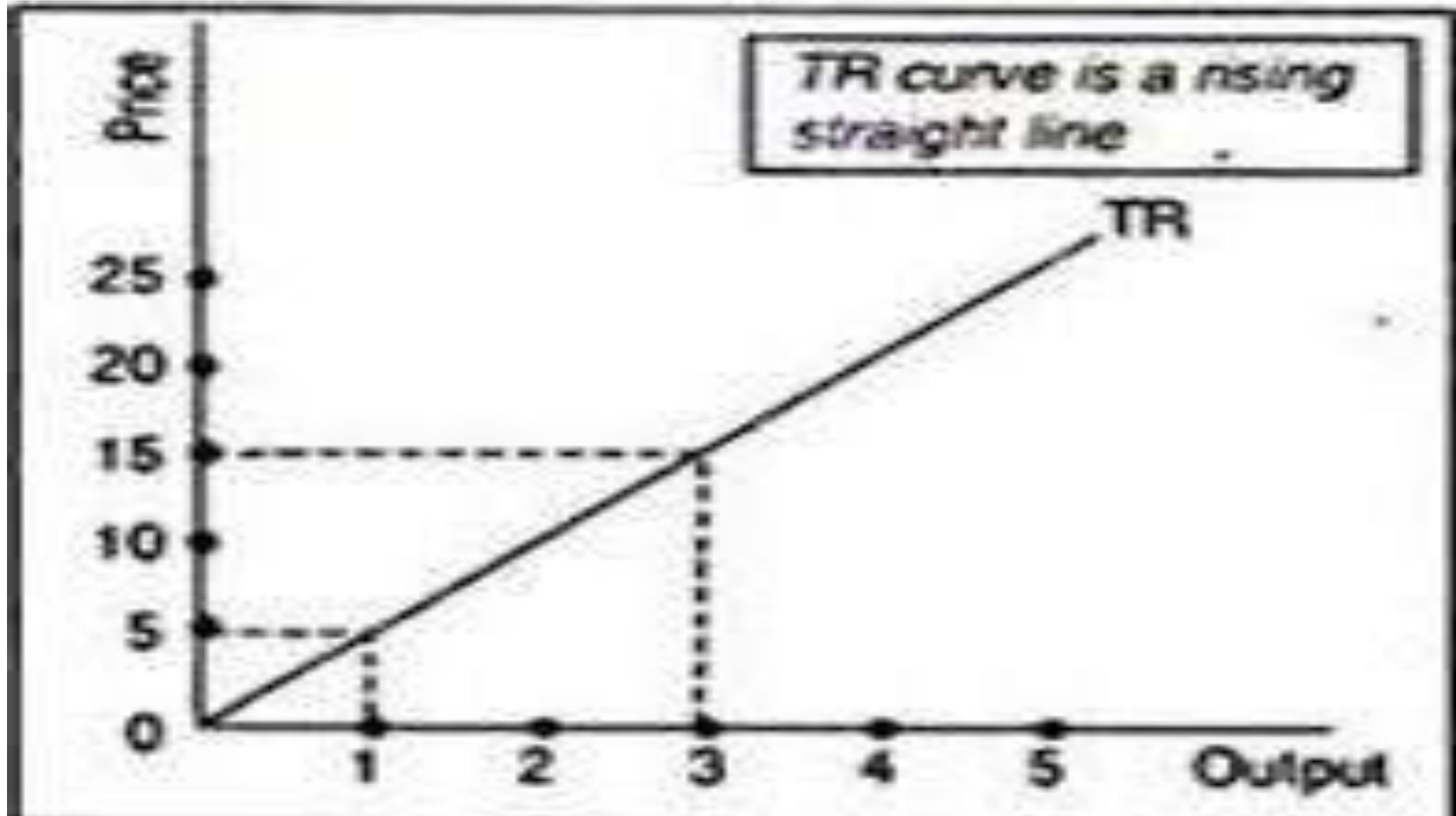
Quantity Sold (units) (1)	Price or Average Revenue (Rs) (2)	Total Revenue (Rs) (3)	Marginal Revenue (Rs) (4)
1	10	10	10
2	10	20	10
3	10	30	10
4	10	40	10
5	10	50	10
6	10	60	10
·	·	·	·
·	·	·	·
·	·	·	·

AR, MR

$P = AR = MR$:
Perfect competition



Perfect Competition



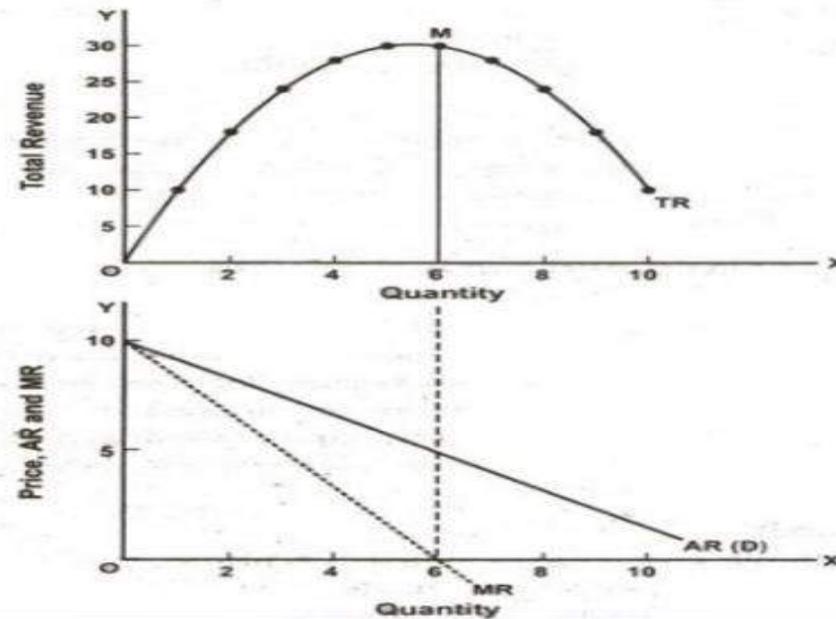
Interrelation between AR, MR and TR under perfect market competition

- **(a) Total Revenue (TR):**
 - Total revenue is the amount of money that a firm receives for the offer of goods and services in the market. A firm's total revenue can be calculated as the quantity of goods sold multiplied by the price. The total revenue includes the product of the quantity sold and the price.
- **(b) Average Revenue (AR):**
 - Average revenue is used as price in a perfectly competitive market. This can be found by the ratio of the firm's total revenue and the number of goods sold.
 - $AR = \text{Total Revenue} / \text{Total Output Sold}$
- **(c) Marginal Revenue (MR):**
 - Marginal revenue refers to the extra money received by selling one more additional unit of the commodity. It is an addition to the total revenue of a firm as new additional units are sold. By selling an additional unit, a firm earns additional revenue that adds to the total revenue and this addition to revenue is called marginal revenue.
 - Under perfect competition, the demand curve facing an individual firm is perfectly elastic and the price is beyond the control of a firm, average revenue remains constant. If the price or average revenue remains the same when extra units of a product are sold, the marginal revenue will be equal to average revenue. This is so because if one extra unit is sold and the price does not fall, addition made to the total revenue by that unit will be equal to the price at which it is sold, because no loss in revenue is incurred on the previous units in this case.

- Interrelationship between AR, MR and TR under imperfect competition
- TR curve at the beginning phase rises at a diminishing rate with the increase in output, at one level of output it will be stagnant which is a highest point of TR where MR will be 0
- AR Curve falls with the rise in output but can never be 0 as $AR=P$ and price can never be zero
- MR curve falls more than AR curve and become 0 when TR is highest. After this point MR will be negative

Output (Q)	AR or Price	TR = AR × Q = P × Q	MR = TR _n - TR _{n-1}
0	-	0	-
1	10	10	10
2	9	18	8
3	8	24	6
4	7	28	4
5	6	30	2
6	5	30	0
7	4	28	-2
8	3	24	-4
9	2	18	-6

TR, AR and MR under monopoly



conclusion

In perfect competition, seller can sell any quantity at a given price. So, in perfect competition, $AR=MR$ and TR increases at a constant rate.

And in imperfect competition,

(i) TR increases at a diminishing rate with the increase in output.

(ii) when TR is maximum, MR becomes zero.

(iii) MR becomes negative, when TR decreases.

(iv) MR falls with the AR.

(v) MR may be positive, negative or zero, but AR is always positive.

Relationship Between Average, Marginal & Total Revenue

Tutor's Tips

When price is constant

1. Sum total of MR corresponds to each unit of output is TR. Thus, $TR = \sum MR$.
2. If AR and Price are constant, MR is also constant.
3. TR will increase at constant rate

When price is not constant

1. When AR is declining, MR is also declining.
2. MR declines faster than AR in monopoly and monopolistic competition.
3. When MR is declining, TR increases at diminishing rate.

Unit2



What is perfect market condition?

Perfect competition is defined as a market situation where there are a large number of sellers of a homogeneous product. An individual firm supplies a very small portion of the total output and is not powerful enough to exert an influence on the market price.

A single buyer, is not in a position to influence the market price. Market price in a perfectly competitive market is determined by the interaction of the forces of market demand and market supply. Market demand means the sum of the quantity demanded by individual buyers at different prices.

Similarly, market supply is the sum of quantity supplied by the individual firms in the industry. Each seller and buyer takes the price as determined. Therefore, in a perfectly competitive market, the main problem for a profit-maximizing firm is not to determine the price of its product but to adjust its output to the market price so that profit is maximized.

Features or characteristic of Perfect competition

- **A perfect market has the following conditions:**
- **1. Free and Perfect Competition:**
- In a perfect market, there are no checks either on the buyers or sellers. They are free to buy or to sell to any person. It means there are no monopolies.
- **2. Cheap and Efficient Transport and Communication:**
- Uniform price for the commodity would not be possible if the changes in the prices are not quickly adjusted or the commodity cannot be quickly transported. Thus cheap and efficient means of transport and communication are must.

Contd....features of perfect competition

- **3. Large number of firms:**

- In this market, a product is produced and sold by large number of firms. Since there are large number of firms, therefore each firm is supplying only a small part of the total supply in the market, thus no one firm has any market power. It implies that no firm can influence the price of the product rather each must accept the price set by the forces of market demand and supply. The firms are price-takers instead of price-makers.

- **4. Large number of buyers:**

- In a perfectly competitive market, there are large numbers of buyers each demanding a small part of the total market supply of the product. As a result, no single buyer is in a position to influence the market price determined by the forces of market demand and supply.

- **5. Homogeneous Product:**

- In a perfectly competitive market, all the firms produce and supply the identical products. It means that the products of all the firms are perfect substitutes of each other. As a result of this, the price elasticity of demand for a firm's product is infinite.

Contd....features of perfect competition

- **6. Free entry and exit of firm:**

- In a perfectly competitive market, there are no restrictions on the entry of new firms into market or on the exit of existing firms from the market.

- **8. Perfect knowledge:**

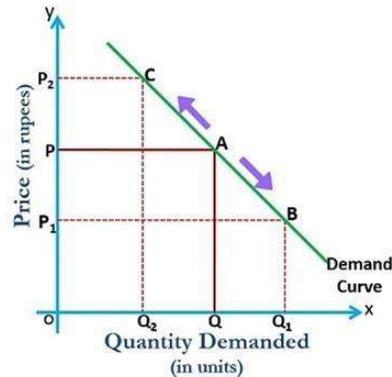
- In a perfectly competitive market, the firms and the buyers possess perfect information about the market. It implies that no buyer or firm is ignorant about the price prevailing in the market.

- **9. Perfect mobility of factors of production:**

- In a perfectly competitive market, the factors of production are completely mobile leading to factor-price equalization throughout the market.

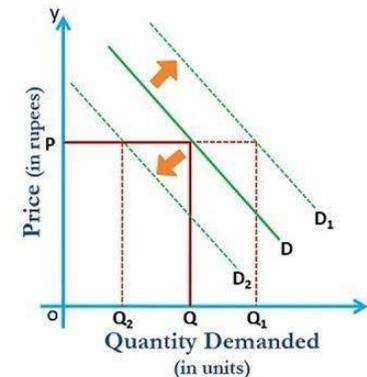
Movement is due to price change and shift in demand curve is due to other factors

Movement



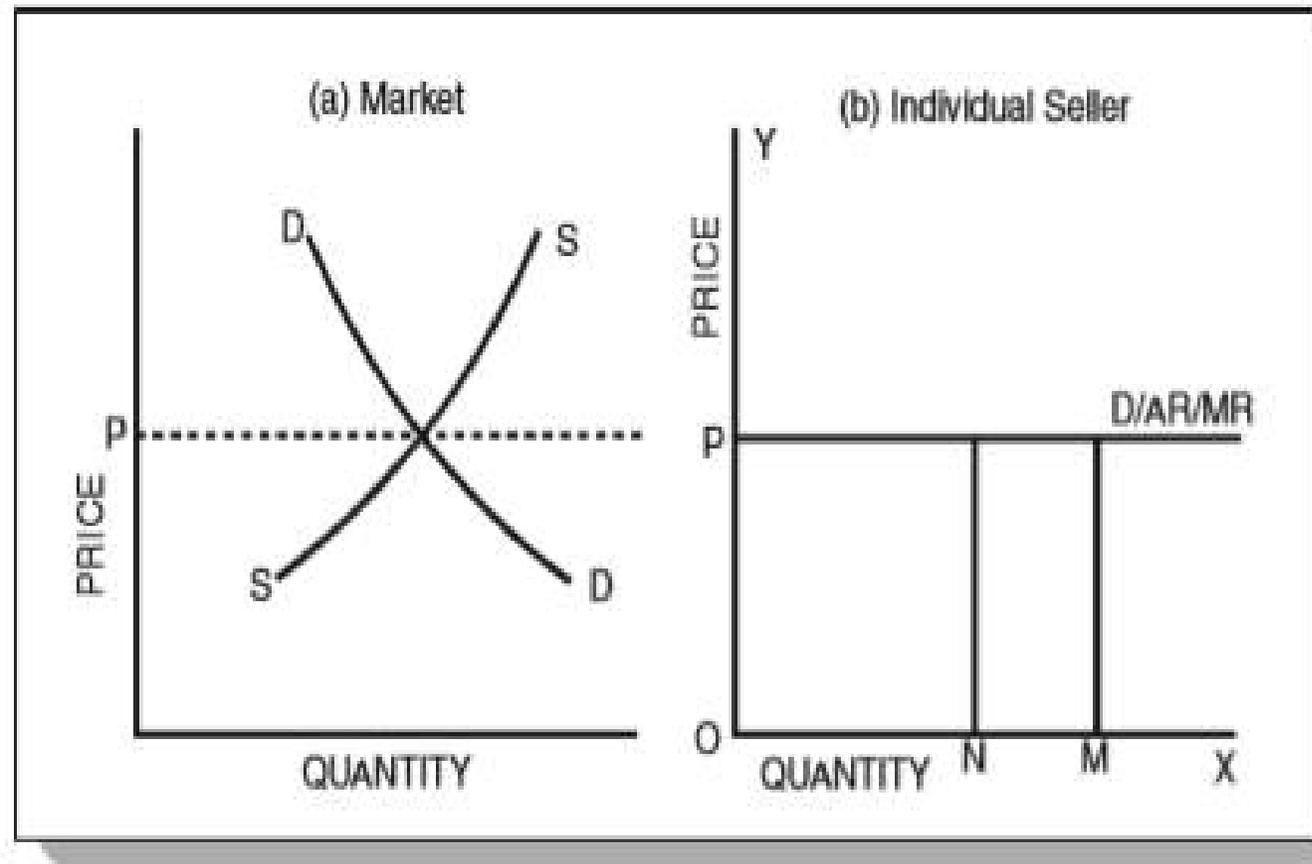
Vs

Shift



In Demand Curve

Price is determined at industry level in perfect competition

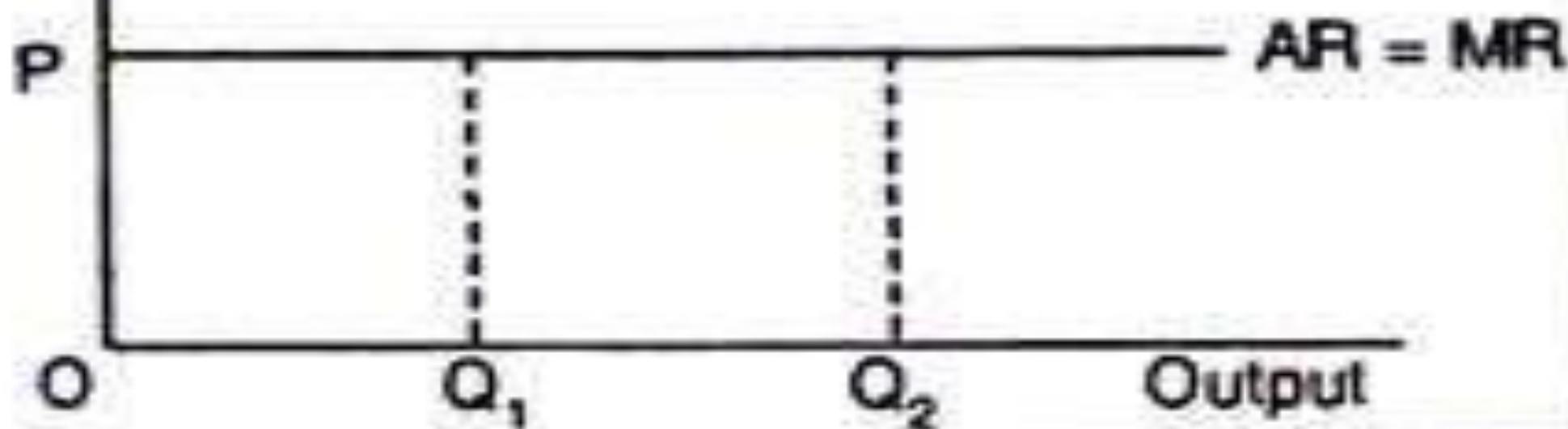


Total, Average & Marginal Revenue Schedules of a Firm in a Perfectly Competitive Market

