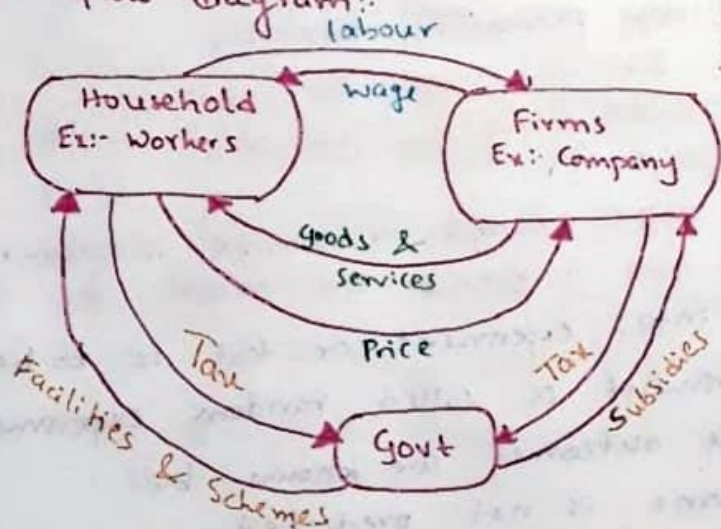


# Micro-economics

- \* Prof name : Radeef sir
- \* Evaluation plan : Tiera exam - 100%
- \* References : Principles of economics by Mankiew
- Price, demand and supply are related.
- Recently price of tomato got inc as supply became less due to heavy rainfall and demand is more.
- Also, price depends on other factors such as tax, individual income, etc;
- Scarcity  $\Rightarrow$  limited resources & unlimited needs.
- micro-economics is derived from greek word *eikonomio*. & it deals with household management.
- Circular flow diagram:



- We can also add foreign companies and financial institutions & markets into the diagram.
- Foreign companies pays FDI, FPI to firms. It provides employment to household, it also pays some tax to gov. Also, households deposit/must money in financial institutions & markets and get profits in return.
- FDI  $\Rightarrow$  Foreign Direct Investment  
Investing to set up production plants.
- FPI  $\Rightarrow$  Foreign Portfolio investment  
Foreign companies buy shares and get profited. In this, they don't invest directly.

## Micro economics (2<sup>nd</sup> class)

Why to study?  $\Rightarrow$  To understand the world.

How to take a good economic decision  $\Rightarrow$  To be smart participant in the economy.

MNC  $\rightarrow$  Multi National Companies

Ex: Deciding whether to join IIT & spend (or) join work & earn. If u join MNC, u can take wise decision on how much money to consume & save. Starting own business / start up.

$\Rightarrow$  Economic policy

To understand govt policies. How they impact economy

2 ways Economists think in are :-

① Positive

"What is"

analyzing

② Normative

"What should be"

Improvement

$\Rightarrow$  Positive means analyzing what's going in present and normative means thinking to make that situation better. They are not same.

10 principles of economics :-

① People face trade off:

Ex: i) Students face with time management in IC/LA courses

ii) Consumers when they want to buy 2 products

Orange / Apple

iii) Firms face this to produce 2 types of goods

iPhone / MacBook

iv) Government face trade off in (efficiency) vs (equality)  $\rightarrow$  equal distribution of welfare

getting max benefit

Ex: Distributing money to poor

There are some policies introduced by govt which ensure equality but no left



benefit will be there for govt.

"If u have to get something, u have to compromise with something" or give up

② The cost of something is what you give up to get it. This cost is opportunity cost.

③ Rational people think at the margin

To buy 1 unit grape  
u have to not buy 2  
units of orange for  
same money.

For Ex  
4 units orange or 2 units grape  
O.C of 1 unit grape  
= 2 units orange.

They do their best to attain their objectives

Consumers  
max satisfaction/  
utility

Firms  
max  
profit

Margins  $\Rightarrow$

Marginal benefit = Total - Marginal income -  
marginal cost

There are 3 terms :- ① Marginal cost  
② Marginal income  
③ Marginal benefit (or) profit

Let us understand these terms using an example. Lasya is the owner of a movie theatre. When, RRR movie is released 98 out of 100 seats in theatre got filled. Each seat cost ₹ 200/. When the show was about to begin in 15 minutes, Black rose (Kala Gulab) & Drug bird who were close friends went to theatre to buy a ticket. But they have only ₹ 300/- with them. Now if Lasya accepts them to watch movie then she will get an income of ₹ 300 or else seats will be unfilled. There will be no loss if for Lasya if seats are sold for lower price. Hence marginal cost is 0. By selling tickets for them, Lasya got income of ₹ 300/-  $\Rightarrow$  Marginal income is 0

$$\text{Marginal benefit} = 300 - 0 \\ = ₹ 300/-$$

Note:-

Drug bird is Swanup Mishra



## Lec-3 :- Micro economics

- ④ People respond to incentives which make person to act.  
 Ex:- offers attract people. → doing something to make others to do what we want.

Any many examples are there such as government schemes of giving subsidies

- ⑤ Trade can make everyone better off.

Trades happen when there is absolute advantage. It can also happen with comparative adv.

- ⑥ Markets are usually a good way to organise economic activities.

The economy was previously managed by govt. Now "market economy" is there. The decision is in hands of firms & households now.

→ based on opportunity cost

7. Government can sometimes improve

- ⑧ A country's standard of living depends on its ability to produce goods & services. Productivity plays crucial role in development of a standard.

- ⑨ There will be price rise when govt prints too much money. (1\$ = 69 billion rupees)  
 There will be inflation. 2x money

- ⑩ Society faces short term trade off b/w inflation & unemployment.

Inflation is inversely proportional to unemployment.

For 5th principle → If cost to make rice & cars are as follows:-

India can import cars from China & China can import rice	India	Rice	Cars
	China	10	20
		20	10

\* In this ex, 2 countries have absolute advantage.

\* Though there is no absolute adv, if we have diff in opportunity costs, still trade happens (comparative advantage)

	R	C
India	10	5
China	8	2

opp cost →

	R	C
India	2	0.5
China	4	0.25

and then trade.

India should focus on R, China on C

⑦ Government can sometime improve market outcome  
They keep some rules & regulation to keep the  
economy proper. property rights

Market failure → Ex:- ① externality (Impact of one  
persons action on other)  
which includes pollution  
Govt operates / ② market power  
govt interferes to organise  
prices to ensure welfare.