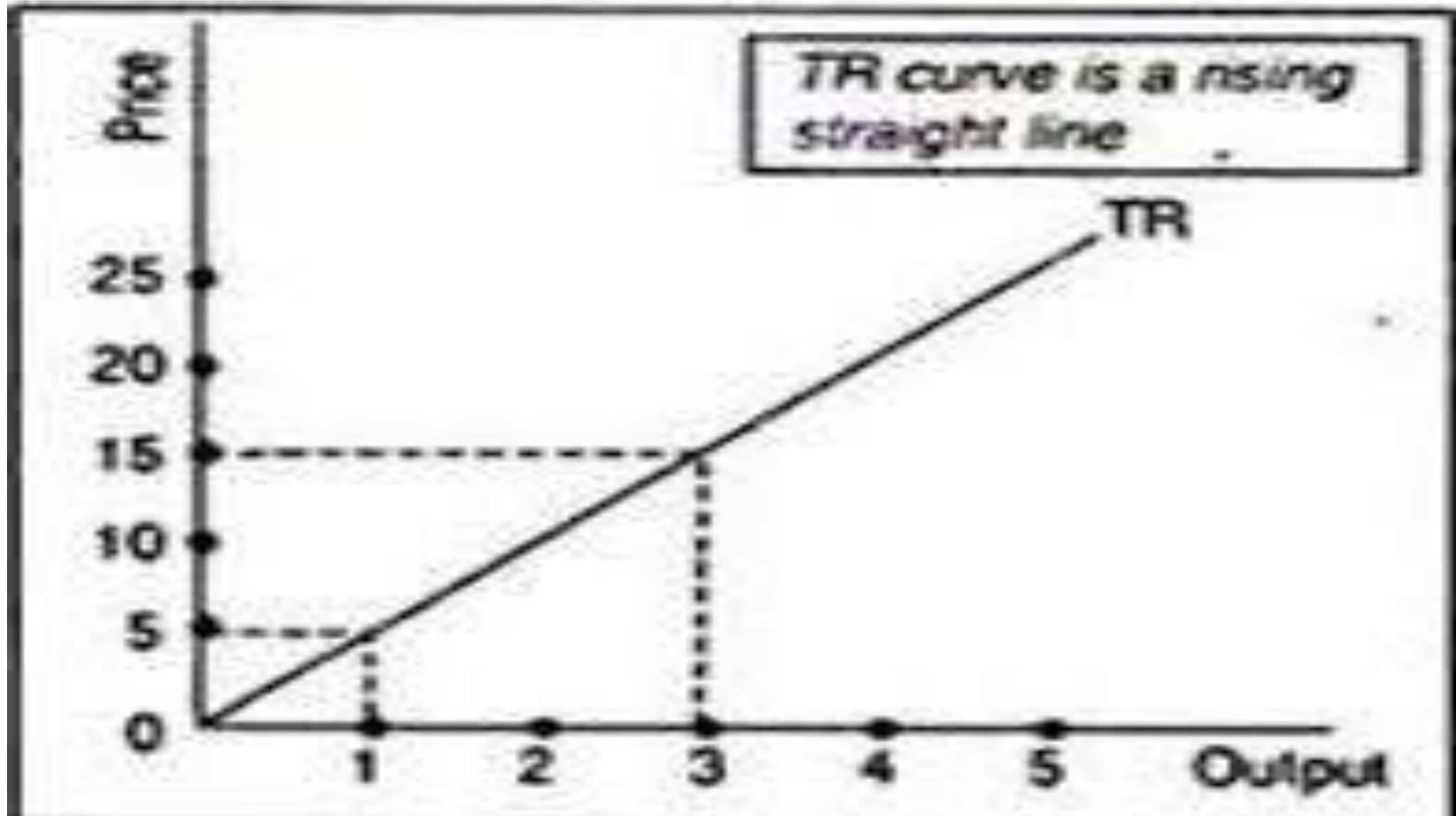
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3	10	30	10
4	10	40	10
5	10	50	10
6	10	60	10
·	·	·	·
·	·	·	·
·	·	·	·

AR, MR

$P = AR = MR$:
Perfect competition



Perfect Competition



Price and output determination under perfect market condition

Short run

- In the short run:
- Firm can earn normal profit
- Firm can earn super normal profit
- Firm can incur losses

Long run

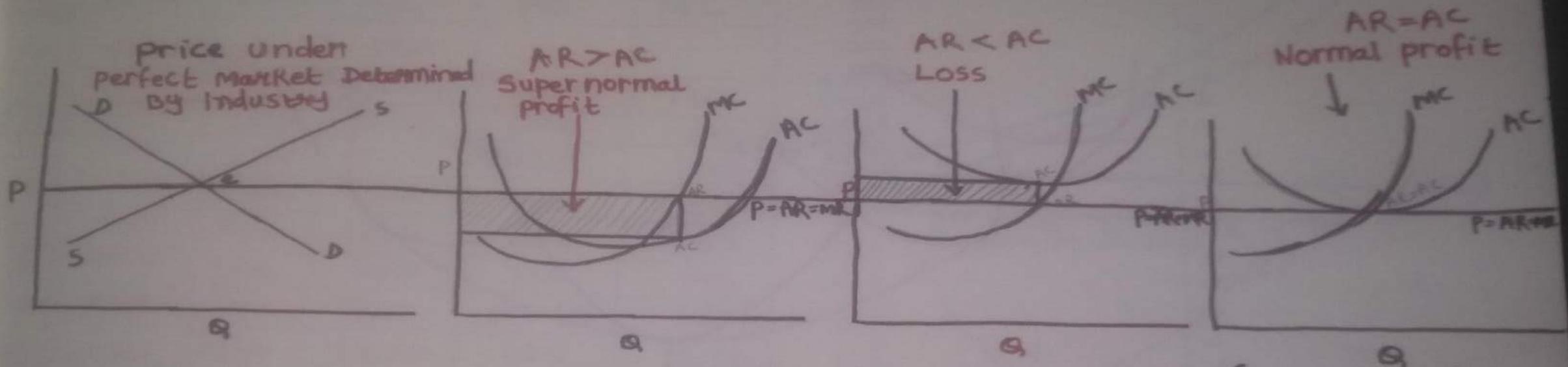
- In the long run:
- Firm will earn normal profit

RULES TO REMEMBER(for perfect market condition)

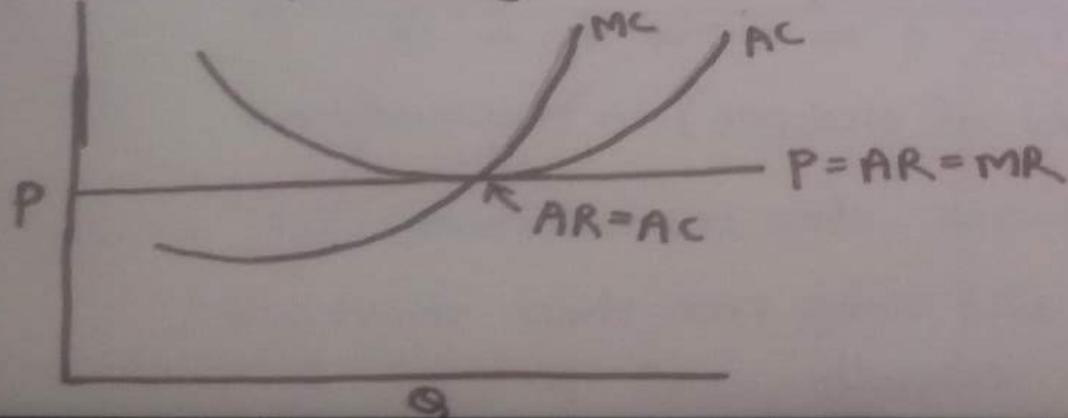
1. TR curve in perfect competition will always be a straight line from left to right upward
2. Price of the product of perfect competition firm is determined by industry. And firm will be price taker and will sell their product at the price determined by industry
3. And that is why price of the product for all the firm will be same.
4. And that is why price curve or demand curve for perfect competition firm is straight line
5. As price is fixed, AR and MR will also remain same. So in perfect competition $P=AR=MR$
6. In the short run Perfect competition firm can either make normal, super normal profit or can make losses
7. In the long run perfect competition firm can make only normal profit
8. Equilibrium of the firm where MC curve intersects MR curve from below(at this equilibrium point Q or output is determined.
9. To find out whether firm is making normal profit, supernormal profit or losses, first find out equilibrium point where $MR=MC$, then from that point draw one line to reach to AC and AR(in the case of perfect competition AR will be there where MR is there because it is always $P=AR=MR$)
10. Now after that if $AR=AC$ it is normal profit, if $AR>AC$ it is supernormal profit, if $AR<AC$ it is a case of loss

Pricing under perfect market condition (Short Run)

OR. price & output determination under perfect competition



Pricing under perfect market condition (Long run)



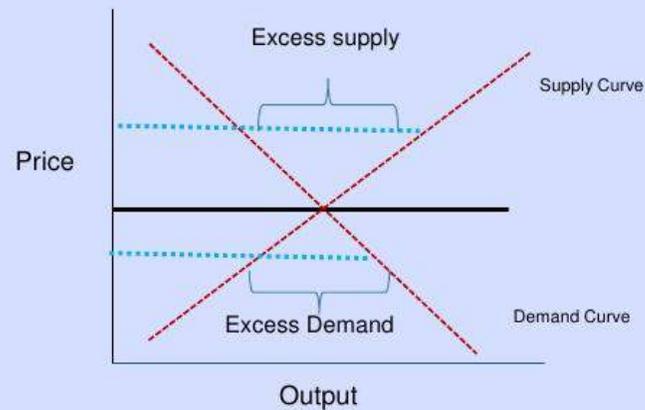
Under perfect competition in long run firm makes only normal profit

Reference to understand the concept well

EXTRA SLIDES

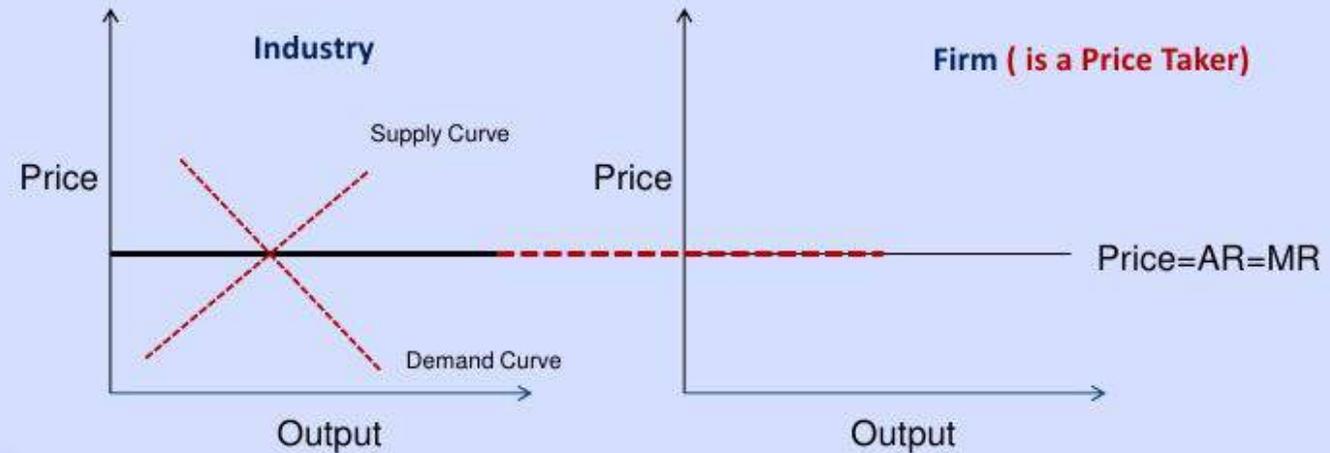
Meaning of Perfect Competition Market

Price determination in the industry



Meaning of Perfect Competition Market

Price determination in the industry



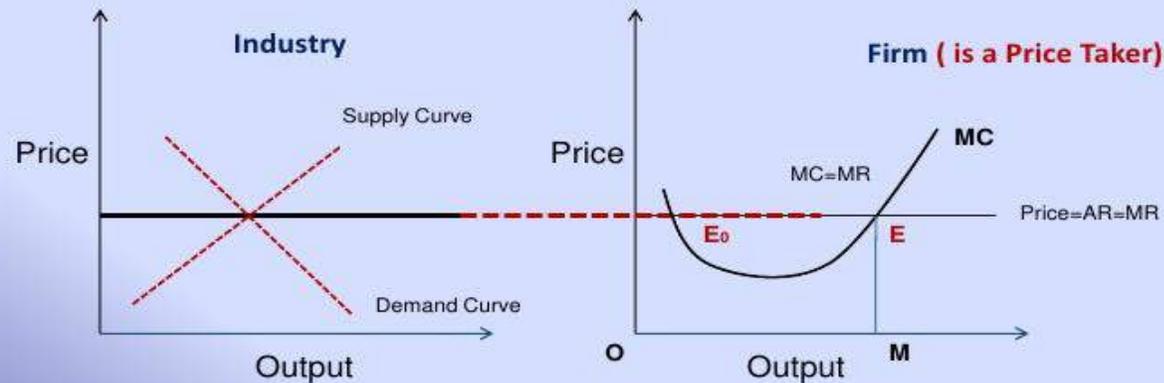
- **First Condition for maximization of profit > $MR = MC$**
- **Second Condition for maximization of profit > MC curve cut MR curve from below**

Equilibrium condition

Meaning of Perfect Competition Market

The firms equilibrium(Out put determination)

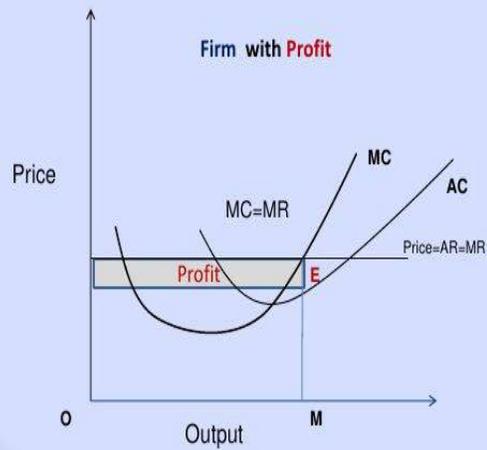
- First Condition for maximization of profit is $MR=MC$
- Second Condition for maximization of profit is MC curve cut MR curve from below



Short run cases

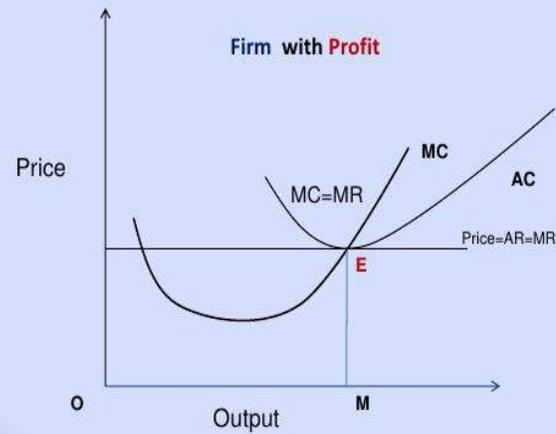
Meaning of Perfect Competition Market

Short run equilibrium of a firm with **abnormal profit**



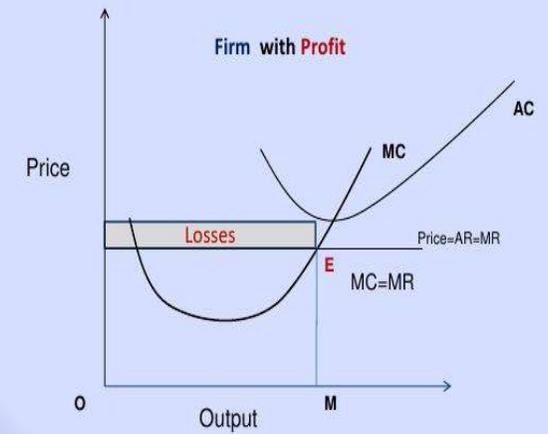
Meaning of Perfect Competition Market

Short run equilibrium of a firm with **No profit No Losses**



Meaning of Perfect Competition Market

Short run equilibrium of a firm with **Losses**



Unit 3-

Pricing under imperfect market conditions

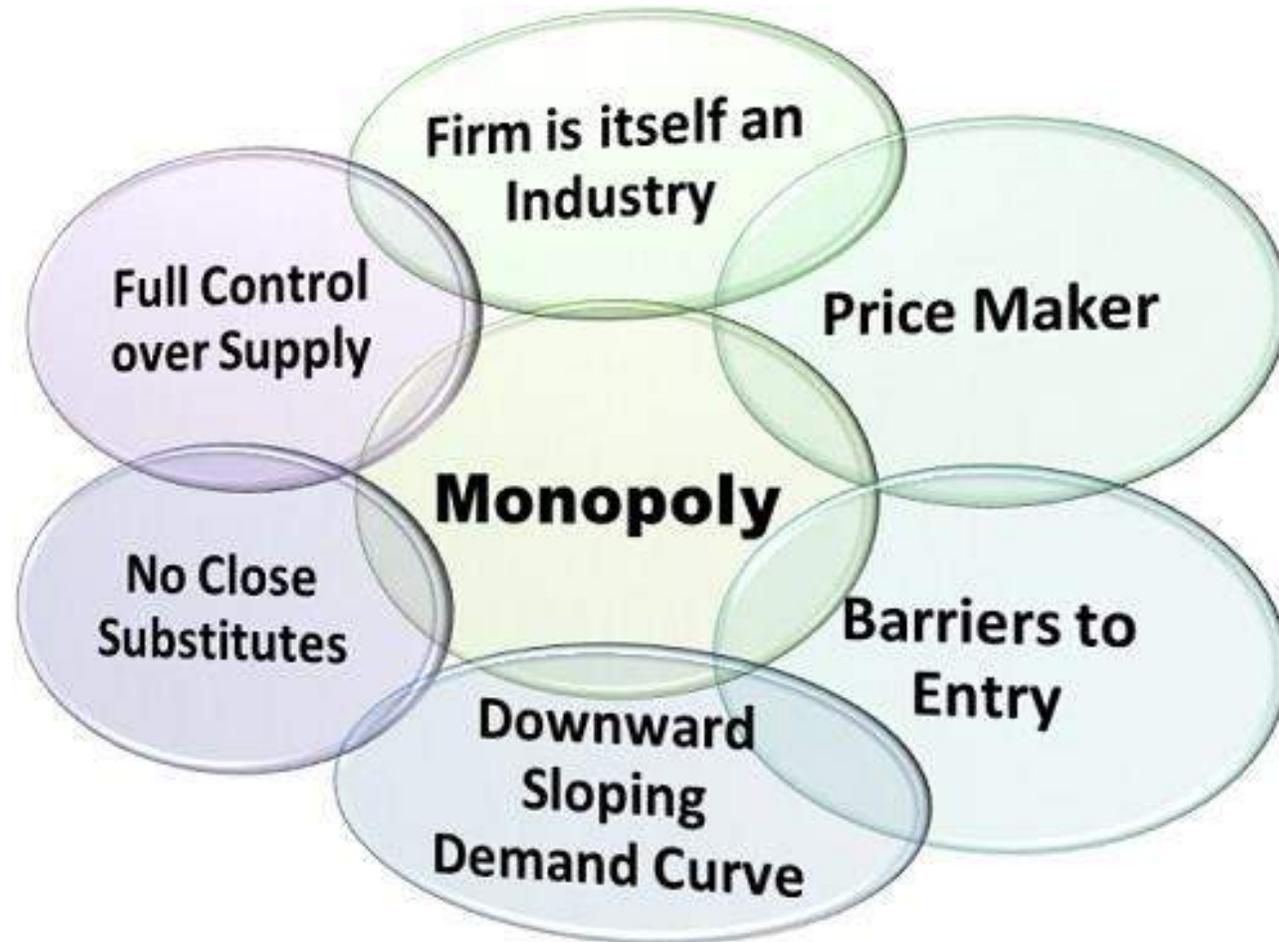
What is monopoly

What is monopoly market?

Monopoly is simply a market with only one seller and no close substitutes for that seller's product

The word monopoly is made up of two syllables mono and poly. Mono means single while poly implies selling....

Features or characteristic of Monopoly



Features of Monopoly

- **1. One Seller and Large Number of Buyers:**
 - The monopolist's firm is the only firm; it is an industry. But the number of buyers is assumed to be large.
- **2. No Close Substitutes:**
 - There shall not be any close substitutes for the product sold by the monopolist. The cross elasticity of demand between the product of the monopolist and others must be negligible or zero.
- **3. Difficulty of Entry of New Firms:**
 - There are either natural or artificial restrictions on the entry of firms into the industry, even when the firm is making abnormal profits.
- **4. Monopoly is also an Industry:**
 - Under monopoly there is only one firm which constitutes the industry. Difference between firm and industry comes to an end.
- **5. Price Maker:**
 - Under monopoly, monopolist has full control over the supply of the commodity. But due to large number of buyers, demand of any one buyer constitutes an infinitely small part of the total demand. Therefore, buyers have to pay the price fixed by the monopolist.

Types of Monopoly

- **Private monopoly:**

The monopoly firm owned and operate **by private individuals** is called the private monopoly. Their main motive is to make profit.