# Demand & Supply:- (Lecture - 2) - MICRO ECONOMICS

↓  
depends on  
consumers &  
households

↘ depends on sellers  
and producers

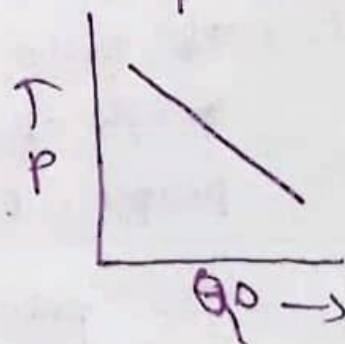
Demand :- It indicates the amount of goods that buyers are willing and able to buy.

\* Sometimes, even if we are willing, we couldn't buy then, demand will be less.

\* Law of demand: If everything remain same, at that case if price ↑ then, Quantity demanded ( $Q_d$ ) ↓ and vice verse  $\Rightarrow P \downarrow \Rightarrow Q_d \uparrow$

\* The representation of  $P$  &  $Q_d$  in a table is called Demand schedule. The graphical representation is as follows.

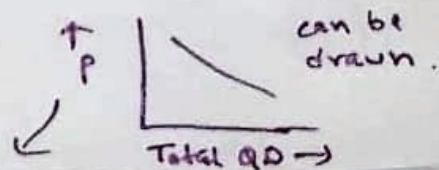
P	$Q_d$



\* To calc whole market demand then we add  $Q_d$  by all persons.

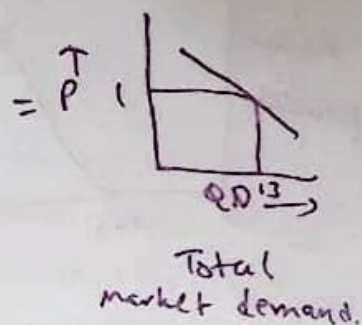
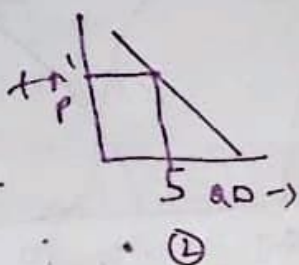
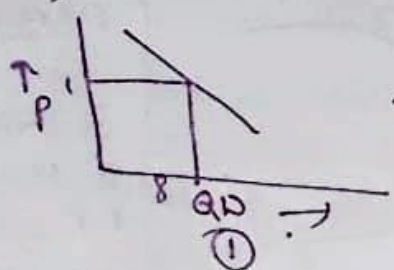
P	$Q_d$ ①	$Q_d$ ②					Total
							① + ② + ...

Like graph is drawn as



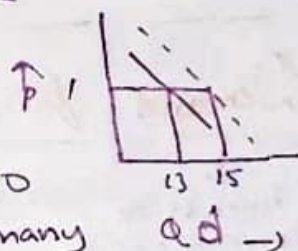
The curve we get is demand curve

For price  $P_1$  for 1 icecream then, for 2 persons,



\* Income also plays a role in demand. Income &  $Q_d$  are positively related. So, if income inc then, graph b/w  $P$  &  $Q_d$  shifts towards right when the price is unchanged

coz people purchase more. Similarly if income  $\downarrow$ , then graph ~~dec~~ shifts towards left. Income &  $Q_d$  can also be negatively related. Ex: If income inc many people buy cars instead of bicycles. So, positively related goods are normal goods and other are inferior goods.



\* Another influencing factor is price of related goods. Ex: Tea & Coffee, Pen & pencil.

If  $P \uparrow$  for tea then  $Q_d$  for coffee  $\uparrow$  and vice versa. Such goods are called substitutes.

\* There are also another types of goods known as Compliments. Ex: Car & petrol, computer & software, mobile & sim. These are needed to be purchased together. So, if price of one inc then  $Q_d$  of that dec then demand for that complimentary products dec

→ If price of relative product or substitute  $\uparrow$  then, graph of the original product shifts to right as people choose less price items hence its  $Q_d \uparrow$ .

→ If price of compliments  $\uparrow$  then, graph of original product shifts toward left. coz if price of compliment  $\uparrow$   $Q_d \downarrow \Rightarrow Q_d \downarrow$  for the compliment also.



\* Taste, preferences, expectation, No. of buyers also influence demand.

Taste :- Tea & coffee

Preferences :- Ice-cream in summer, Umbrella in rainy

Expectation :- (Depends on quality of product and satisfaction of customer). (Gold buying) Ex :- If price may dec we won't buy now.

No. of buyers depends on the above factors.

These are the examples where demand is influenced by these factors.

recently sanitizers buyers ↑



## Lecture - 5

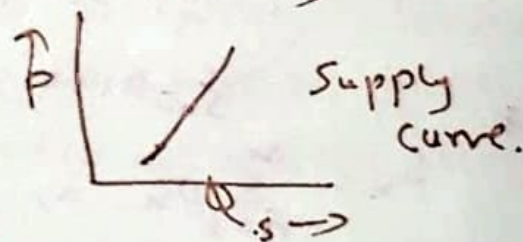
### Supply:-

\* It's the amount of goods that sellers are willing and able to buy.

\* Law of supply:- Price  $\uparrow$  sellers inc the supply to gain more profit. ( $Q_s$  = Quantity supplied)

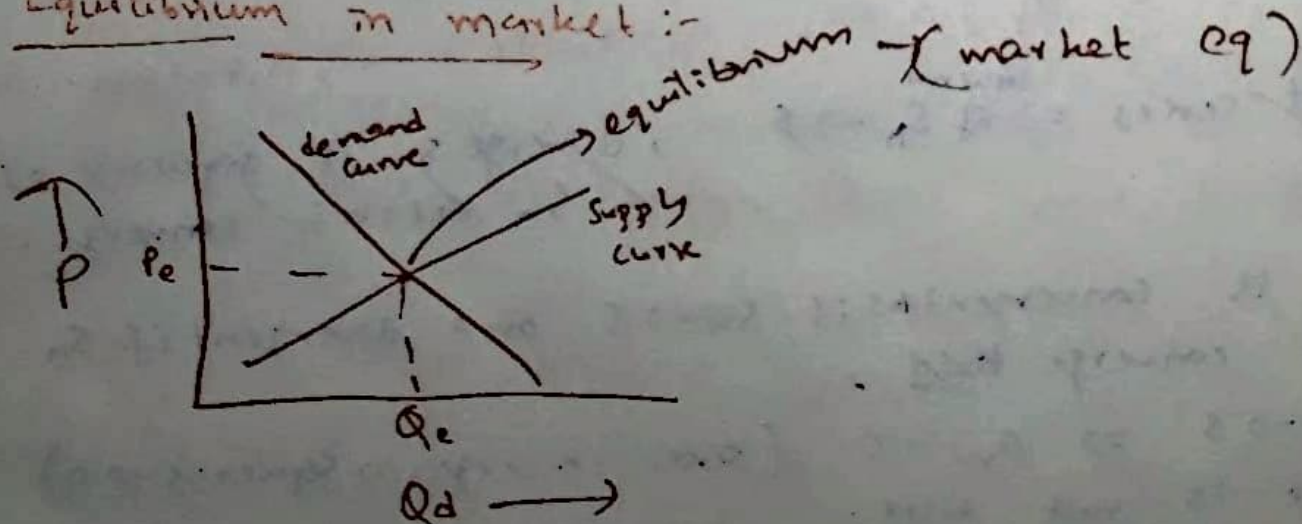
P	$Q_s$

Supply table.

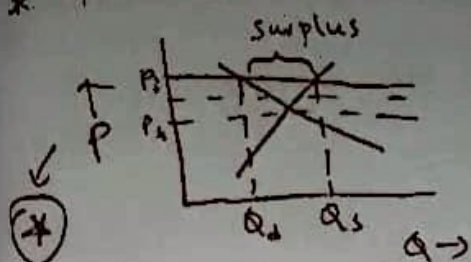


- \* Supply depends on input price. It is the price of making a good.
- \* Technology inc efficiency and productivity of supply.
- \* Expectation can also influence supply. If a price of a good is expected to rise then company stores that good for future.
- \* It also depends on no. of sellers.

### Equilibrium in market:-

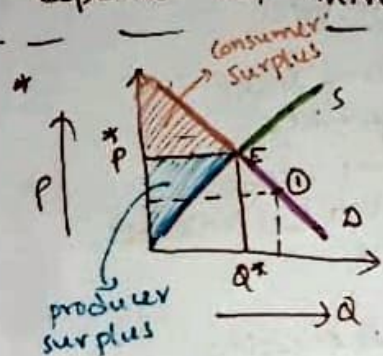


\* If market is not in eq then, (price is above eq).



\* When the price is above eq, not all can supply coz for some people cost of production is greater than equilibrium price which leads to loss.

\* In the similar way, when the price is more, even consumer income is meeting the price, buying depends on mindset of consumer and valuation.



Person ① will not buy coz he value that good less than the equilibrium price. So, for him eq. price is more to afford. People on pink line won't buy the good. People in the region of orange line buys the good. similarly.

Consumer Surplus

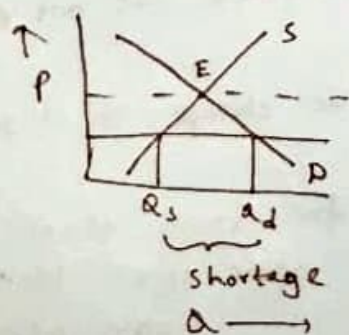
= Price consumer is willing to pay - Eq price.

Firms on green color line will not produce becoz their cost of production will be more than the selling price.

Firms on blue line will produce goods as they get profit and that area shaded by blue colour indicates producer surplus

Producer surplus = price - willingness to accept.

\* If market is not in eq then, (price is below eq)



It is brought back to equilibrium coz people pay more money as supply is less. demand is more.

In (\*), it is brought back to eq as companies reduce the price as supply is more.

\* We can also shift the equilibrium by shifting the demand and supply curves by changing the factors affecting them.



## Elasticity:-

It is the responsiveness of  $Q_d/Q_s$  for change in one of its determinants.

### \* Price elasticity of demand

#### ① Elastic demand

There will be big change in  $Q_d$  for change in price

Ex:- Cars, gold, etc.

↓  
Luxury

#### ① Inelastic demand.

There will be small change in  $Q_d$  for change in price

Ex:- Food items, such as sugar, rice, other thing such as petrol, internet, medicine

↓  
Necessity

### \* Things that influence elasticity of demand

⇒ Necessity or Luxury  
↓  
inelastic      ↓  
                    elastic

⇒ Availability of close substitute or not available  
↓  
elastic      ↓  
                    inelastic  
Ex:- Tea & coffee      Ex:- medicine

### ⇒ Definition of Market

Narrow  
ice-cream  
elastic

Broad.  
Food  
inelastic

⇒ If market is narrow then price change affects demand but broad markets are not affected

### ⇒ Time horizon :-

As time passes there can be change in elasticity.

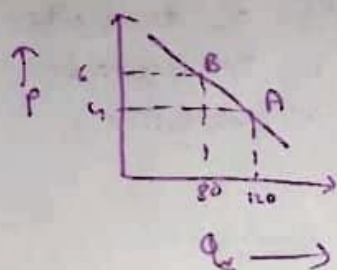
Ex:- petrol

If its price is inc, for some years it will be inelastic but after some years there may be change in demand as many men may shift to electric vehicles. So, as time passes it becomes ~~etc~~ elastic.

# Lec-6 (Micro-economics)

Price  
Percentage  
elasticity  
of demand =  $\frac{\% \text{ change in } Q_d}{\% \Delta \text{ in } P} = \frac{\frac{\Delta Q_d}{Q_d}}{\frac{\Delta P}{P}} = \frac{\Delta Q_d \cdot P}{\Delta P \times Q_d}$

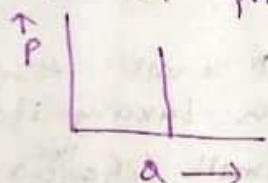
(No need to consider signs)



When moving from A to B & B to A we get different answers. Hence it is not that suitable to calculate elasticity. Hence we use midpoint method.