- **Public monopoly:**

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

- **Absolute monopoly:**

It is a type of monopoly, where a single seller controls the entire supply of market without facing competition. It is also known as pure monopoly. His product **does not have even any remote**

Contd..types of monopoly

- **Simple or single monopoly:**

It is a type of monopoly in which a single seller controls the entire market, by selling the commodity at a single price for all the consumer. There is **no price discrimination** in the market.

- **Discriminative monopoly:**

When a monopoly firm **changes different prices for the same goods or services to different consumers** it is known as discriminative monopoly.

- **Legal monopoly:**

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

Contd..types of monopoly

- **Natural monopoly:**

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

- **Technological monopoly:**

When a firm enjoys monopoly power due to **technical superiority** over other products in the market, then it is called as technological monopoly. For example products produced by L & T, Godrej etc. are technological monopoly.

EXAMPLES OF MONOPOLY

- Indian Railways has Monopoly in Rail Transportation.



- Hindustan Aeronautics Limited has monopoly over production of Aircraft.
- There is Government monopoly over production of Nuclear power.
- Eatables inside a Theatre during a movie.

Discriminating monopoly or price discrimination

- “Price discrimination is charging different prices for the same product or same price for the differentiated product.”
- “Discriminatory monopoly means charging different rates from different customers for the same good or service.”

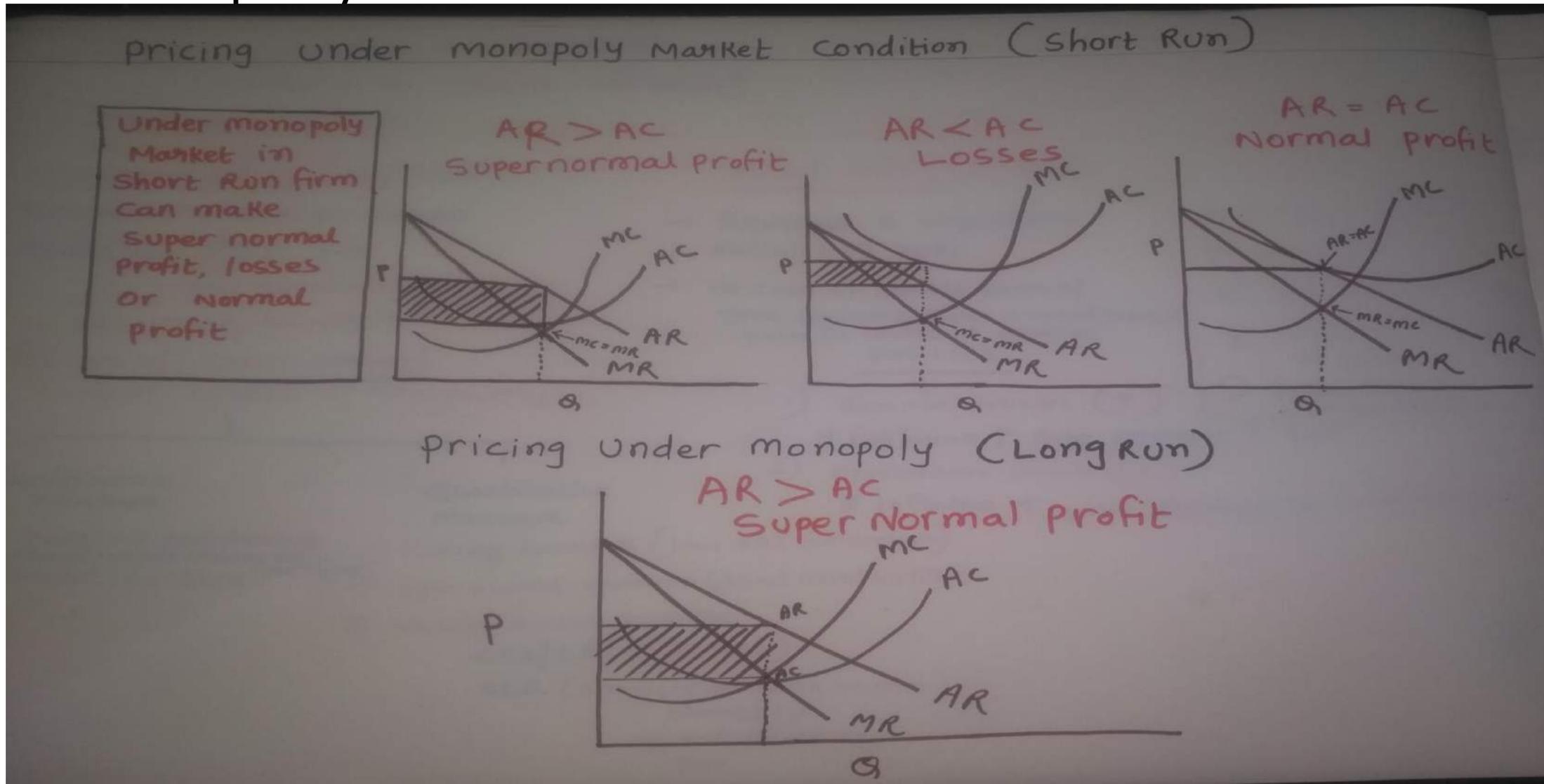
Forms of price discrimination

- Personal Discrimination (Doctor)
- Age Discrimination (Bus Fares)
- Sex Discrimination (Concession for ladies)
- Location or Territorial Discrimination (petrol in Goa)
- Size Discrimination (Economy size Toothpaste)
- Quality variation discrimination (Book Prices)
- Special service or comforts (Restaurants)
- Use discrimination (Electricity)
- Time discrimination (Telephone charges)

RULES TO REMEMBER(for monopoly market condition)

1. At initial stage, TR increases then remains constant after certain output and decreases at increasing after that
2. AR curve of Monopoly is nothing but it's a demand curve or price curve of a firm ($TR=p*Q$) and $AR= TR/Q$
3. That is why $P=AR$ in monopoly
4. AR and MR curve is downward sloping curve in monopoly
5. $MR < AR$ so MR curve always starts from left of AR curve
6. AR can never be zero (as $AR = Price$ and price can never be zero)
7. MR can be zero and negative also.
8. TR is maximum when MR is zero
9. In the short run firm can make Supernormal, normal profit or loss
10. In the long run monopoly firm will always incur super normal profit.
11. Equilibrium of the firm where MC curve intersects MR curve from below(at this equilibrium point Q or output is determined).
12. To find out whether firm is making normal profit, supernormal profit or losses, first find out equilibrium point where $MR=MC$, then from that point draw one line to reach to AC and AR
13. Now after that if $AR=AC$ it is normal profit, if $AR>AC$ it is supernormal profit, if $AR<AC$ it is a case of loss

Price and output determination under monopoly



Monopolistic market



Examples of Monopolistic competition

Examples of Monopolistic Competition



Shoe repairs and key makers



Taxi and minibus companies



Sandwich bars and coffee stores



Hairdressing salons



Dry-cleaners and launderettes



Bars and Nightclubs

Examples of Monopolistic Competition

- Clothing shops
- Gas stations
- Grocery stores
- Athletic wear
- Fast food restaurants
- Business supply stores
- Home Supply Stores
- Pet foods



Monopolistic Competition

- Many Sellers
 - There are many firms competing for the same group of customers.
 - Product examples include books, CDs, movies, computer games, restaurants, fast food, cookies, furniture, etc.



Monopolistic Competition- Examples



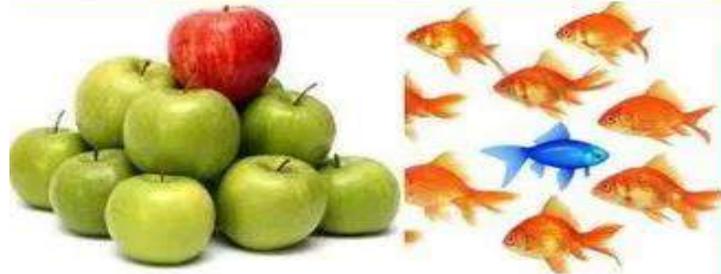
Difference between perfect competition and monopoly

Difference among perfect competition, monopoly and monopolistic competition			
Basis	Perfect competition	Monopoly	Monopolistic competition
Number of sellers	There are very large number of sellers and no individual seller has control over market supply.	There is a single seller and the monopolist has full control over the supply.	There are large number of sellers. So, a firm does not have much impact on the market supply.
Nature of product	The product is homogeneous. It is identical in all respect.	There are no close substitutes of the product.	Products are differentiated on the basis of brand, size, colour, shape, etc.
Entry and exit	There is freedom of entry and exit. It leads to absence of abnormal profits and losses in long-run.	There is restriction on entry and exit. So a firm can earn abnormal profit and loss in the long-run.	There is freedom of entry and exit. So, a firm earns only normal profits in the long-run.
Price	Firm is a price-taker as price is determined by the industry.	Monopolist is a price-maker as firm and industry are one and the same thing.	Firm has partial control over price due to product differentiation.
Level of knowledge	Buyers and sellers have perfect knowledge about market condition.	Buyers and sellers do not have perfect knowledge about market condition.	Buyers and sellers do not have perfect knowledge due to product differentiation and selling cost incurred by seller.
Selling cost	No selling costs are incurred.	Selling costs are incurred.	Heavy selling costs are incurred.

Product differentiation

Product Differentiation

The process of distinguishing a product or service from others to make it more appealing to a specific target market.

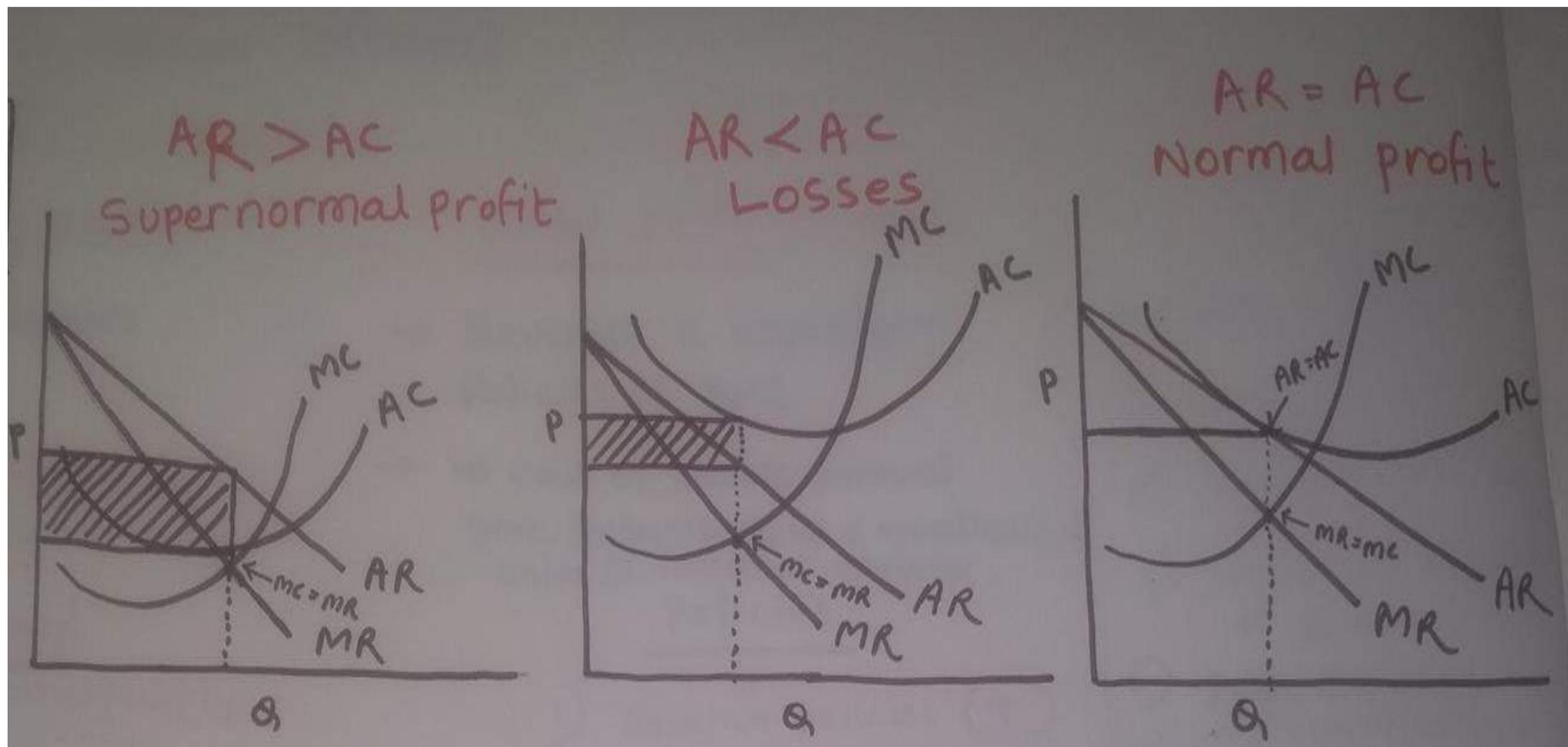


Top Speed

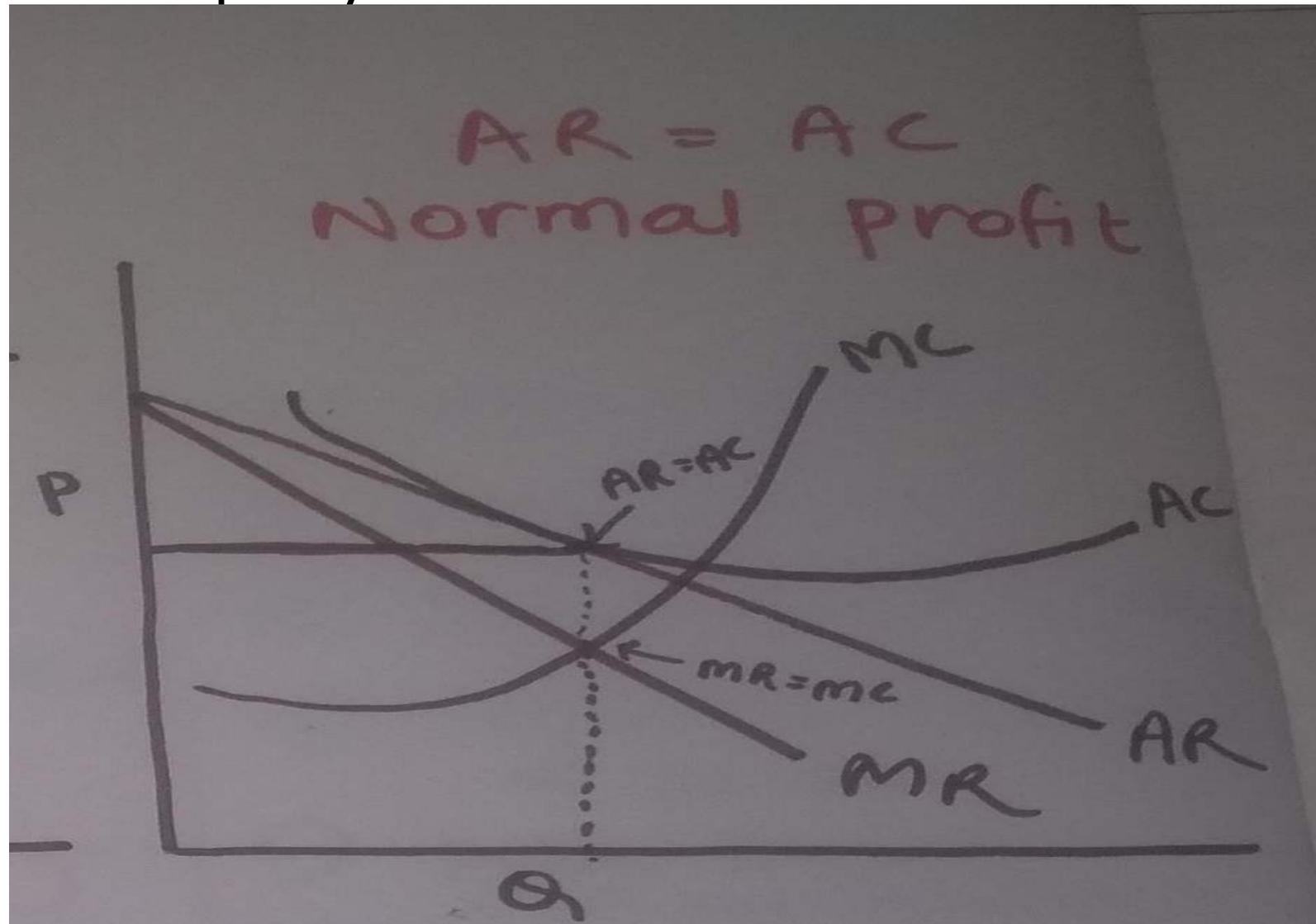


Product Differentiation	Features, warranty, durability, performance
Service Differentiation	Ordering ease, customer training
Channel Differentiation	Coverage, expertise, performance
Relationship Differentiation	Competence, courtesy, credibility
Reputation Differentiation	Perception, advertising, communication
Price Differentiation	By customer, by quantity, by segment

Pricing under monopolistic market short run



Price and output determination under monopoly



oligopoly

Oligopoly is defined as a market situation in which there are a few sellers or producers dealing in either the homogeneous or differentiated products.

Oligopoly: Example

■ Petrol retailing companies

□ Few large competitors

- BP
- SHELL
- Caltex
- Mobil



□ Smaller players

- Challenge
- Gull



CALTEX

Sell a homogeneous product. These firms differentiate their product with powerful branding using heavy advertising logos sponsorship and other promotions

Other Examples

•New car market

-Ford, Mitsubishi,
Toyota, Honda

•Fast Food market

- McDonalds, KFC,
Burger King

•Retail banking market

- BNZ, ANZ, Kiwibank,
Westpac

Features of oligopoly



Duopoly

- a situation in which two suppliers dominate the market for a commodity or service.

Examples of duopoly



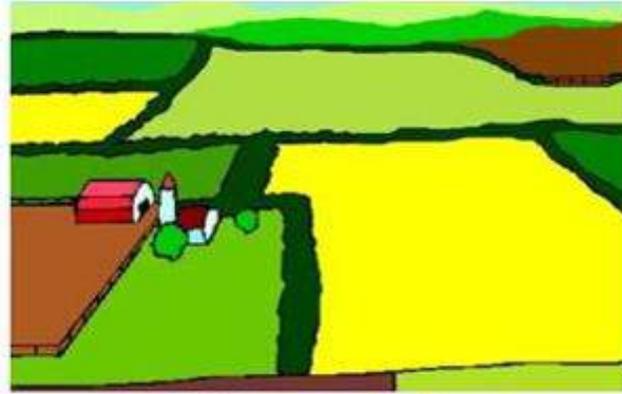
- A soft drink market with two companies such as Pepsi and Coke is called duopoly.
- Basic facilities for satellite communication are presently provided by the Mahanagar Telephone Nigam Limited (MTNL) and Videsh Sanchar Nigam Limited (VSNL)

Features of duopoly

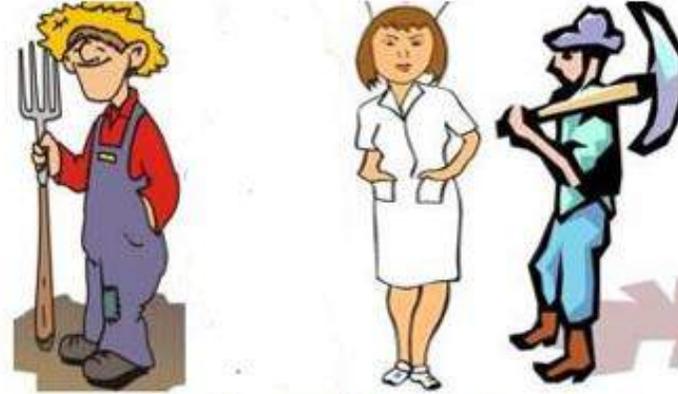
- Two sellers
- Each seller is fully aware of his rival's motive and actions.
- Both sellers may collude (they agree on all matters regarding the sale of the commodity).
- They may enter into cut-throat competition.
- There is no product differentiation.
- They fix the price for their product with a view to maximising their profit.