Ped (Price elasticity of demand) =  $\frac{\Delta Q_d}{\Delta P} \times \left( \frac{\frac{P_1 + P_2}{2}}{\left( \frac{Q_{d1} + Q_{d2}}{2} \right)} \right)$

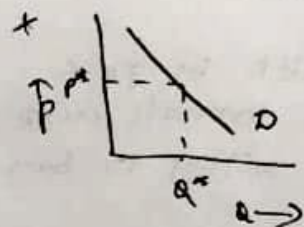
- \* If  $ped \geq 1 \Rightarrow$  elastic  $\rightarrow$  slope
  - \* If  $ped < 1 \Rightarrow$  inelastic  $\rightarrow$  slope of demand curve is  $\geq 1$
  - \* If  $ped = 1 \Rightarrow$  unit elastic [  $ped = \infty \Rightarrow$  perfectly elastic ]
  - \* If  $ped = 0 \Rightarrow$  perfectly inelastic (mostly happen when there is perfect substitute)
- In this case demand will not be effected by change in price - here graph look like



There are only few examples for perfectly inelastic goods.  
Ex: Oxygen, Life saving medicines

Elasticity  $\Rightarrow$  determined in terms of %  
slope  $\Rightarrow \frac{\Delta P}{\Delta Q}$

- \* If  $ped = \infty \Rightarrow$  perfectly elastic



$\Rightarrow$  Total revenue =  $P \times Q$

For elastic as  $P \uparrow$   
 $Q \downarrow$  rapidly hence  $R \downarrow$

For unit elastic as  $P \uparrow$  &  $Q \downarrow$  equally.  
So,  $R$  is constant

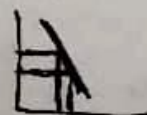
For inelastic as  $P \uparrow$  &  $Q \downarrow$  slightly  
hence  $R \uparrow$

Graphs:- P vs  $Q_d$  (P on Y-axis, Q on X-axis)

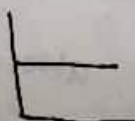
Elastic



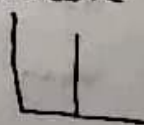
Inelastic



perfectly elastic



perfectly inelastic



Unit elastic





\* Gross price elasticity of demand

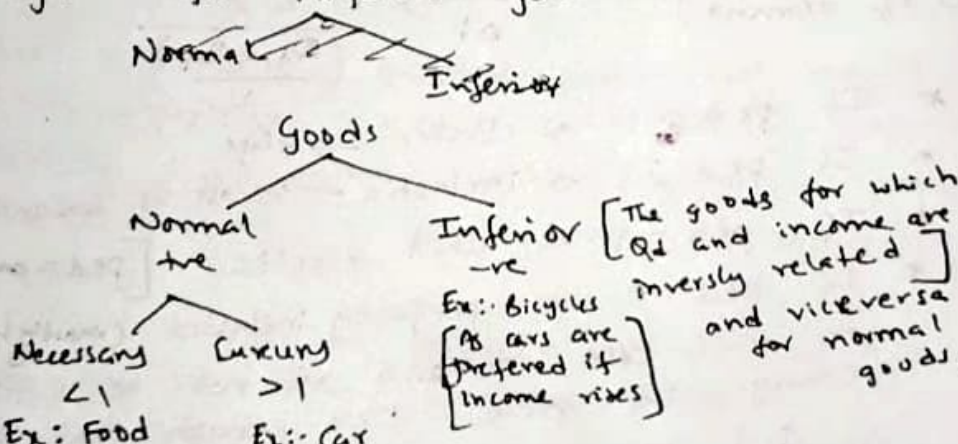
$$= \frac{\% \text{ Change in } Q_d \text{ of good 1}}{\% \text{ change in price of good 2}}$$

When the two goods are substitutes of each other then the sign is positive and if two goods are complementary then sign will be negative

\* Income elasticity of demand

$$= \frac{\% \Delta \text{ in } Q_d}{\% \Delta \text{ in income}}$$

Sign of this is ~~negative~~ <sup>positive</sup> in case of normal goods and negative for inferior goods

Normal 

Goods

Normal

Inferior

Necessary

Luxury

Ex: Food

Ex: Car

Though your income increase u will consume almost similar. <sup>increase</sup>  
For small (change) in income there won't be big change in Q

If ur income ↑ u will think of spending it on luxury items.

For small (change) <sup>inc</sup> in income, we generally try to avoid luxury goods buy

Price Elasticity of Supply:-

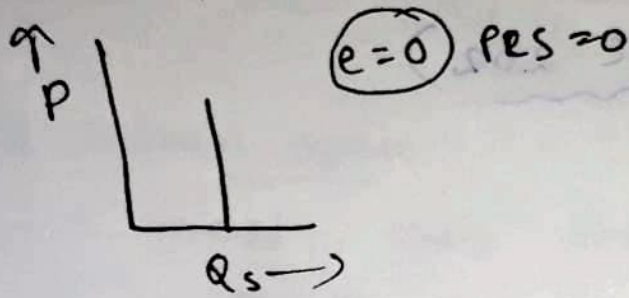
Inelastic:- They are necessities. A shift in price doesn't effect consumer demand or overall supply of good coz people will be always willing to buy.

Ex:- Housing

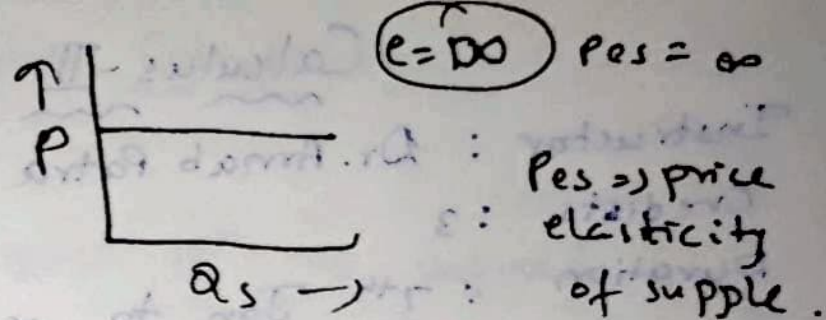
Elastic:- There will be impact on supply on changing price of good.

Ex:- Books, pen

These may have alternatives.