Unit 4: Factor pricing

FACTORS OF PRODUCTION



Land



Labor



Capital



Enterprise

Factor Income

Incomes that the four factors of production give us. Land, labor, capital, and enterprise give us rent, wages, interest, and profit respectively.

Land Gives Us



Rent

Labor Gives Us



Wages

Capital Gives Us



Interest

Enterprise Gives Us



Profit

FACTOR INCOME



Land

- Natural resources



Labor

- Anyone who works and the work they do.



Capital

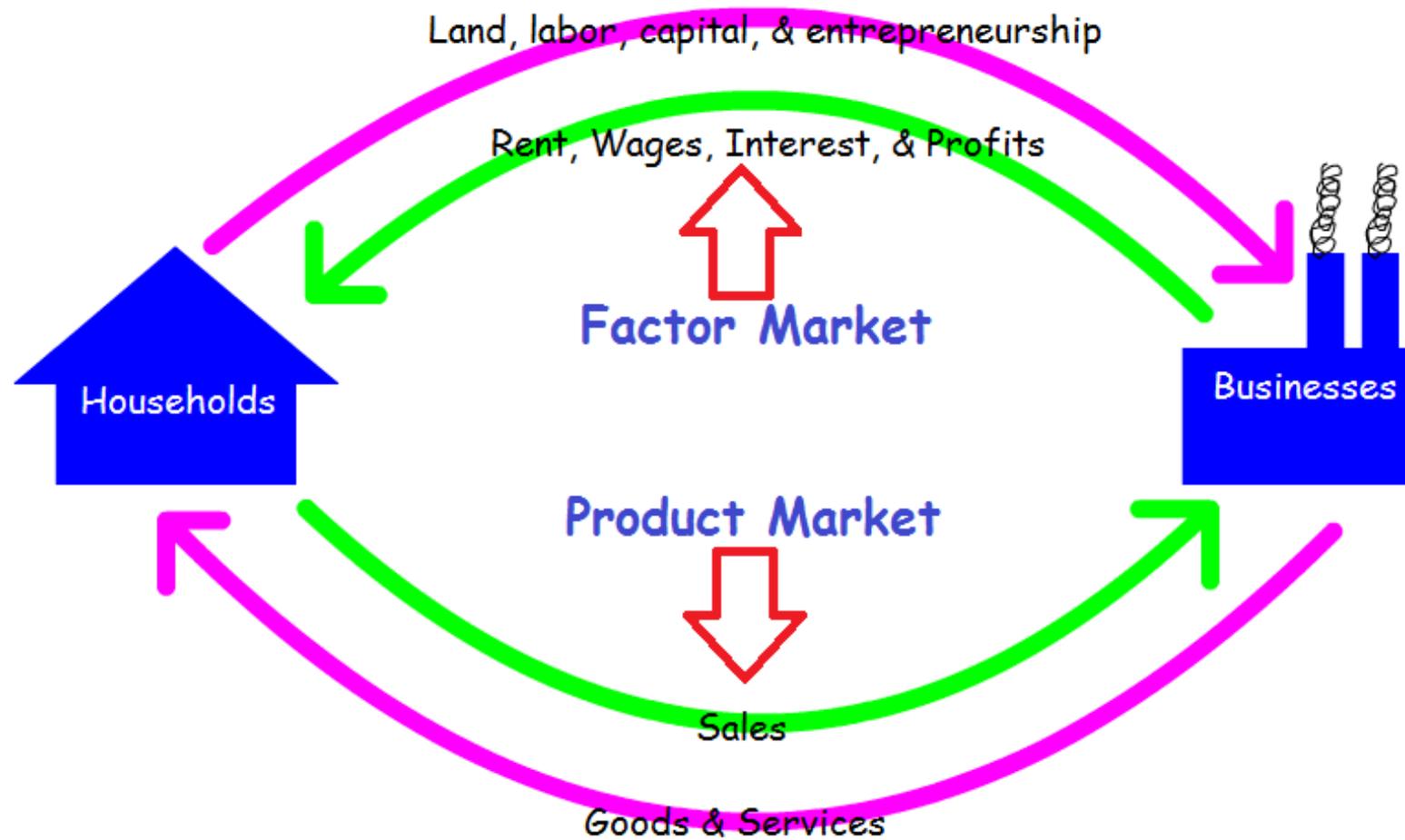
- Property used to make other goods and services.



Entrepreneurship

Individual's ability to start new businesses and take risks with financial capital.

Circular flow of economics



Mainly in this chapter we will discuss about marginal productivity theory of distribution and theory of factor pricing.

Theory of Marginal productivity explains distribution of National income among four factors of production

And

Theory of factor pricing deals with determination of prices of services of 4 factors of production

Price of factors governed by its productivity

Marginal productivity theory of distribution

- According to this theory, the price (or the earnings) of a factor tends to equal the value of its marginal product. Thus, rent is equal to the value of the marginal product (VMP) of land; wages are equal to the VMP of labour and so on. The neo-classical economists have applied the same principle of profit maximisation ($MC = MR$) to determine the factor price. Just as an entrepreneur maximises his total profits by equating MC and MR, he also maximises profits by equating the marginal product of each factor with its marginal cost.

Marginal productivity theory of distribution

- An employer will employ a particular factor of production upto that unit for which **the remuneration paid is equal to the contribution made by that unit** to the total production, for which the marginal factor cost equals the marginal factor productivity

Assumptions of Marginal productivity theory

- **1. Perfect competition in both product and factor markets:**

Firstly, the theory assumes the perfect competition in both product and factor markets. It means that both the price of the product and the price of the factor (say, labour) remains unchanged.

- **2. Operation of the law of diminishing returns:**

Secondly, the theory assumes that the marginal product of a factor would diminish as additional units of the factor are employed while keeping other factors constant.

- **3. factors are homogeneous**

Thirdly, all the units of a factor are assumed to be homogeneous. It means that a factor can be divided into small units and each unit of it will be of the same kind and of the same quality.

Assumptions of Marginal productivity theory

- **4. Operation of the law of substitution:**

Fourthly, the theory assumes the possibility of the substitution of different factors. It means that the factors like labour, capital and others can be freely and easily substituted for one another. For example, **land can be substituted by labour and labour by capital.**

- **5. Profit maximisation:**

Fifthly, the employer is assumed to employ the different factors in such a way and in such a proportion that he gets the maximum profits. This can be achieved by employing each factor up to that level at which the price of each is equal to the value of its marginal product.

Assumptions of Marginal productivity theory

- **6. Full employment of factors:**

Sixthly, the theory assumes full employment for factors. Otherwise each factor cannot be paid in accordance with its marginal product. If some units of a **particular factor remain unemployed, they would be then willing to accept the employment at a price less than the value of their marginal product.**

- 7. No technological changes**

Productivity of Factor

- Productivity of a factor can be expressed in two ways
 - 1) Physical productivity
 - 2) Revenue productivity

Physical productivity:

1) APP (Average physical productivity=

Total product/no. of units of labour

2) MPP (Marginal physical productivity=

Increase in total productions a result of employment of an additional unit of factor

- Revenue productivity:

1) ARP(average revenue productivity)

APP*price

2) MRP(marginal revenue productivity)

MPP*Price

concept of Marginal productivity theory can be explained by following table

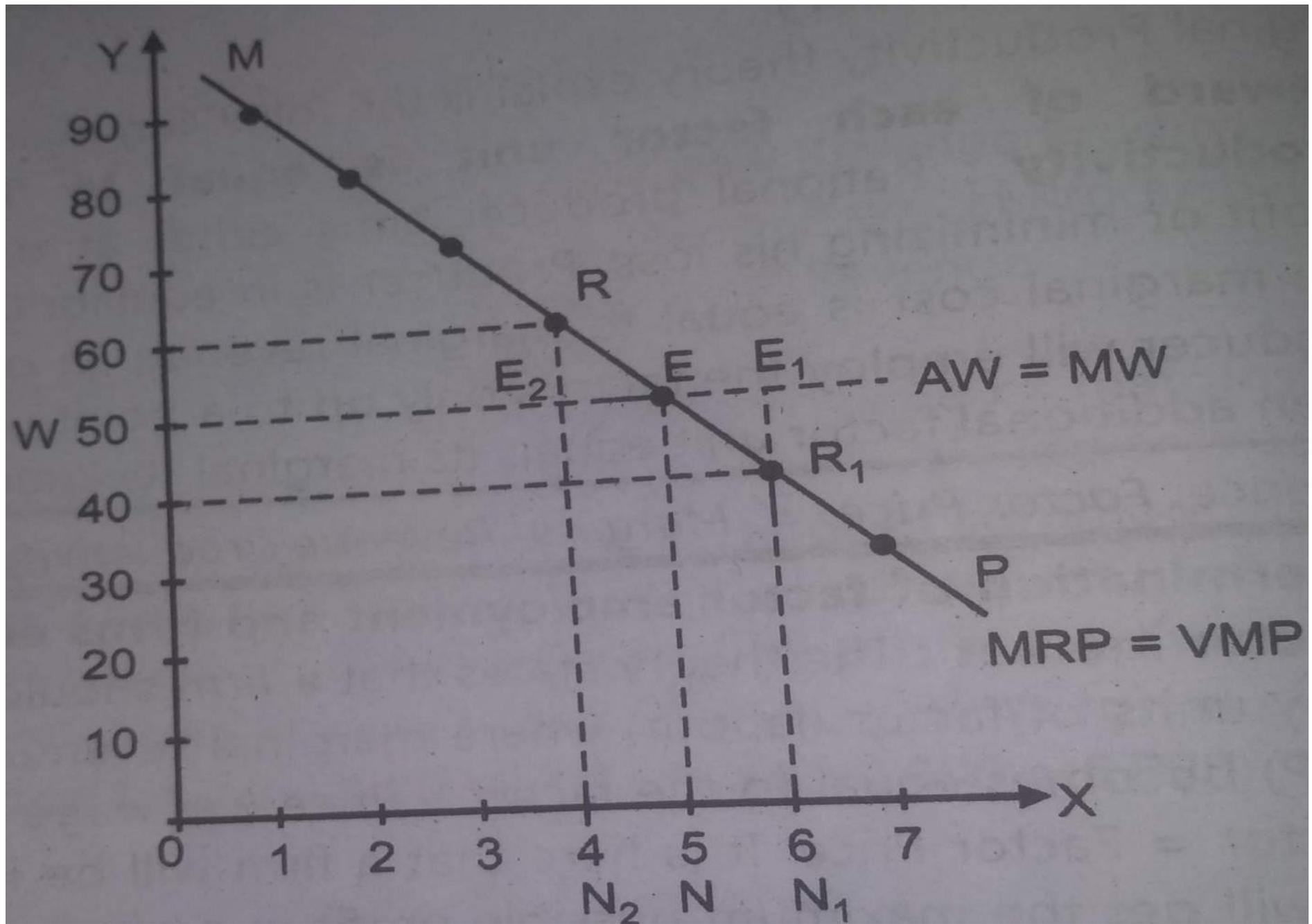
NO. OF Units of Labour	price	Total product or Quantity Produced	Mpp $\frac{\Delta TP}{\Delta L}$	MRP MPP \times P	App $\frac{TP(ORQ)}{L}$	ARP App \times P	Wage AW MW
1	2	8	8	16	8	16	15
2	2	17	9	18	8.5	17	15
3	2	27	10	20	9	18	15
4	2	38	11	22	9.5	19	15
5	2	45	7	14	9	18	15
6	2	51	6	12	8.5	17	15
7	2	56	5	10	8	16	15

From the above table it is clear that when MRP is greater than wage rate, firm can increase its profit by employing more and more unit of labours. MRP will decline and eventually become equal to wage rate when firm employ 5th unit of labour. After that firm will incur loss as MRP is less than wage rate

Units of Labour, wages

& Marginal Revenue Productivity

Labour units	$AW = MW = W$	MRP (Revenue product)
1	14	16
2	14	18
3	14	20
4	14	22
5	14	14
6	14	12
7	14	10



Units of Labour, wages
& Marginal Revenue Productivity

Labour Units	$AW = MW = W$	MRP (Revenue product)	ARP
1	14	16	16
2	14	18	17
3	14	20	18
4	14	22	19
5	14	14	18
6	14	12	17
7	14	10	16

Long run equilibrium in factor market under marginal productivity theory

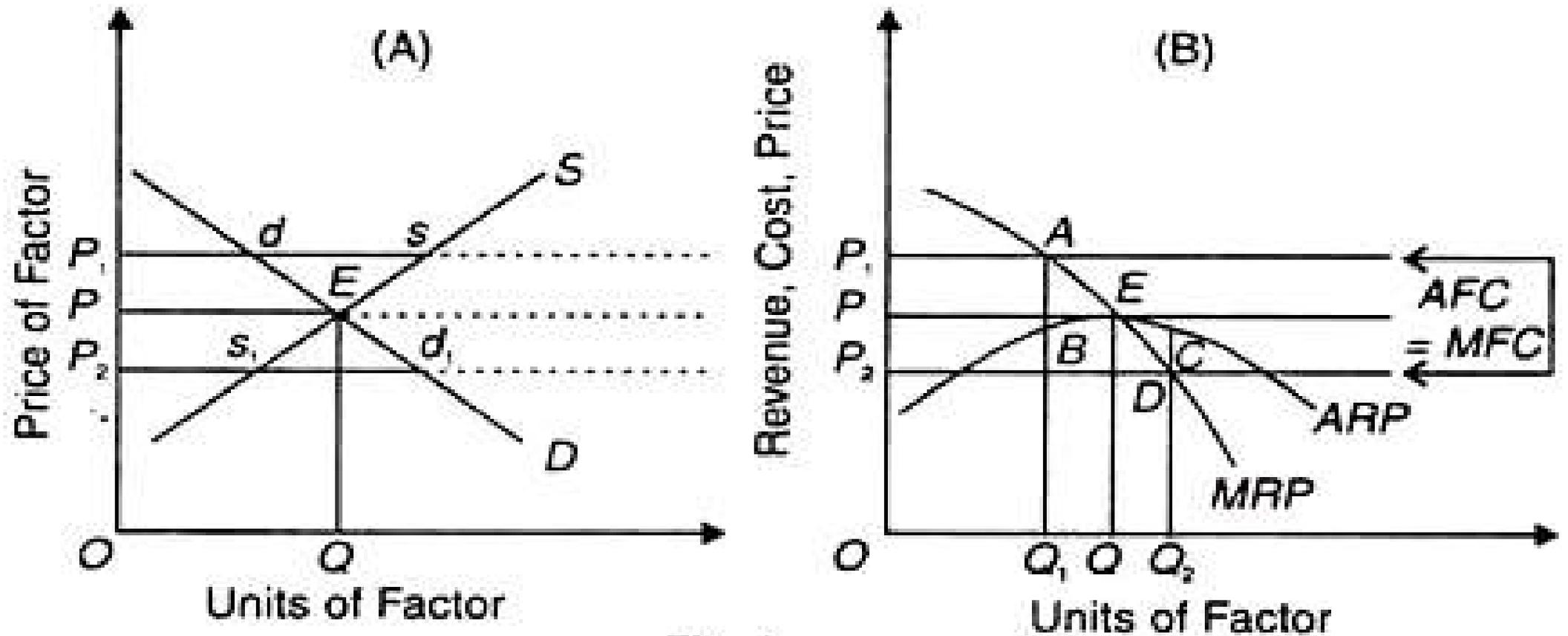


Fig. 4

Explanation of long equilibrium graph

- Given these assumptions, first we explain the determination of the price of a factor in an industry in terms of its demand and supply. In Fig. 4(A), the demand curve D of industry intersects its supply curve S at point E which determines OP price and OQ quantity demanded and supplied. Thus all units of the factor (say, labour) in the industry are paid the same price (wage), OP .
- There being perfect competition, a firm will pay the same price (wage) to each unit of the factor (labour) as paid by the industry. Therefore, for the firm, the supply of this factor at that price will be perfectly elastic. It means that the supply curve of this factor at the given price OP is horizontal curve, shown as $AFC = MFC$ in Panel (B) of the figure. AFC and MFC are the average and marginal factor costs of the firm at which it employs the factor units.
- Find out a point where your $MFC=MRP$ ($MR=MC$ point) from that point see what is your ARP and your AFC .

Criticism of Marginal productivity theory

The marginal productivity theory of distribution has been one of the most criticised theories in economics due to its unrealistic assumptions.

(1) Units of a Factor not Homogeneous:

The assumption that all units of a factor are homogeneous is unrealistic. We know that efficiency of labour differs from worker to worker. Similarly, one piece of land differs from the other in fertility. It is, therefore, not correct to assume that the different factor-units of the same are homogeneous. In fact, heterogeneity and not homogeneity is the rule.

(2) Factors not perfectly Mobile:

The theory assumes perfect mobility of factors as between different employments and places. But, in reality, factors are mostly immobile, particularly labour.

(3) No Perfect Competition:

The theory is based on another unrealistic assumption of perfect competition which is to be found neither in the factor market nor in the product market. Perfect competition is not a reality but a myth. Rather imperfect competition or monopolistic competition is the rule.

(4) Factors not fully employed:

The theory assumes the existence of full employment in the economy. This assumption of full employment makes the theory static. According to Keynes, under-employment rather than full employment is found in an economy.

(5) All Factors not Divisible:

The assumption that factor-units are divisible and therefore can be increased by small quantities does not hold true. It is not possible to vary an individual, large or lumpy factor. For example how can the entrepreneur of a firm be increased or decreased by small units? Thus the equality between marginal productivity and price of a factor cannot be brought about by varying its quantities a little less or more.

(6) Production not the Result of One Factor:

According to Taussig and Devonport production of a commodity cannot be attributed to any one factor- land, labour or capital. Rather, it is always the result of factors and their units working together. It is, therefore, not possible to calculate the marginal productivity of each factor unit separately.

(7) Profit not the Main Motive:

The theory assumes that the entrepreneurs are motivated by maximization of profits. But as pointed out by Schumpeter, the entrepreneurial action is guided by the desire to found a commercial kingdom, the will to conquer, the joy of creating and getting things done. It is, therefore, not true to say that the entrepreneur is guided by the profit motive.

(8) Not Applicable in the Short-Run:

The theory is applicable only in the long-run, when the reward of a factor tends to equal its marginal revenue product. But, in reality, we are concerned with short-run problems. As remarked by Keynes, "In the long-run we are all dead." This assumption makes the factor pricing unrealistic.

(9) Nested of Technical Progress:

According to Hicks, this theory fails to throw light on the determination of relative shares by neglecting the influence of technical change. Hicks have shown that a labour-saving innovation tends to raise the marginal product of capital relative to that of labour.

The opposite may happen in the case of capital-saving innovation. Sometimes a technical change requires the use of cooperating factors in fixed proportions say two workers for one machine. Thus the marginal productivity theory fails to analyse the problems of technical Change.

(10) Supply of Factors not fixed:

This Theory assumes the supply of factors to be perfectly inelastic. The supply of factors is fixed during the short period and not in the long-run. Therefore, the theory is self-contradictory. For it assumes the supply of factors to be fixed in the long-run to which it applies.