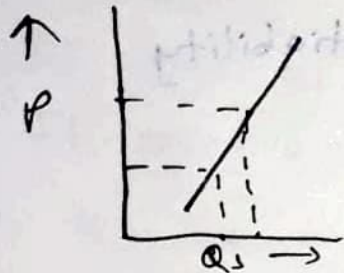


perfectly inelastic

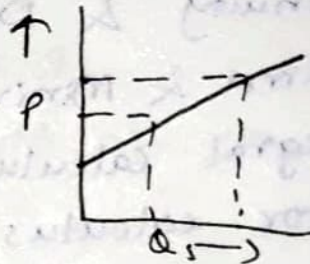


perfectly elastic:

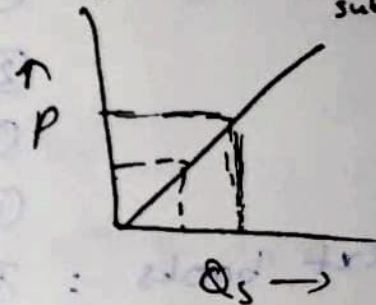
mostly happens when there is perfect substitute



inelastic



elastic



unit elastic

\* If  $PED < 1$ , then only we should increase the price of a product, so that total revenue will not be decreased.



## Lec-7 (Micro-economics)

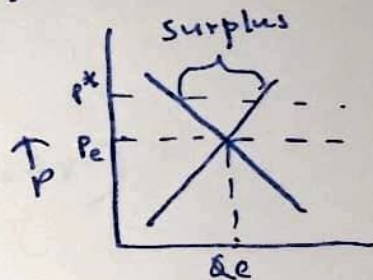
### ROLE OF GOVERNMENT:

Price-ceiling & Deciding legal maximum price.

The max price for which a good can be sold.

\* Price ceiling above equilibrium level:-

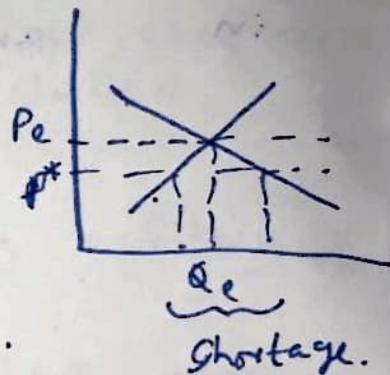
Though price ceiling happens, it will not affect market. Hence it is not binded. It is because, as firms have surplus, hence they sell at normal price which is below the legal max price and therefore market comes to equilibrium.



Price ceiling below equilibrium:-

Here, firms can't increase the price above the legal max price. Hence it is binded.

In this case there will be shortage but also firm's can't increase the price. This results in many problems



\* Rationing → U have <sup>to</sup> stand for more time to buy a product.

\* Personal bias

It depends on opportunity cost too



There is a change that people sell to their relatives which creates decrease in consumer surplus.

Ex:- Fruit seller loses his business if he wanted to buy a good and stands in que.



Price flooring:-

Imposing legal minimum price for which a good can be sold.

\* When price flooring is done below equilibrium price, it is not binding. As there is a shortage, the market automatically goes back to equilibrium.

\* When price flooring is done above equilibrium price, it is binding. In this case there will be surplus. Here, people may show personal bias and buy goods from their relatives which results in decrease of producer surplus. Ex: MSP

Ex: Minimum wage.

(Minimum selling price)

## Tax:-

- \* Tax incidence tells us how the distribution of tax burden took place among sellers & buyers.
- \* Imposing tax will not affect the demand curve.
- \* It causes supply curves to shift towards left
- \* Becoz, profit dec as Tax inc

$$\text{Profit} = \text{Price} - \underbrace{\text{Cost of production}}_{\text{includes tax}}$$

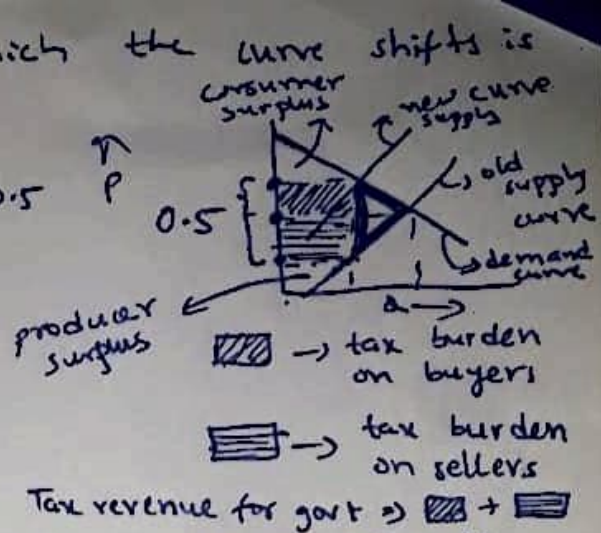


\* This distance through which the curve shifts is equal to tax

Ex:-

$P$	$Q$	$Q'$
0	0	0
0.5	2	0
1	3	2
1.5	4	3

If tax = 0.5 then,



\* Hence as tax  $\uparrow$ , equilibrium price is increased.

\* Though the buyers are paying more there is no benefit to sellers.

\* Buyers are sharing the burden because as supply curve shifted to left, to overcome shortage they pay more.

\* As tax is imposed, some part of surplus got converted into tax revenue. As a result both consumer & producer surplus got reduced.

\* In this case,

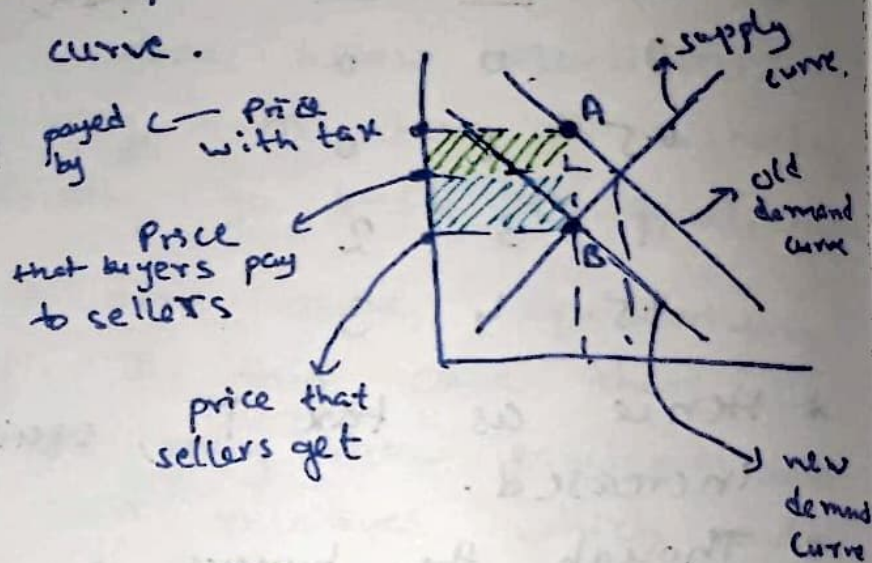
$$\text{Total surplus} = \text{Consumer surplus (CS)} + \text{Producer surplus (PS)} + \text{Tax revenue (TR)}$$

\* Imposing tax will reduce the total surplus becoz the area of  $\Delta$  is not getting included. This area indicates dead weight loss. The producers in the below part of triangle can't produce coz price got lowered for supply. And people in upper part of triangle on demand curve can't buy as his evaluation is less than the price. Only the people above the triangle in the consumer surplus area and firms standing on producer surplus area below the triangle on supply curve can buy and sell the goods respectively.