(11) Only Demand Theory:

According to Samuelson, being a theory solely of the demand for factors, this theory cannot be applied to the factor market as a whole which requires a theory of both the demand for and supply of factors. Thus it is a one-side theory.

(12) No Justification for Inequalities in Income:

The marginal productivity theory is often used to justify the existing inequalities in the distribution of income. The theory states that the price of each factor equals its marginal revenue product which makes the reward inevitably what it is. Apparently, a person gets what he produces.

The basic postulate rests on the proposition that an individual gets what is produced by the resources he possesses and that all persons have equal opportunities. **But no two persons possess the same resources and have equal opportunities.** Thus the existing distribution of income cannot be justified on the basis of the principle of marginal productivity.

(13) Reward determines Productivity:

According to this theory, the reward of a factor-unit is determined by its MRP. But according to Sydney Webb, when a worker is paid a higher reward (wage), his efficiency and productivity increase. Thus, reward is the cause and not the result of MRP.

Rent

- Ricardian theory of rent
- Modern theory of rent
- Quasi rent

Recardian theory of rent/classical theory of rent



**David
Ricardo**

1772-1823)

RICARDIAN THEORY OF RENT

- ⦿ David Ricardo, Gave his theory of rent in his book, “Principles of Political Economy and Taxation”
- ⦿ Acc to Ricardo, Economic rent is the price paid for the use of services of land.
- ⦿ David Ricardo, a British economist ,defined rent as The portion of the produce earth which is paid to the landlord for the use of original and indestructible powers of the soil.
- ⦿ Rent also arises due to the difference in the fertility of land

ASSUMPTIONS

- ⦿ There is difference in the fertility of land
- ⦿ Supply of land is fixed
- ⦿ Land has only one use , i.e., cultivation
- ⦿ Law of diminishing returns operate in agriculture
- ⦿ There is perfect competition in product market
- ⦿ There exists marginal or no -rent land in the economy

EXPLANATION OF RICARDIAN THEORY

- ◉ The quantity of Land is limited, and so is its productiveness, and it is not uniform in quality.
- ◉ If the superior land will not support the population, resource must be made to inferior lands and the produce is thus raised at different costs
- ◉ The differential advantage of the superior land over the inferior gives rise to economic rent
- ◉ The amount of rent is determined by the degree of the differences in productivities of land.

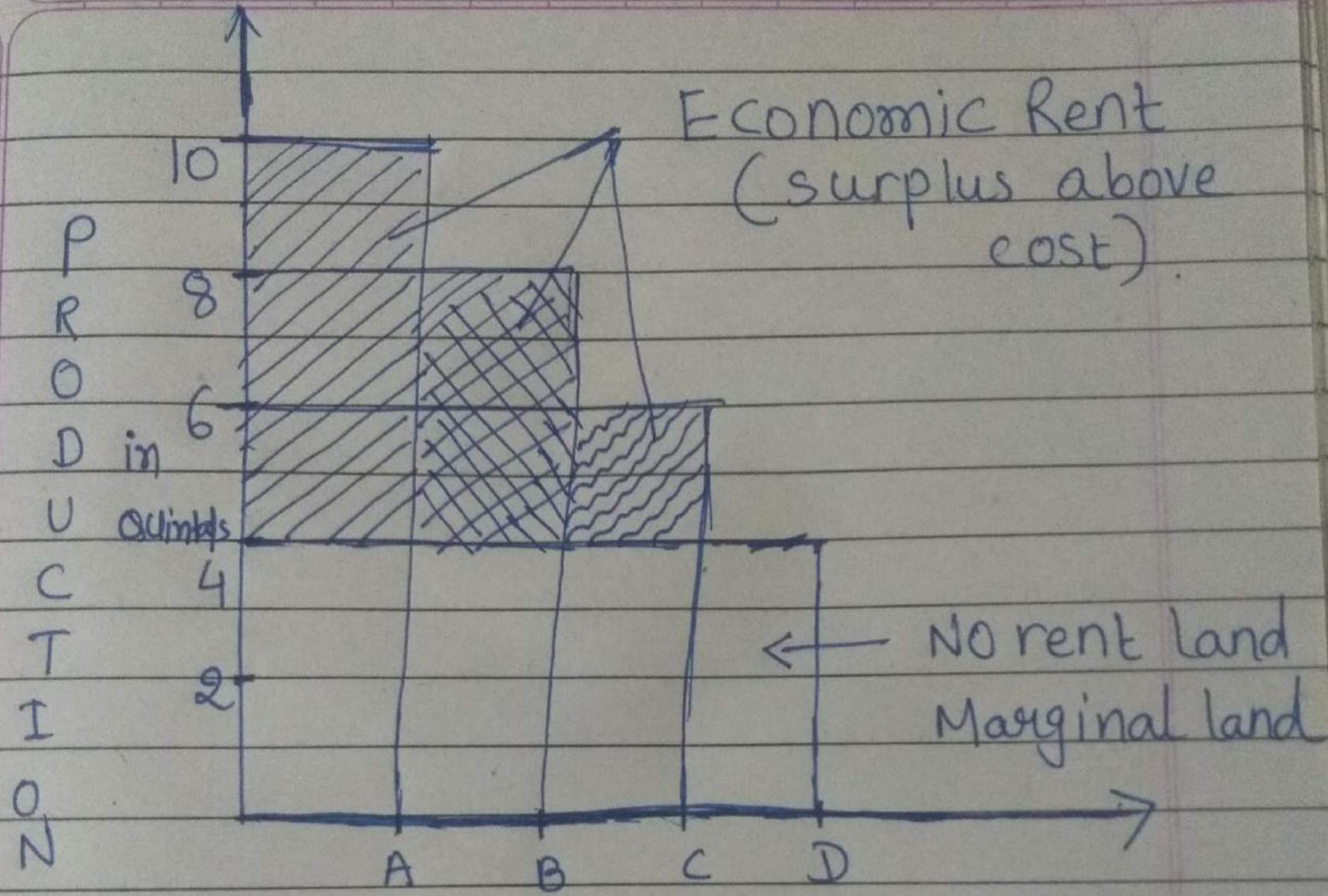
DETERMINATION OF RENT

- ◉ Rent can be Determined under two situations
- ◉ **A) Extensive Cultivation:** It refers to the system of cultivation wherein more land is used to increase production
- ◉ **B) Intensive Cultivation:** IT refers to the system of cultivation where large amounts of labour and capital are used in same piece of land for increasing production

RENT IN EXTENSIVE CULTIVATION

- ⦿ Acc to Ricardo:-
- ⦿ All the units of land are not of the same grade. They differ in fertility and location
- ⦿ The application of the same amount of labour, capital and other cooperating give rise to difference in productivity
- ⦿ This difference in productivity or the surplus which arises on the superior units of land over the inferior units is an economic rent

Grades of land	Output (in quintals)	Cost of labour and capital	Surplus over Marginal land	Rent
A	10	100	$10-4=6$	6
B	8	100	$8-4=4$	4
C	6	100	$6-4=2$	2
D	4	100	$4-4=0$	0



Economic Rent
(surplus above cost)

← NO rent land
Marginal land

(Grade of lands)

Combination of labour and capital	Yield per Acre	Rent
A	60	$60-20=40$
B	50	$50-20=30$
C	35	$35-20=15$
D	20	$20-20=0$

CRITICISM

- ◉ Fertility of land is neither Original nor Indestructible
- ◉ Marginal or No -rent Land
- ◉ Every land has same fertility
- ◉ Perfect competition
- ◉ Alternative uses of land
- ◉ Rent is not due to Fertility but due to Scarcity

Rent

- Modern theory of rent

Modern theory of rent

Is based on :

- Rent arise due to scarcity of land

here the determination of rent is explained in terms of the interaction of demand and supply forces. Rent is based on the scarcity of the availability of the land and it is immaterial whether it is of superior or inferior or any other quality.

- Rent is a generalised surplus earned by all factors

this means that rent is not only associated with land , it can be earned by any factor of production which is scarce in relation to its demand. Scarcity means inelasticity of supply and that is not only the case with land but with all the factors of production.

- Rent, as surplus earned by a factor, is measured with reference to transfer earnings of the factor in its current employment.

Transfer earning is “the price which is necessary to retain a given unit of a factor in a certain industry may be called its transfer earning” it is nothing but the opportunity cost. i.e. what it could earn elsewhere.

Formula for economic rent under modern theory of rent

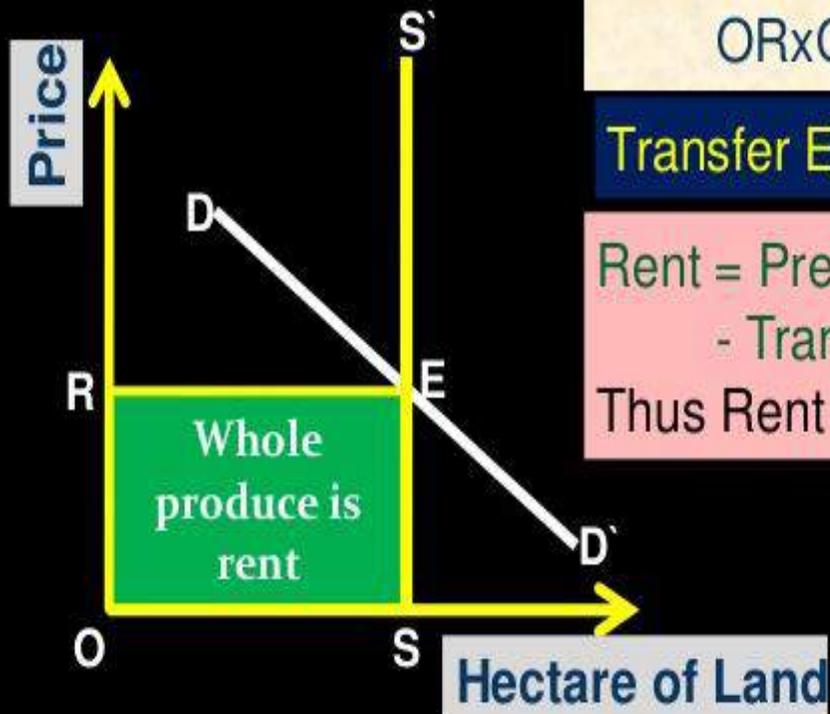
Economic rent = Current earning of a factor – transfer earning

this formula we will apply in 3 cases

- 1) Consider the case of a factor having perfectly inelastic supply
- 2) Consider the case of a factor having perfectly elastic supply.
- 3) Consider the case of a factor having supply less than perfectly elastic.(relatively inelastic means change in rent is more than change in the supply of factor)

Modern Theory of Rent

When Supply of Factor is Perfectly Inelastic



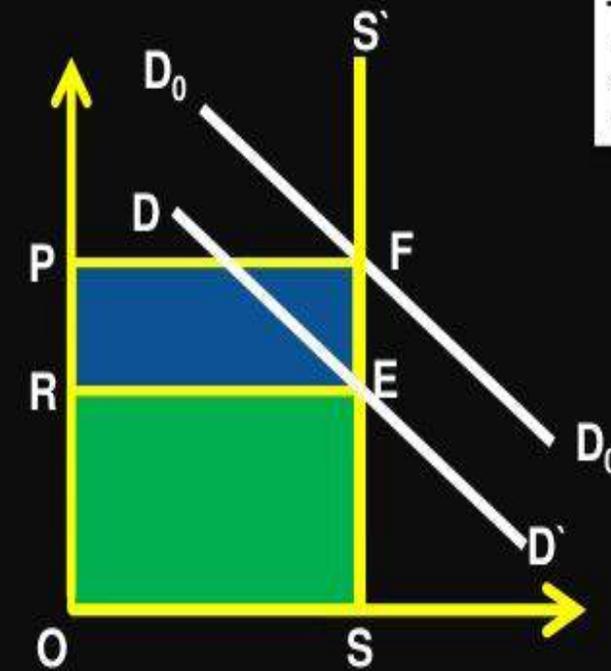
Here Present Earnings = $OR \times OS = ORES$

Transfer Earnings = Zero

Rent = Present Earnings - Transfer Earnings.
Thus Rent = ORES

Modern Theory of Rent

Now if demand increases from DD' to D_0D_0



Then Rent increases from ORES to OPFS

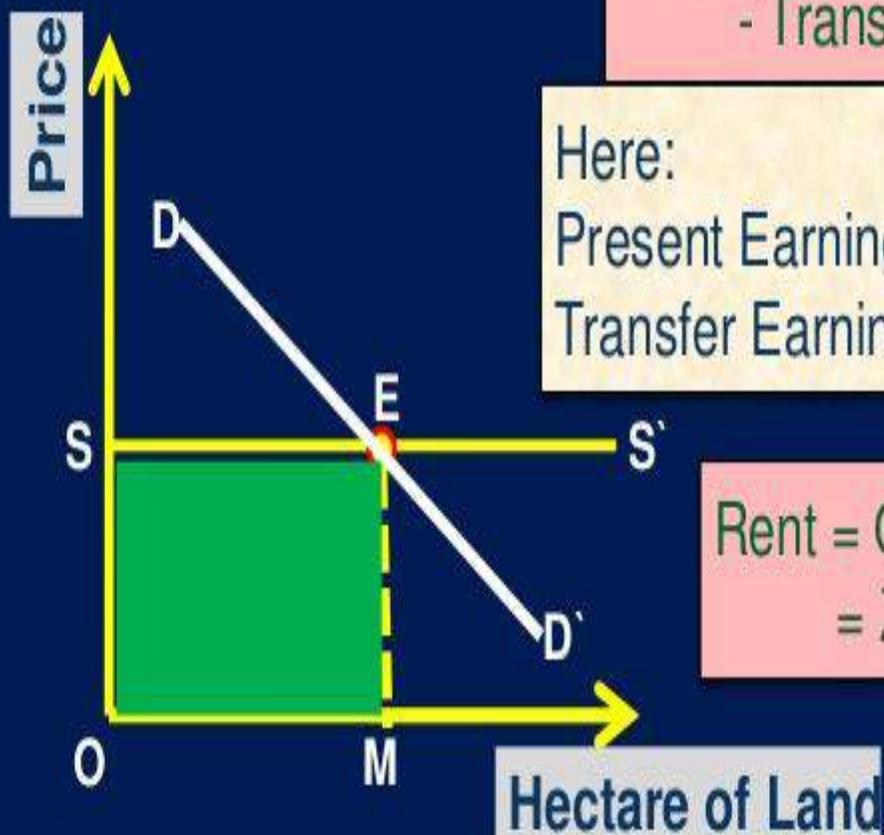
Modern Theory of Rent

When Supply of Factor is Perfectly Elastic

Rent = Present Earnings
- Transfer Earnings.

Here:
Present Earnings = OSEM
Transfer Earning = OSEM

Rent = OSEM - OSEM
= ZERO

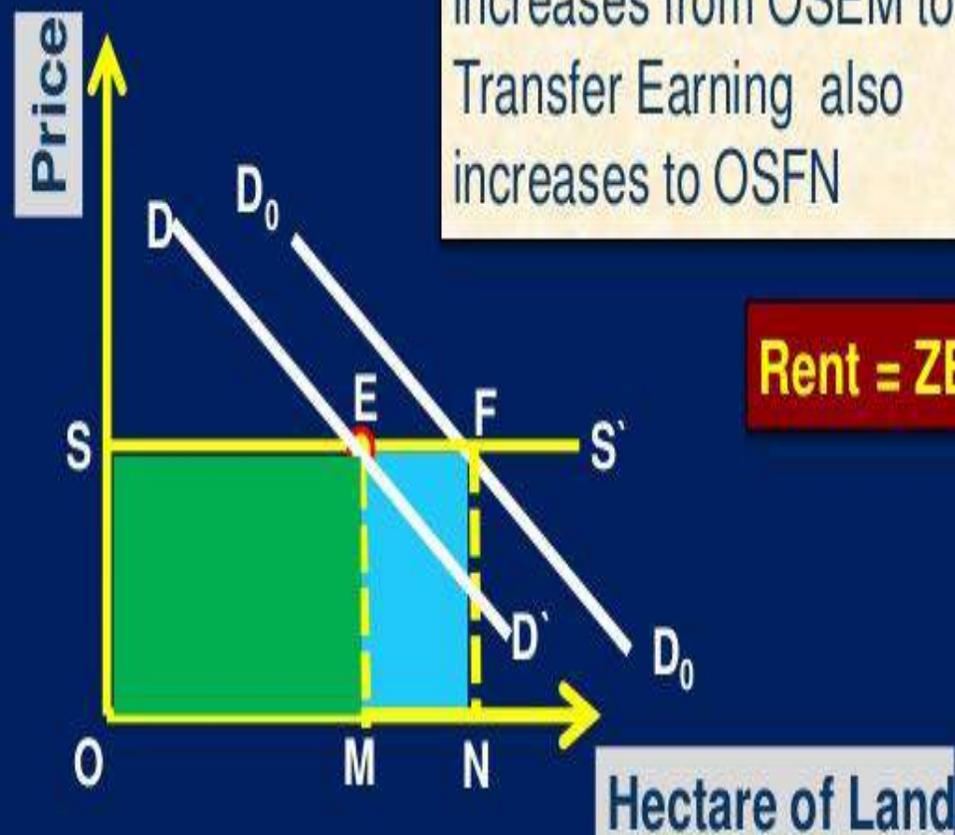


Modern Theory of Rent

Now if demand increases from DD' to D₀D₀

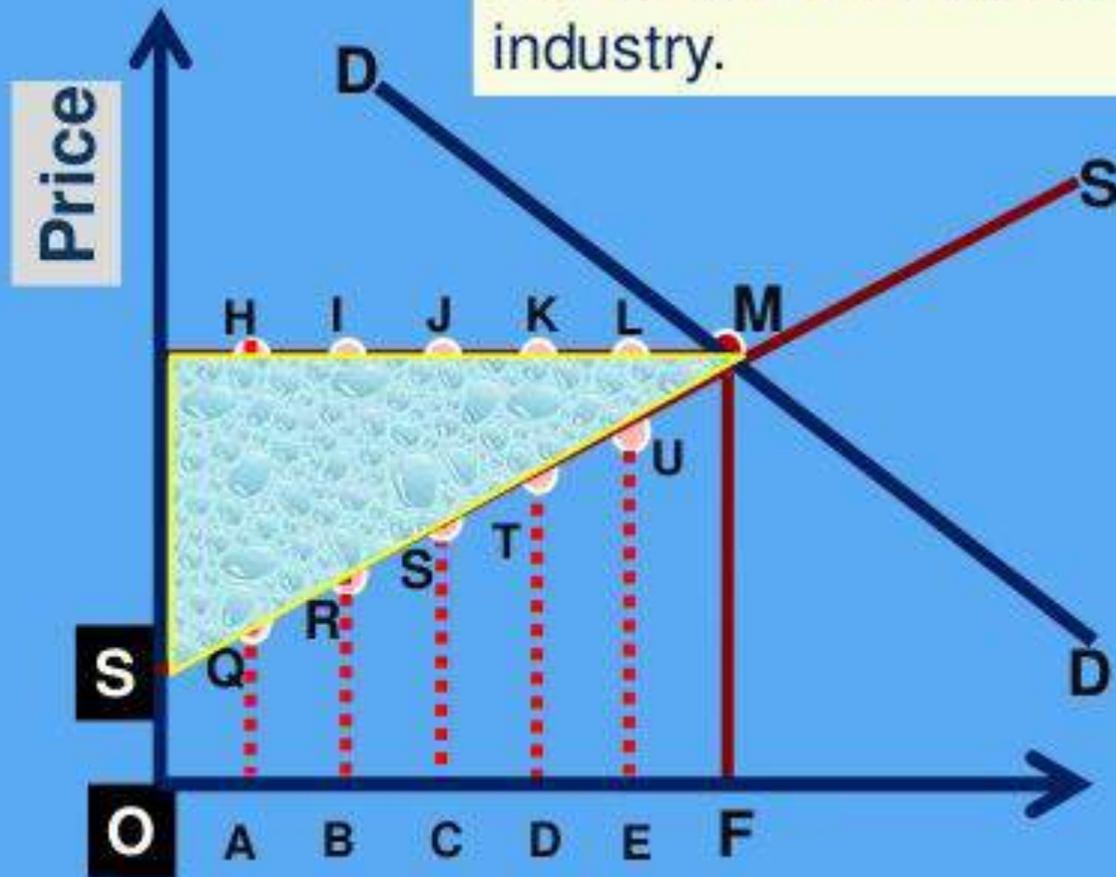
Then Present Earnings
increases from OSEM to OSFN
Transfer Earning also
increases to OSFN

Rent = ZERO



When Supply of Factor is Elastic

A^{th} unit of Factor has a supply price equal to AQ. In other words, AQ must be paid to the A^{th} unit of land in order to keep it in the wheat industry.



A^{th} unit of land obtains price ($AH = OP$) while its transfer earnings are only AQ. Therefore, A^{th} unit of land earns QH as economic rent ($QH = AH - AQ$)

FEATURES OF MODERN THEORY OF RENT

- ❑ Amount of rent depends upon the difference between actual earning and transfer earning.
- ❑ Rent arises when the supply of the factor is either perfectly inelastic or less elastic . On the other hand no rent arise when the supply of the factor is perfectly elastic.

Rent

Quasi rent



Quasi Rent

The concept of *quasi-rent* owes its origin to Dr. Alfred Marshall. Dr. Marshall is of the opinion that:

"It is not possible for human beings to increase the supply of land. It is fixed by Nature. If price of a produce rises, the surface of earth cannot be increased and if price falls, it cannot be decreased. But by appliance of machine which are the product of human efforts, the supply can be increased or decreased if a fairly long period of time is allowed".

"Marshall is of the view that a differential surplus which arises from a factor of production, whose supply is fixed for all times to come should be named as rent but a temporary gain which a factor or production earns due to temporary limitation of its supply should be called quasi-rent".

QUASI RENT

- ❑ The concept of *quasi-rent* owes its origin to Dr. Alfred Marshall.
- ❑ Marshall is of the view that a differential surplus which arises from a factor of production, whose supply is fixed for all times to come should be named as rent but a temporary gain which a factor or production earns due to temporary limitation of its supply should be called quasi-rent..
- ❑ Quasi-rent is a temporary gain which is earned by a factor of production due to the temporary limitation of its supply.

QUASI RENT

In the short run, machinery has no alternative use and therefore its supply will remain fixed in the short run. Thus, the transfer earnings of the capital equipment or machinery in the short run are zero. Therefore, the whole of the earnings of the machinery in the short run are surplus over transfer earnings and therefore represent rent.

Professors Stonier and Hague rightly remark: **The supply of machines is fixed in the short run whether they are paid much money or little so they earn a kind of rent. In the long run this rent disappears for it is not a true rent.**

MEASUREMENT OF QUASI RENT

Quasi Rent as Surplus over Variable Costs

Quasi Rent = Total Revenue Earned - Total Variable Costs

The variable costs must be recovered in the short run otherwise the production would be stopped. Whatever excess earnings over and above the total variable costs are made are ascribed to the machines (i.e. fixed factor).

Distinction Between Rent and Quasi Rent

Differences

- ❑ Rent is a payment for natural gifts of nature like land. Quasi rent is a payment for man made appliances like machines.
- ❑ As the supply of land cannot be changed, rent persists in both short run and long run. But quasi rent is a short run phenomenon which disappears in the long run when the supply of man made goods is increased.
- ❑ Rent is permanent in nature while quasi rent is a temporary phenomenon.

Distinction Between Rent and Quasi Rent

Differences

- ❑ Rent is the difference between total revenue and total costs whereas quasi rent is difference between total revenue variable costs.
- ❑ Rent is regarded as unearned income. But quasi rent is a necessary payment which all factors of production receive due to their inelastic supply in the short run.
- ❑ Rent arises due to differences in fertility of land whereas quasi rent arises due to the scarcity of man made appliances in the short run.

WAGES

- A wage is monetary compensation paid by an employer to an employee in exchange for work done. Payment may be calculated as a fixed amount for each task completed, or at an hourly or daily rate, or based on an easily measured quantity of work done.
- In economics, the price paid to labour for contribution to the process of production is called wages.
- It is a reward to the labourers for service rendered by them.

TYPES OF WAGES

- Minimum Wages
- Money wages
- Real wages
- Subsistence wages
- Fair wages

1) Minimum wages

- The concept of minimum wages are different for different countries . It is that wage which provides not only the bare sustenance of life but also the preservation of the efficiency of the worker.
- Minimum wage must also provide for some measure of education, medical requirements and amenities.
- Minimum wage is one which could meet the “normal needs of the average employee regarded as a human being living in a civilized society”
- It is the standard rate which a trade union attempts to establish by collective bargaining.
- Fixation of minimum wages are there in sweated trades as well as non-sweated trades. These days minimum wages for all types of employments has been fixed by law. It is a lower limit set by governments for the wages to be paid to different kind of labours.

Minimum WAGE ACT 1948

- workers in developing country like india with a high rate of unemployment can be exploited by employers because of their existing low bargaining power. In such circumstances workers may receive wages that is much below the expected level and can result in an inability of the workers to meet his daily needs.
- The minimum wages act 1948 was to secure the welfare of the unorganised workers in certain industries by fixing the minimum rates of wages.
- In July 2015 the national floor level of minimum wages was raised to rs. 160 per day. National floor level minimum wage has been revised again to rs. 176 per day from June-17

Objective of minimum wage

- ✘ To provide minimum wages to the workers working in organized sector
- ✘ To stop exploitation of the workers
- ✘ To empower the government to take steps for fixing minimum wages and to revising it in a timely manner
- ✘ To apply this law on most of the sections in organized sector (scheduled employment)

Benefits of minimum wages act

- Minimum wage can create an incentive to work: it also creates desire to pursue more education or experience because it can lead to a higher wage in future.
- A minimum wage promotes stability in the general workforce. Labour turnover would be less
- Increase in national income; minimum wage act will increase income of an individual and income will lead to more and more expenditure and that is how national income will increase
- Industrial peace: reduce labour unrest and maintain industrial peace
- Promotes equality throughout society

2) MONEY WAGES

- The amount of **money received** by the labours in the process of production are called the money wages or nominal wages. Money wages is calculated in terms of money paid either for **mental labour or physical labour** to workers.
- It can be **per hour, per day, per week or per month** and so forth
- In **unorganized sector** money wages are paid on the basis of per day or per week. In **organized sectors**, money wages are paid on the basis of month.
- Determined by **demand and supply** of labour. If supply of labour increases the money wage will decrease and vice a versa
- Workers earn higher money wages than workers who lack **skills**.
- Workers who have **unions negotiating** on their behalf may earn higher money wages than workers who perform similar task but work in an industry where unions are scarce.

3) REAL WAGES

- Real wages are wages adjusted for inflation or equivalently, wages in terms of the amount of goods and services that can be bought.
- Real wages provide a clearer representation of an individual's wages in terms of what they can afford to buy with those wages.
- For example a worker gets Rs. 20000 per month from his organization in exchange of services rendered by him. In this case 20000 is money wage. On the other hand real wages can be defined as the amount of goods and services that a worker purchases from his money wages.
- Formula: $\text{Money wages} / \text{general price level} * 100$
- If money wages increased by 5% but inflation was also 5 % this would mean the purchasing power of wages had stayed the same. The net effect would be the same as a wage freeze. However if money wages increased by 2% and inflation rate is 3% in this situation real wages are effectively falling by 1%

Factors affecting real wages

- Nature of job: permanent or temporary. Seasonal
- Possibilities of extra earning: in some occupation employee receives extra benefits like well furnished bungalow, free medical help etc. this can increase his real wages
- Form of payment: real wages are influenced by the form of payment. Generally workers are paid money wages but sometimes in addition to money wages workers receive subsidized ration or free lunch, and living quarters, free bus service. All this increase real wages
- Working hours and job conditions: in hazardous conditions adversely affect health and in that way real wages are less
- Price level: if low real wages are more and if price level is high real wages will be low.
- Money wages: high money wage leads to high real wages in terms of high purchasing power.
- Social status: clerk of government office and private office, salary wise same but real wage of government clerk would be high.

4) SUBSISTENCE WAGES

- the lowest wage upon which a worker and his family can survive
- Subsistence means the minimal resources that are necessary for survival.
- To maintain bare lively hood

Adam Smith's subsistence wage theory

- Subsistence theory was developed by Adam Smith, who is regarded as the father of economics. According to subsistence theory, wages should be at the level where a worker can satisfy his/her own needs as well as the needs of his/her family. This level of wages is termed as subsistence level.
- In case, the level of wage rises beyond the subsistence level, then the size of population would increase as the worker may get married and have children. This increase in population would increase the supply of labor. As a result, the wage level would again come down to the subsistence level.
- On the other hand, if the wage level falls below the subsistence level, then the worker may not think of getting married. This would decrease the labor supply. In such a case, the wage level needs to reach back to the subsistence level so that the supply of labor can be increased.

Karl marx's subsistence wage theory

- According to marx, labour does not sale labour but sells his labour power. The worker does not sell, nor capitalist purchase labour. Rather the commodity exchanged is labour power. Marx argues that the value of labour power is determined in the same way as any other commodity by the number of hours required to produce it.
- Hence if it requires 6 hours of labour to exchange the necessaries of life, physically historically and morally determine, the worker is then paid equivalent to 6 hours labour. Remaining hours of labour time is considered as surplus labour out of which profits, rents, interests etc are paid.

5) Fair WAGES

- Fair wages are equal to that received by workers performing work of equal skill, difficulty or unpleasantness.
- Whatever is reasonable for the type of work done
- Generally applies to construction, trades and sometimes cleaning and security workers

Backward bending supply curve of labour

- Supply of labours is not measure in terms of total number of workeers . The term supply of labor is related with total working hours available in a particular period of time.
- Supply of labour means the number of hours of a given type of labour which will be offered for hire at different wage rates.
- Usually the relationship between the price and labour and the total amount of labour supplied is direct one.
- In initial stage when wage rate are low workers prefer to work more so greater quantity of labour
- The supply of labour is affected by social economic and political factor in economy. It include size and compostion of population, mobility of labour, efficiency of worker
- One more factor in supply of labour is work-leisure ration which in turn is affected by changes in wage rates.

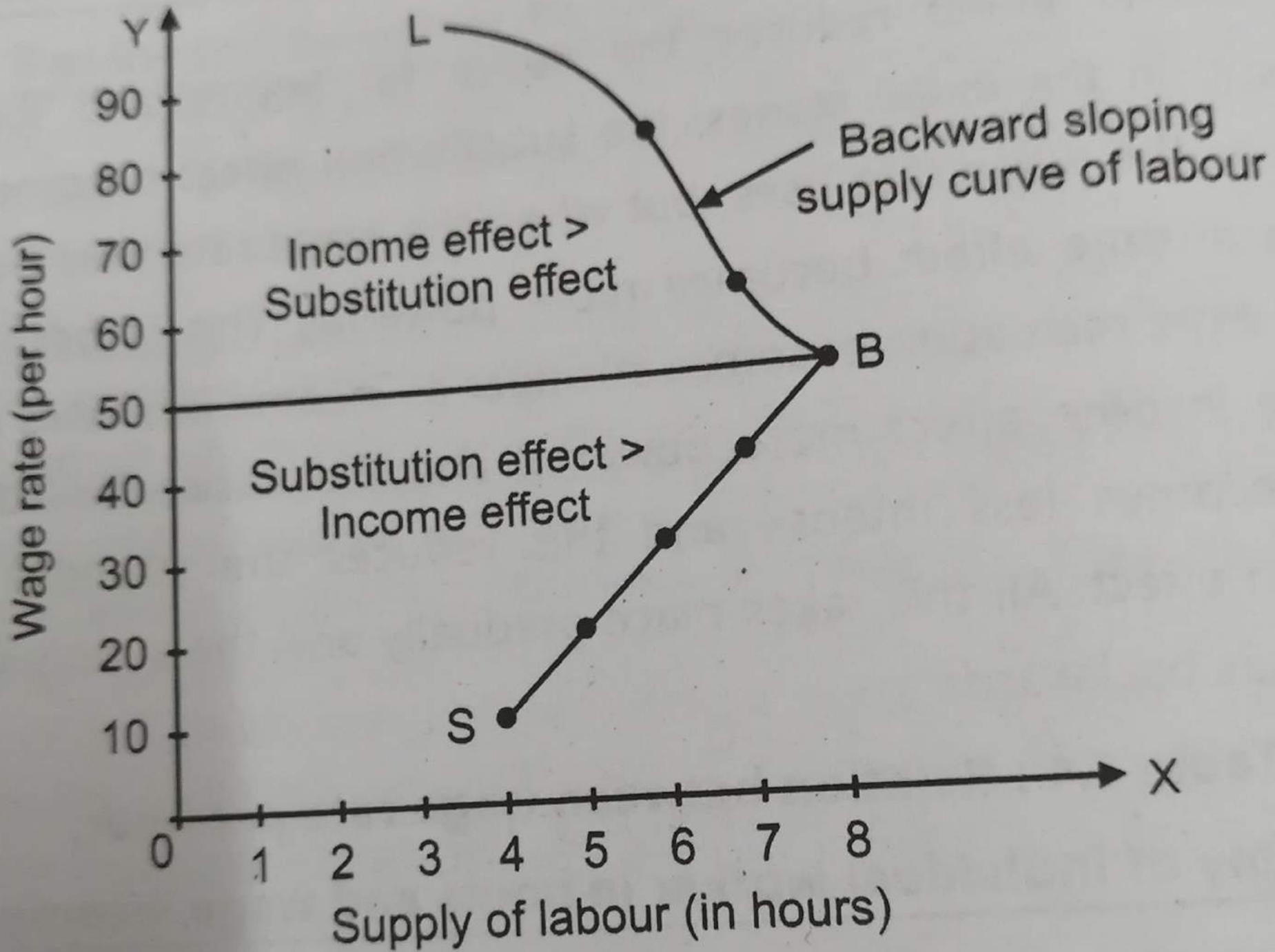
The labour supply curve shows how changes in **real wage** rates might affect the **number of hours** worked by employees.

In economics, a backward-bending supply curve of labour, or backward-bending labour supply curve, is a graphical device showing a situation in which as real (inflation-corrected) wages increase beyond a certain level, people will substitute leisure (non-paid time) for paid worktime and so higher wages lead to a decrease in the labour supply and so less labour-time being offered for sale.[1]

The "labour-leisure" tradeoff is the tradeoff faced by wage-earning human beings between the amount of time spent engaged in wage-paying work (assumed to be unpleasant) and satisfaction-generating unpaid time, which allows participation in "leisure" activities and the use of time to do necessary self-maintenance, such as sleep. The key to the tradeoff is a comparison between the wage received from each hour of working and the amount of satisfaction generated by the use of unpaid time. Such a comparison generally means that a higher wage entices people to spend more time working for pay; the substitution effect implies a positively sloped labour supply curve. However, the backward-bending labour supply curve occurs when an even higher wage actually entices people to work less and consume more leisure or unpaid time.

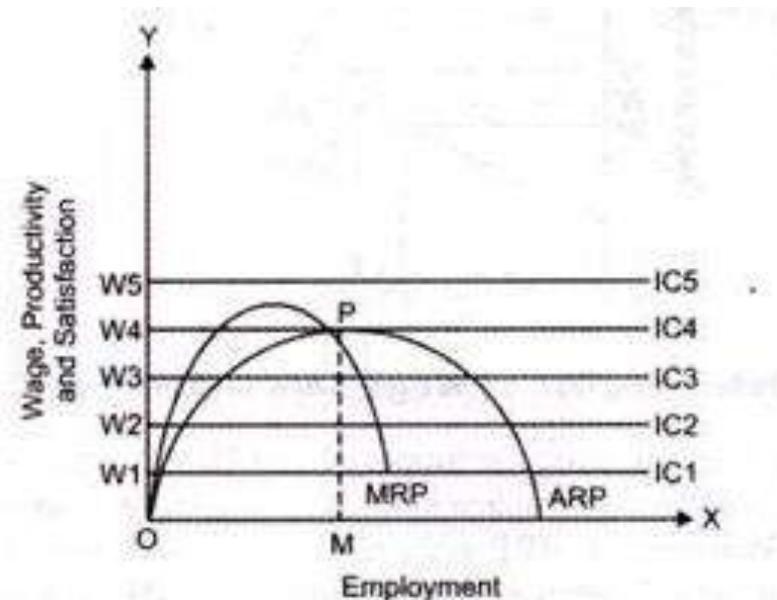
**Table 4.4 : Relation between wage rate per hour,
supply of individual worker in hours and wage income**

Wage rate per hour (₹)	Supply of individual labour (in hours)	Per day income of labour (₹)
10	4	40
20	5	100
30	6	180
40	7	280
50	8	400
60	7	420
80	6	480



Role of collective bargaining in wage determination

- Collective bargaining is the process of negotiation between firm's and worker's representatives for the purpose of establishing mutually agreeable conditions of employment