## Lec-8 (Micro-economics)

\* When tax is imposed on buyers, demand curve shifts towards left and there will be no change in supply curve.

\* Here, the tax burden is shared by sellers also coz, there is surplus as demand decreased and supply remained same. So, sellers will share the tax burden to overcome it.



↓  
tax burden  
on buyers

↓  
tax burden  
on sellers

length of AB = tax  
(shift in demand  
curve)


\* The burden shared by buyers and sellers may not be same but the tax burden on buyers and sellers in both cases remains same respectively.


\* When tax is imposed on buyers, the demand curve shifts to the left and the supply curve remains the same.

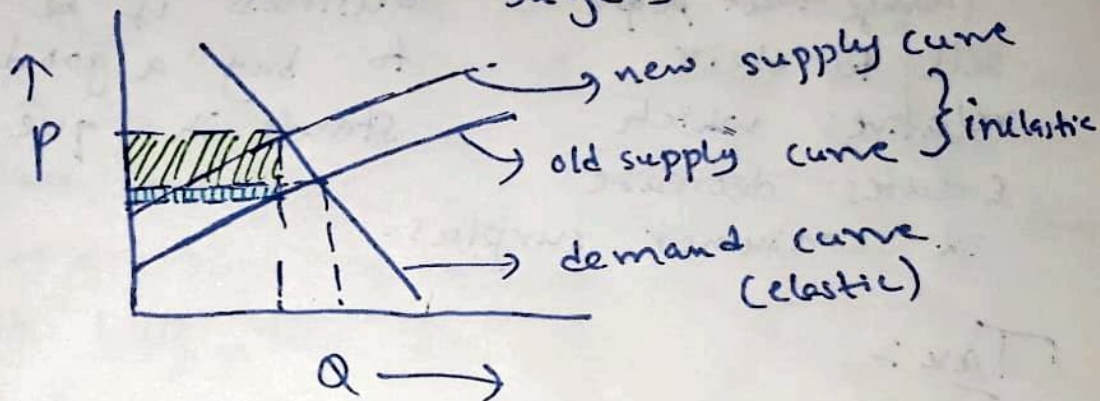


\* When tax is imposed on sellers,  
Tax burden is more for the side of the  
market which is elastic.

- ① Elastic supply + inelastic demand  
⇒ More burden on buyers

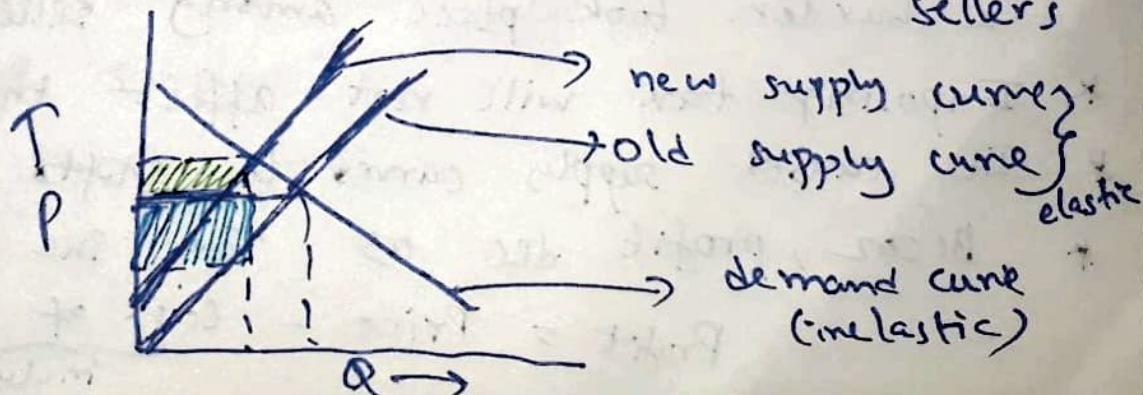
 → tax burden on buyers

 → tax burden on sellers



- ② Inelastic supply + elastic demand ⇒ burden more on sellers

(Here demand curve should be a bit more flatter)  
↓  
My mistake



⇒ The major objective of firms is to maximise profit.

$$\text{Profit} = \text{Total revenue} - \text{Cost of production.} \\ (P \times Q)$$

### Cost of production:-

This includes opportunity cost also.

Raw materials, wage, rent → ~~(These are paid in terms of money)~~

Ex:- Explicit cost  
which we spend in terms of money.

Time invested, skills → Implicit cost

But economists calculate only explicit cost.

Accounting profit = Total revenue - economic cost

Economic profit also includes opportunity cost.

One of such cases is investing in bank and getting money. It includes implicit cost also

$$\text{Economic profit} = \text{Total revenue} - \text{explicit cost} - \text{implicit cost.}$$

⇒ In short run, firms can't change its all cost factors of production. in short run.

To increase production, it can hire more workers but can't inc machinery or can't inc plant size, within less time. It is time required for firms to change some factors of production.

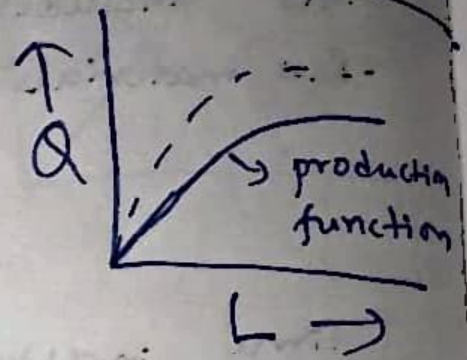
whereas long run run is the time required for firms to change all the factors of production.