Perfect competition and role of collective bargaining in wage determination

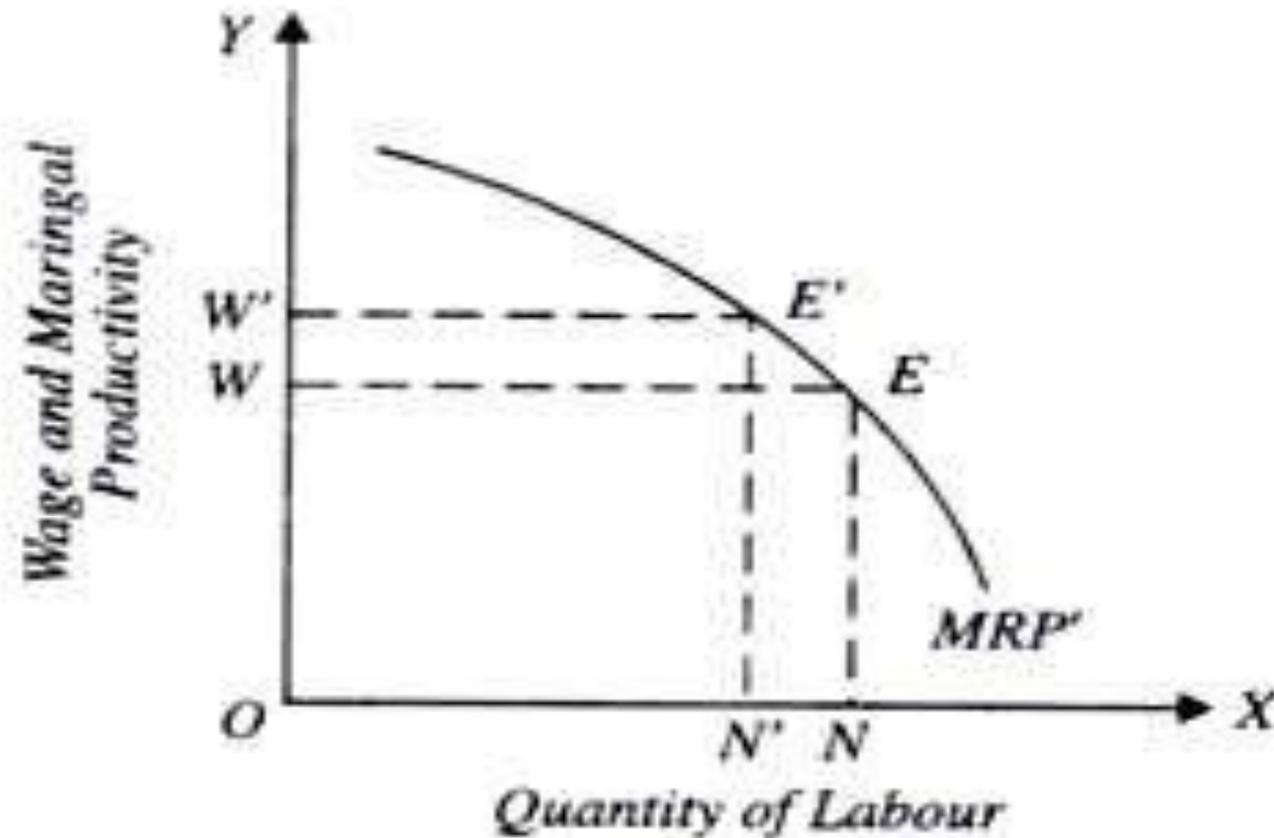
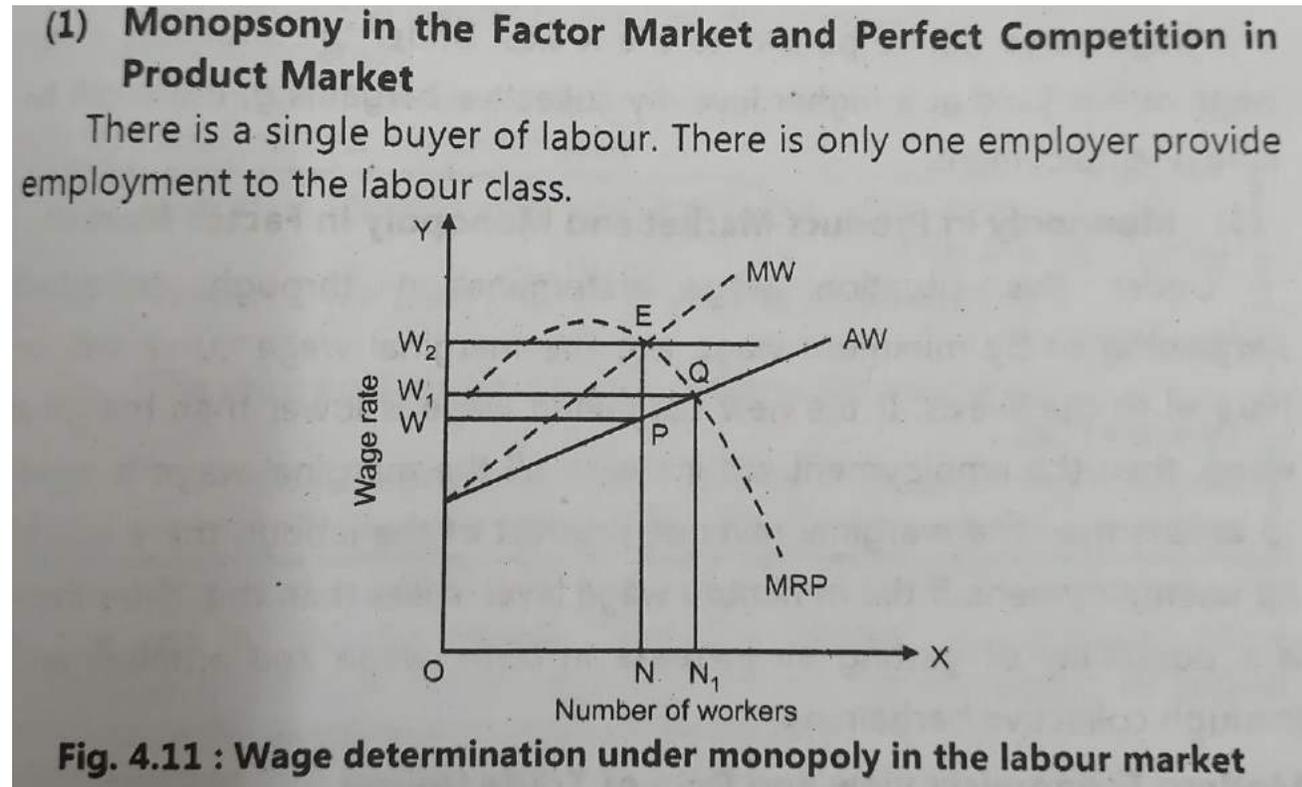


Fig. 33.15. *Marginal Productivity Theory: Trade unions cannot enhance wages without creating unemployment.*

Imperfect competition and role of collective bargaining in the wage determination

There is a single buyer of labour, there is only one employer provide employment to the labour class. Because of collective bargaining firm can increase the wages but can not go beyond the point where $MRP = MW$.



interest

- Interest is the income which goes to the owner of the capital
- Interest is the price paid for the use of loanable funds.
- The price paid for the use of capital in any market

Supply of Loanable Funds:

(1) **Savings**, Savings done by households and firms out of their incomes are the biggest source of loanable funds. $Saving = Y - C$.

(2) **Dishoarding**, Dishoarding means bringing out hoarded money into use and thus constitutes a source of supply of loanable funds. Individuals are free to dishoard the idle cash balances from a previous period thereby making them active. People hoard money to satisfy their desire for liquidity. At a low rate of interest there is not much of an inducement to lend more at high rates of interest and less at lower rates.

(3) **Bank money** bank advance loans to the businessman and industrialists through the process of credit creation. The money created by bank adds the supply of loanable funds.

(4) **Disinvestment** Disinvestment means not providing sufficient funds for depreciation of

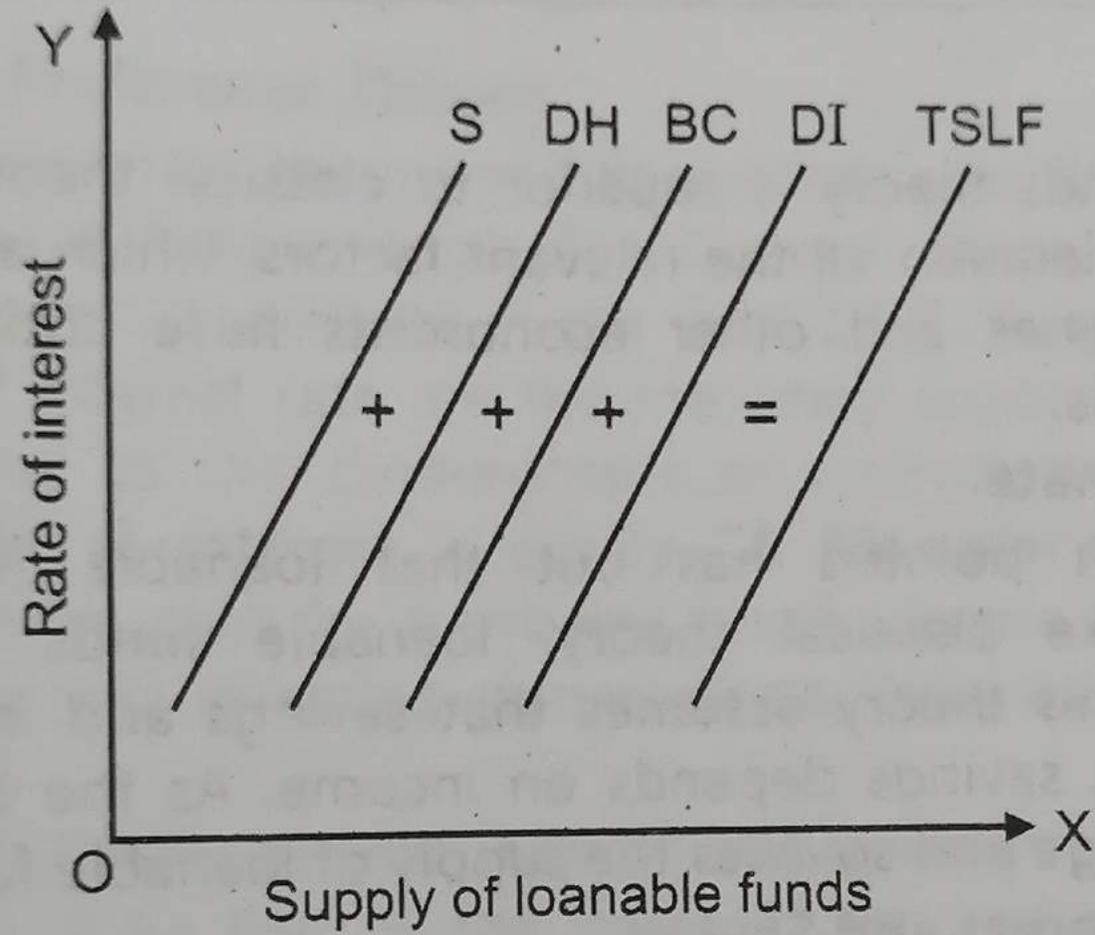
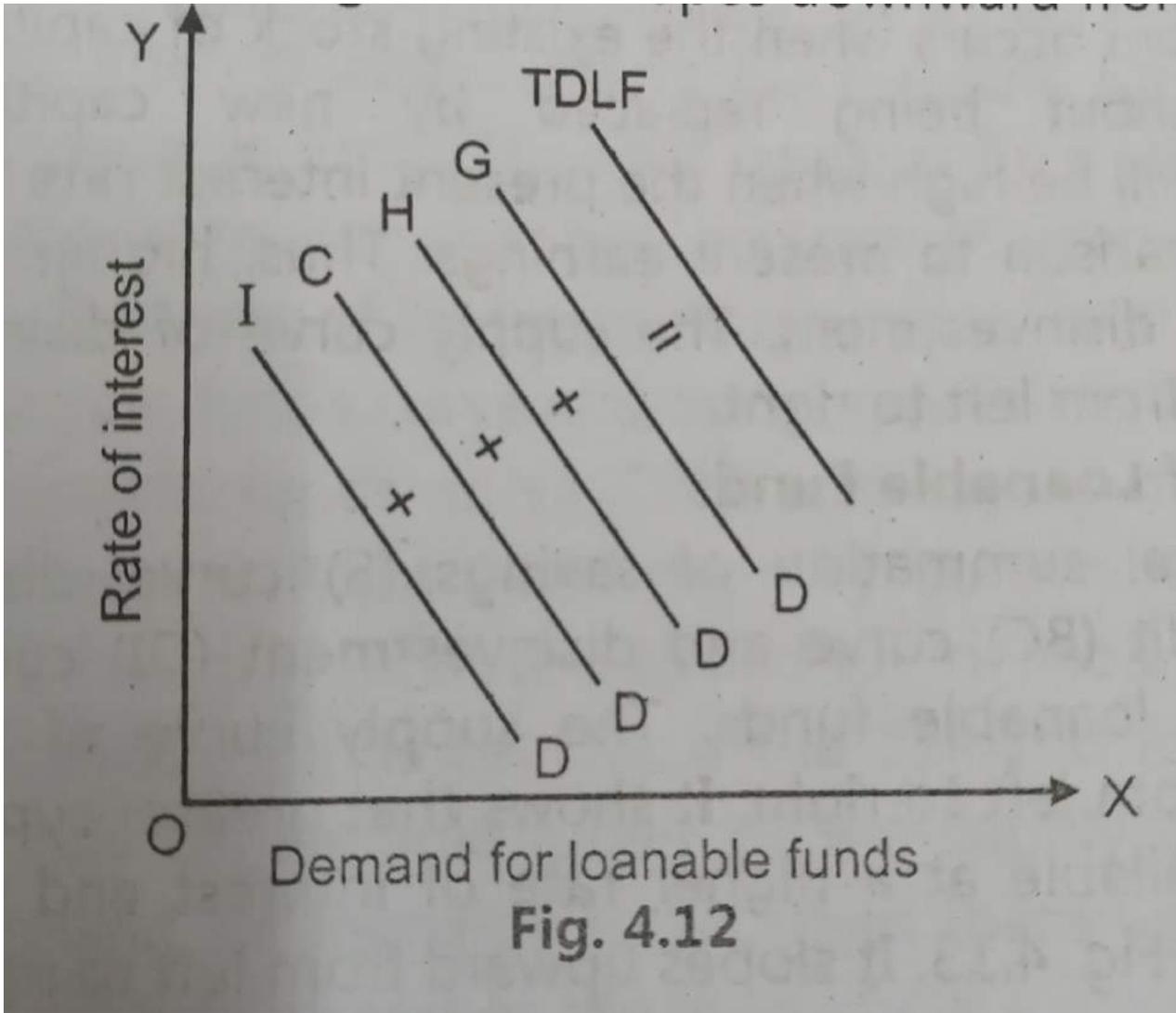


Fig. 4.13

Demand of loanable funds

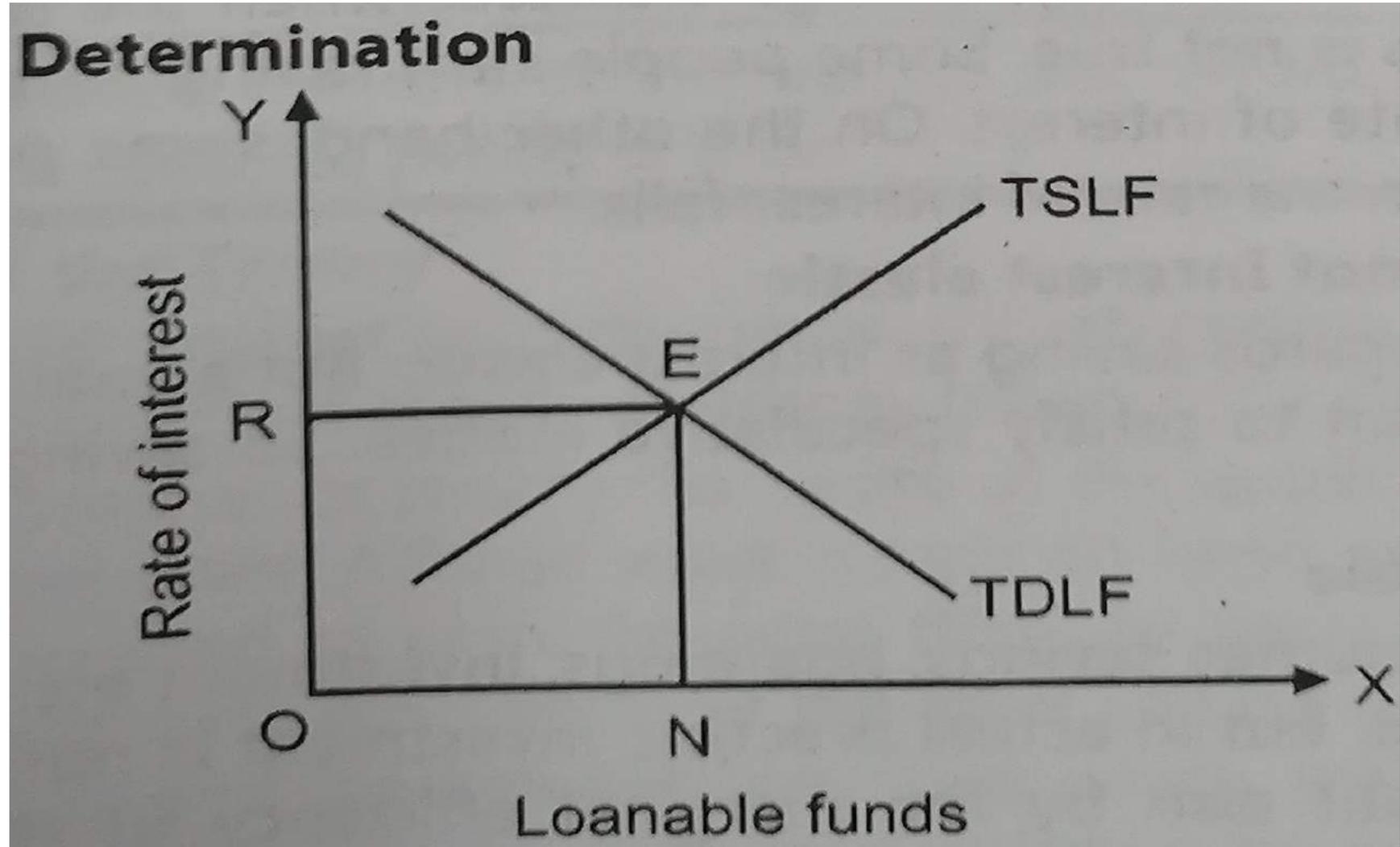
- **Investment Demand:** from business firms which borrow money for purchasing or making capital goods. At higher interest rate demand for loanable fund will be less and vice versa.
- **Consumption demand :** from consumers to buy necessities, luxuries, durable and non durable goods, services etc. more the income more demand for consumption.
- **Demand for hoarding:** to satisfy the need of liquidity. At higher rate of interest people would not like to hold their money;
- **Government demand:** for social welfare and development of the country



Demand for loanable funds

Fig. 4.12

Interest rate determination



Liquidity preference theory of interest

- Keynes define, the rate of interest as the reward for parting with liquidity for a specified period of time.
- People out of their income intend to save a part of it. How much of their resources will be held in the form of cash and how much will be spend depends upon their liquidity preference.

demand for money

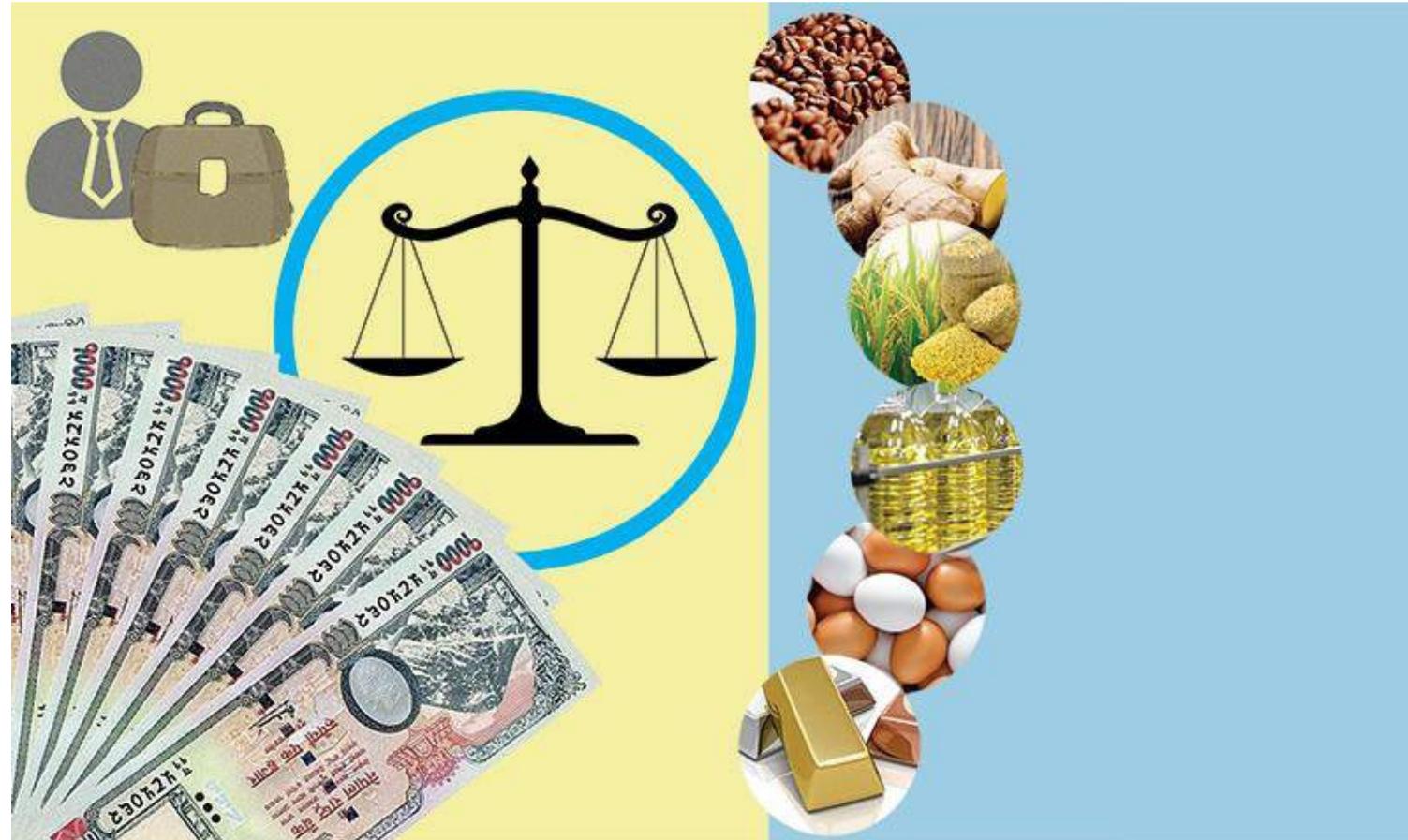
money demand is usually explained in terms of the **three motives** for :

the transactions,
the precautionary,
the speculative motives.

Transactions motive

- **Transactions motive.** The **transactions motive** for demanding money arises from the fact that most transactions involve an exchange of money. Because it is necessary to have money available for transactions, money will be demanded. The total number of transactions made in an economy tends to increase over time as income rises. Hence, as income or GDP rises, the **transactions demand** for money also rises.

Money require to buy things: transactions



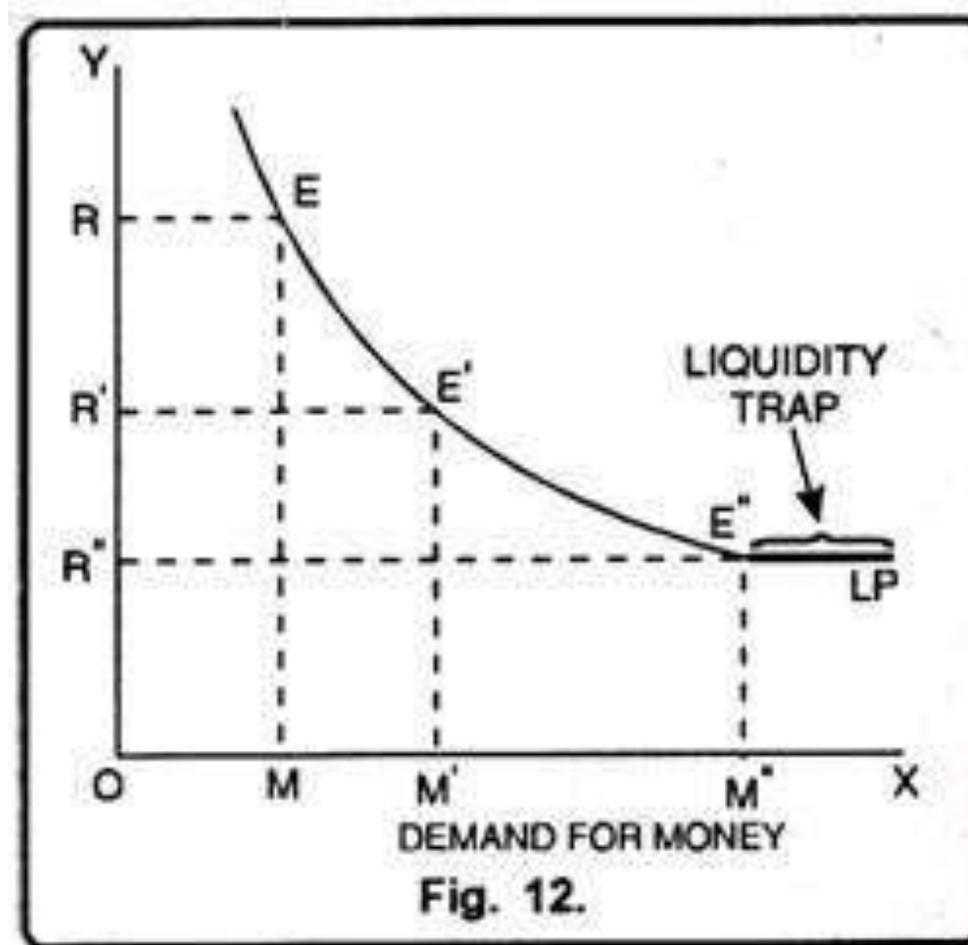
Precautionary motive

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

Speculative motive

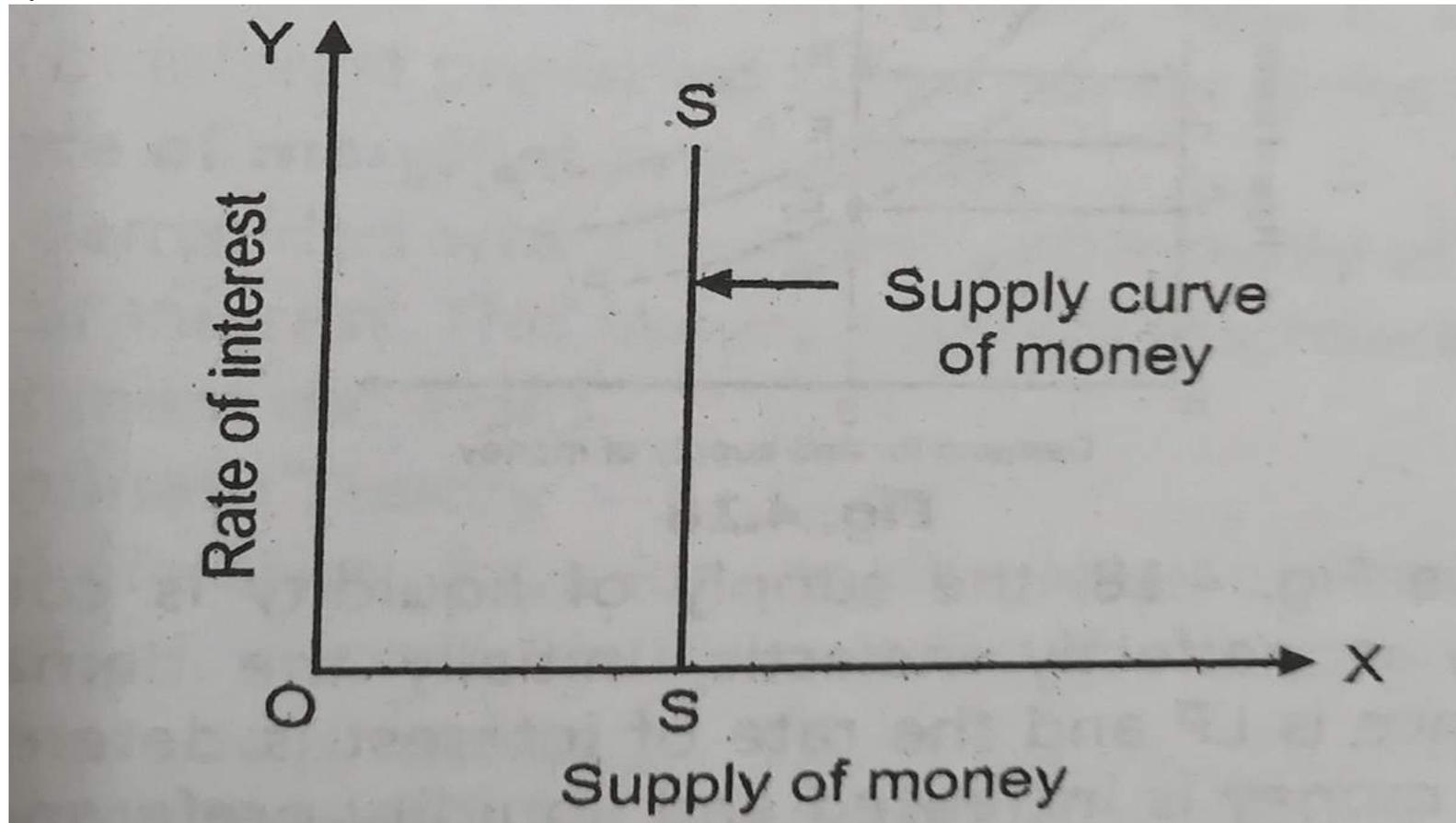
- **speculative motive.** Money, like other stores of value, is an asset. The demand for an asset depends on both its **rate of return** and its **opportunity cost**. Typically, money holdings provide *no* rate of return and often depreciate in value due to inflation. The opportunity cost of holding money is the interest rate that can be earned by lending or investing one's money holdings. The **speculative motive** for demanding money arises in situations where holding money is perceived to be *less risky* than the alternative of lending the money or investing it in some other asset.
- For example, if a stock market crash seemed imminent, the speculative motive for demanding money would come into play; those expecting the market to crash would sell their stocks and hold the proceeds as money. The presence of a speculative motive for demanding money is also affected by *expectations of future interest rates and inflation*. If interest rates are expected to rise, the opportunity cost of holding money will become greater, which in turn diminishes the speculative motive for demanding money. Similarly, expectations of higher inflation presage a greater depreciation in the purchasing power of money and therefore lessen the speculative motive for demanding money.

Curve for demand for money

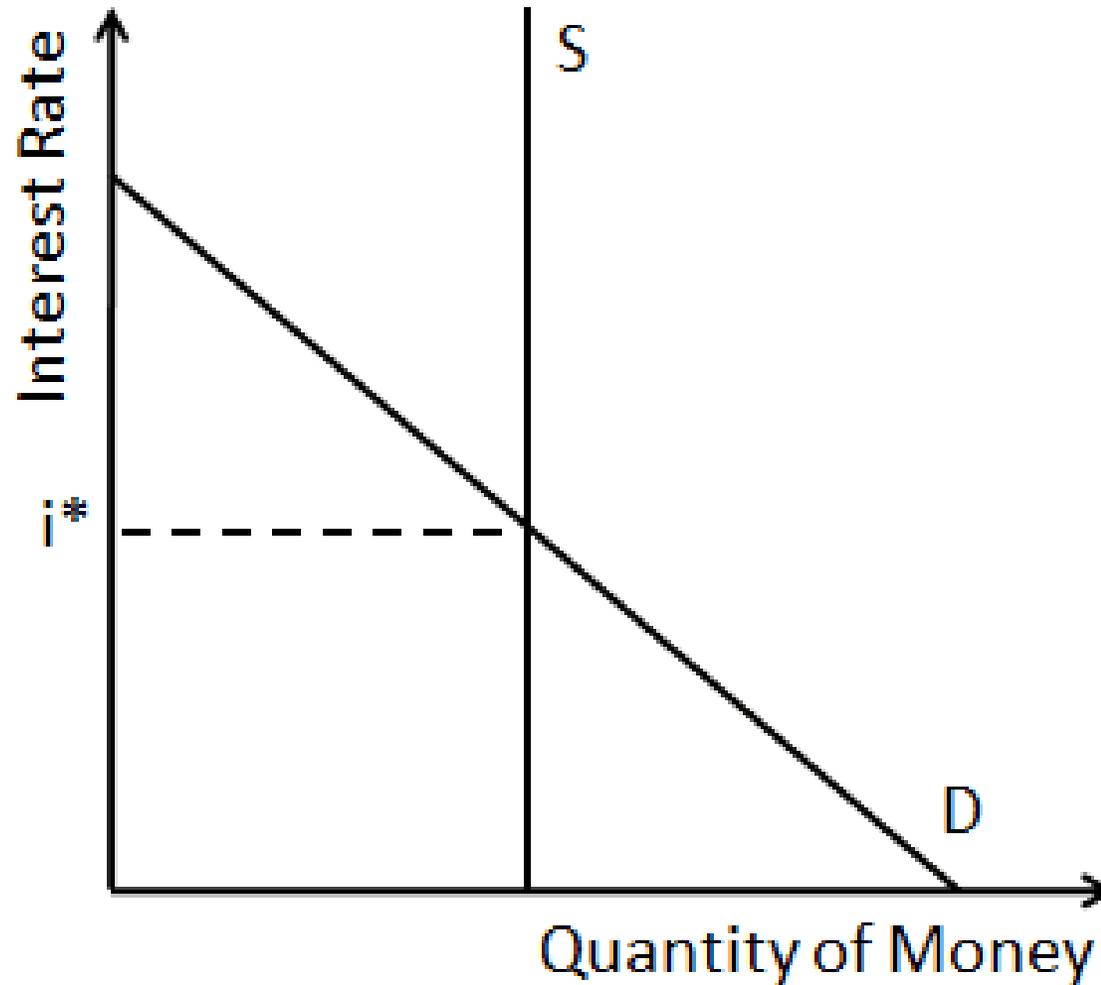


Supply curve of money

The supply of money refers to the stock of money in circulation and as a fixed quantity at a particular time. It is the sum total of currency and commercial bank deposits.



Determination of rate of interest



Profit

Definations:

Profit is the excess of the price of goods over their costs

Profit is the reward for enterprise and innovation

Profit is a reward for uncertainty-bearing, and to risk bearing

Profit= Revenue- costs

Theories of profit

- Risk and uncertainty theory of profit
- Dynamic theory of profit
- Innovation theory of profit

Uncertainty Theory of Profit:

- According to **Professor Knight**:
- "Profit is the reward for uncertainly-bearing and not of risk-taking in a business".

According to him there are two kinds of risks which entrepreneur has to bear. Some risks are of such a nature that they can be anticipated to a fair degree of accuracy

Risk and Uncertainty

- ┌ Generally...risk refers to outcomes that can be insured against, and uncertainty to outcomes that cannot be insured against
- | Knight interprets Risk and Uncertainty in a diff. manner
 - **Risk**- conditions in which profit cannot exist..future is subject to risk
 - Risk is insurable
 - **Uncertainty**- conditions in which profit may exist...future is uncertain.
 - Uncertainty is uninsurable

Insurable risks	Non-insurable risks
<ol style="list-style-type: none"><li data-bbox="359 229 1447 654">1. Risks of loss of property caused by floods, earthquakes and other natural calamities.<li data-bbox="359 711 1447 1135">2. Risks of loss due to dishonesty, such as loss due to theft, robbery, etc.	<ol style="list-style-type: none"><li data-bbox="1447 229 2525 325">1. Risks of competition.<li data-bbox="1447 368 2525 686">2. Risks of technological changes in a dynamic society.<li data-bbox="1447 729 2525 939">3. Risk of cyclical fluctuations in business activity.<li data-bbox="1447 982 2525 1192">4. Risks due to sudden changes in government policy.

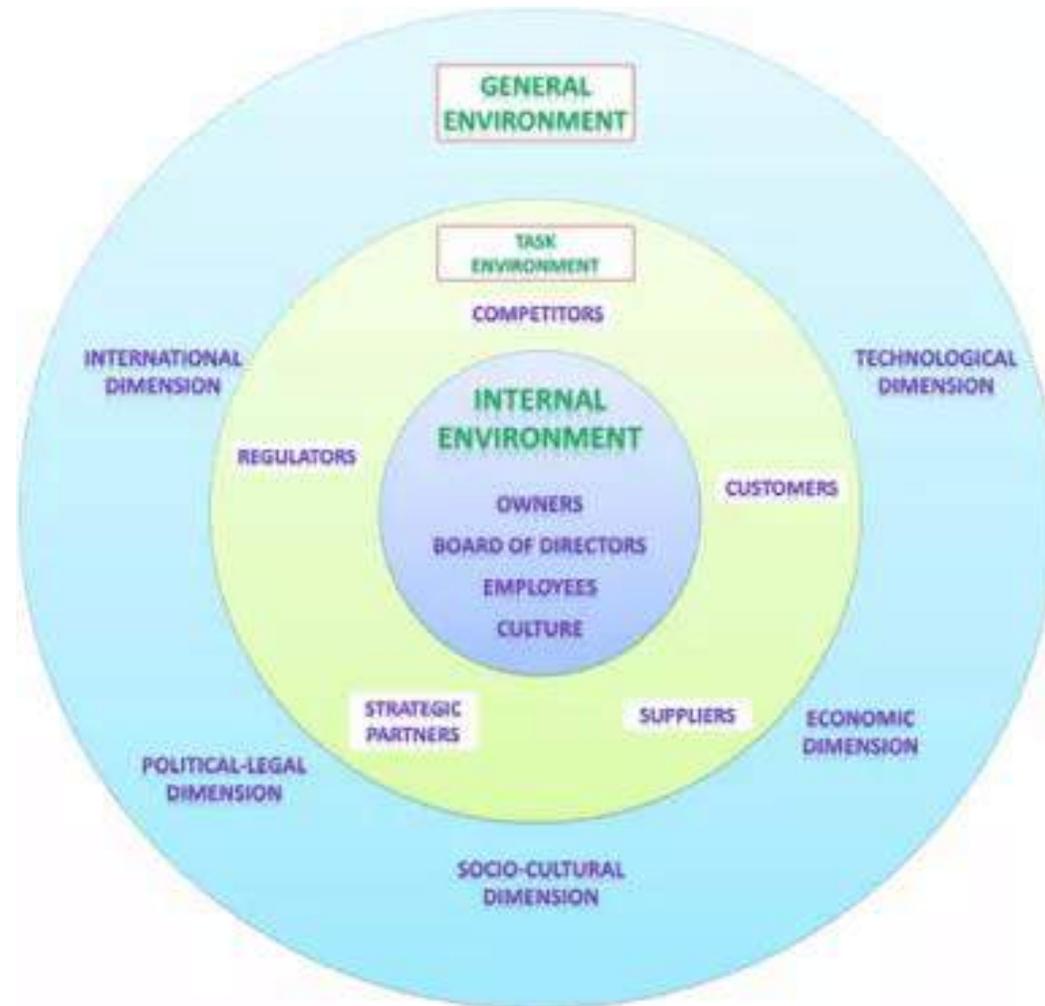
Dynamic theory of profit

DYNAMIC THEORY OF PROFIT

This theory has been put forth by Prof. J.B. Clark. According to him profit is a dynamic surplus that arrive only under dynamic conditions. There is no profit under static condition. In the words of Clark, profit arises because of the difference btw. The selling price of the product and its cost of production. Under static condition there is no change in factors like demand, supply, size of population etc. there is no risk or uncertainty to be faced by entrepreneur.

Each factor of production gets reward equal to marginal productivity. Thus the entire national product is distributed among the factors. Entrepreneur gets only wages of management or normal profit. Under this condition $\text{price} = \text{average cost}$. Hence there is no profit in terms of surplus earning.

Internal and external environment of business



In business nothing is static, internal and external environment in which business is working keeps changing dynamically.

Entrepreneurs earn profit because of understanding of dynamic economic changes and taking the benefit of revenue over cost.

Innovation theory of profit

Innovation Theory of Economic Profits



- This theory given by an "American economist Joseph Schumpeter".



- According to Schumpeter, the principal function of the entrepreneur is to make innovations and profits are a reward for successful innovations.

Innovation Theory of Economic Profits



- Innovation means think different from the rest.
- Above normal profits arise because of successful innovations introduced by the entrepreneurs.
- Above-normal profits that by successful invention or modernization

Innovations may be of two types

1. Those which change the production function and reduce the cost of production. i.e. Introduction of new machinery, improved production techniques or processes.
2. Those innovations which stimulate the demand for the product, i.e., which change the demand or utility function.

conclusion

Why Profits Vary:

- The main reason of inequality in profits lies in the differences in the ability of entrepreneurs. Ability is mainly God-gifted.
- It is this reason which mainly causes differences in profits.