⇒ Example:-

Marginal product of labour (how much more Q is produced)	No. of workers (L)	Quantity Produced (Q)	Wage paid to them (let wage paid to each = 10)	Rent (Assuming rent = 30)	Total cost of production
50	0	0	0	30	30
40	1	50	10	30	40
30	2	90	20	30	50
20	3	120	30	30	60
15	4	140	40	30	70
	5	155	50	30	80



Plotting graph btw  $L$  &  $Q$   
↓ ↓  
On x-axis on y-axis



If we observe the MPL, we observe that, there is dec  $\Delta$  in  $Q$  as firms hire more workers. This is because plant size and other factors are same. The falling rate of MPL is called as diminishing marginal product. Output is increasing at a decreasing rate.

\* According to graph, after certain point the output is not increasing. To increase the quantity we need to shift curve up. To do that, technology is helpful. like that of new technology which can ~~more~~ produce more.

Extra:- Thomas Malthus, some long ago predicted that there would be great famine, people would suffer with starvation as food production is  $\uparrow$  in AP & population is  $\uparrow$  in GP. But that didn't occur. It is because of technology which is being developed. It inc food production. Also, some debate that technology is useful & some others debate that it leads to unemployment.

## Lecture - 9

\* Total cost =

Fixed cost + Variable cost

Output  
= Quantity  
produced

↓  
doesn't vary  
with output

Ex:- Rent,  
property tax

↓  
varies with output

Ex:- Raw material,  
wages, Electricity

↓  
used to manufacture  
goods

Note:- (Electricity used in the  
manager's office etc,  
come under fixed cost)

\* Average cost =  $\frac{\text{Total cost (TC)}}{\text{Output quantity (Q)}}$

This generally indicates the price of one unit  
typical good or output.

//  $\therefore$  , Avg fixed cost =  $\frac{FC}{Q}$  , Avg variable cost =  $\frac{VC}{Q}$

Marginal cost is the cost of additional unit  
produced.

$$MC = \frac{\text{change in TC}}{\text{change in Q}} = \frac{\Delta TC}{\Delta Q}$$

It indicates the cost that firms should  
invest to change (increase) the quantity output by one  
unit.



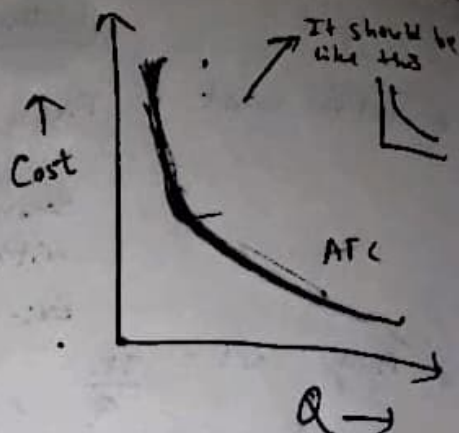
\* For avg fixed cost,

$$AFC = \frac{FC}{Q}$$

as FC is fixed,

$$AFC \propto \frac{1}{Q}$$

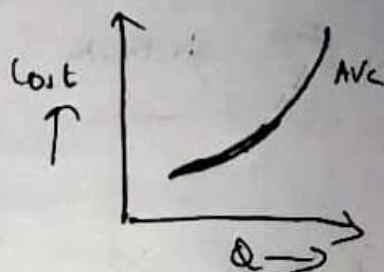
initially there is ~~less~~ more dec in cost for small change in Q.



\* For avg variable cost,

$$AVC = \frac{VC}{Q}$$

According to the diminishing marginal product concept studied in Lec-8, VC ↑ as Q ↑

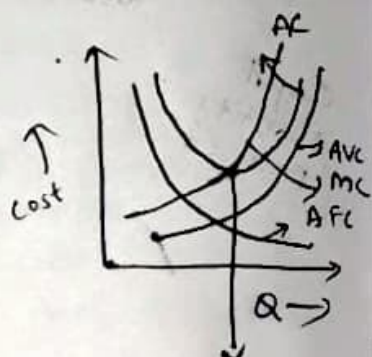


\* For average cost,  $AC = AFC + AVC$

Initially dec in AFC dominates later inc in AVC dominates.

Hence the graph of avg cost will first fall and then rise.

(in AFC graph, cost dec rapidly at start and become flat, in AVC graph, cost inc slowly from a flat curve then inc rapidly.)



Minimum point of graph  
↓  
This is called

At that point, cost of production of one typical good is low.

**efficient scale**

\* For marginal cost, we consider change in total cost,  $MC = \frac{\Delta TC}{\Delta Q} = \frac{\Delta VC}{\Delta Q}$

$$\Delta TC = \Delta FC + \Delta VC$$

coz FC doesn't vary with Q.

(MC ↑ as ↑ in Q refer Lec-2 to revise the concept of MC)

\* From fig, graph of MC passes through the minimum point of AC. When AC is ↓, MC ↑ and when AC is ↑, MC ↓.

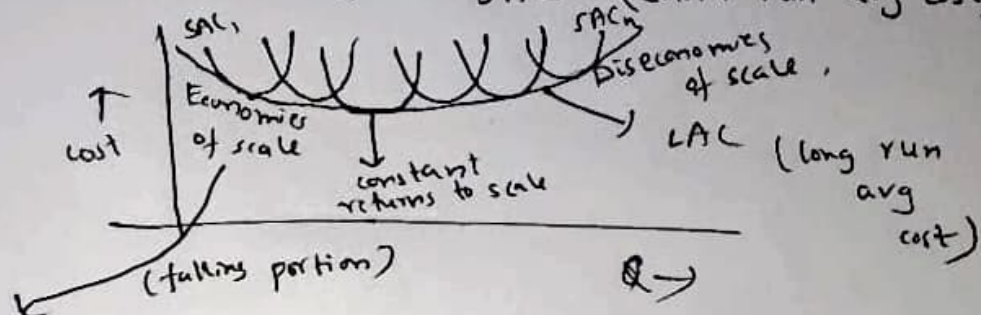
\* when Q is below efficient scale, MC is below AC and when Q is above then, MC is above AC.

\* When MC graph is above efficient scale then  $AC \uparrow$  as  $MC \uparrow$ .

\* When MC graph is below efficient scale then  $AC \downarrow$  as  $MC \uparrow$ .

\* In long run, there will be no fixed cost. Everything such as rent of land also changes as there is a chance of firm expanding their business by buying more land.

\* Let us consider 'n' SAC (short run avg cost)



cost  $\downarrow$  as  $Q \uparrow \rightarrow$  it might be due the persons who are more skilled and specialised in an allotted work.

Diseconomies (rising portion)  $\rightarrow$  it might be due to the co-ordination problems with workers & managers  
cost  $\uparrow$  as  $Q \uparrow$

\* Markets are divided based on competition:

① Perfect competition

② Monopoly

$\downarrow$   
Sellers have competition to sell their good. If they  $\uparrow$  the price, then buyers move to other shop. So, they can't  $\uparrow$  the price.

Ex: Selling vegetables

Here, no sellers can increase or decrease the price.

The sellers in these markets are price takers. Here,

$\Rightarrow$  There are large no. of buyers & sellers.

$\Rightarrow$  Sell similar/homogenous products.

$\Rightarrow$  They are free to exit (Anyone can start a shop or drop)



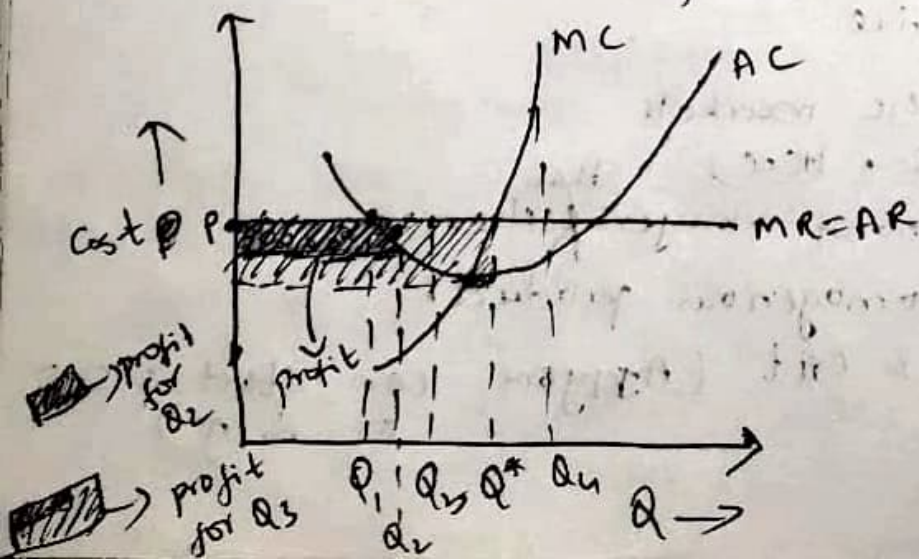
In perfect competition, Price = Avg revenue = Marginal revenue

<u>Q</u>	<u>P</u>	<u>TR</u> (Total revenue)	Avg revenue ( $\frac{TR}{Q}$ ) (Revenue per unit)	Marginal revenue ( $\frac{\Delta TR}{\Delta Q}$ )
1	6	6	6	6
2	6	12	6	6
3	6	18	6	6

## Lecture - 10

Quantity (Q)	Total revenue (TR)	Total cost (TC)	Profit (TR-TC)	MR ( $\frac{\Delta TR}{\Delta Q}$ )	MC ( $\frac{\Delta TC}{\Delta Q}$ )	$\Delta$ Profit (MR-MC)
0	0	3	-3	-	-	-
1	6	5	1	6	2	4
2	12	8	4	6	3	3
3	18	12	6	6	4	2
4	24	17	7	6	5	1
5	30	23	7	6	6	0
6	36	30	6	6	7	-1
7	42	38	4	6	8	-2
8	48	47	1	6	9	-3

- \* Profit is getting dec, it is due to inc in TC. This is due to diminishing marginal product.
- \* Here price is fixed and  $price = MR = AR$  because it is perfect competition market.
- \* Firms produce till  $MR = MC$ . It may produce when profit = 0 coz firms wait for chance.
- \* But they won't produce when  $MR < MC$



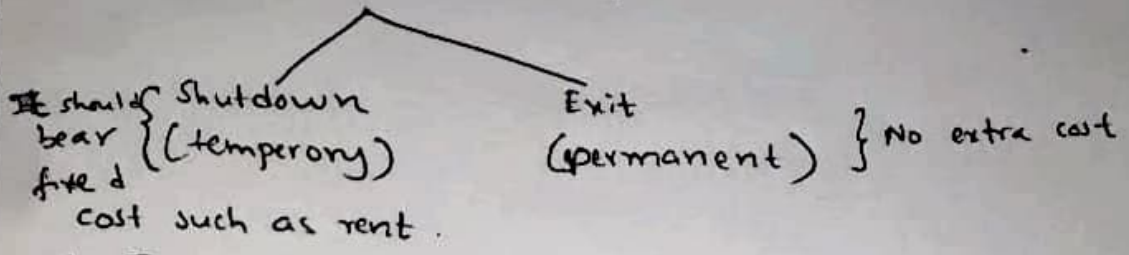
Since, we are considering profit, average revenue is above the min point of average cost curve.



- \* For  $Q_1 \Rightarrow$  there is 0 profit.
- \* For  $Q_2 \rightarrow Q_3 \Rightarrow$  there is inc in profit
- \* Profit is max for  $Q^*$
- \* Similarly for  $Q_4$  also profit is less than that of  $Q^*$
- \* So, if  $MR > MC \Rightarrow$  inc  $Q$   
 $MR < MC \Rightarrow$  dec  $Q$  } to get more profit.

When will firm quit market?

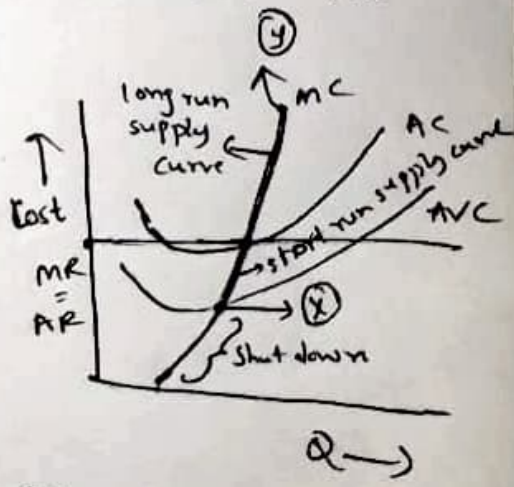
Quitting is of two types



- \* Firms might shutdown instead of exiting becoz there may be shift in demand temporarily, inc in cost of production, etc;
- \* Firms shut down when  $TR < VC$  which means that  $P < AVC$
- \* Firms sometime prefer shutdown instead of exiting due the sunk cost (The cost which cannot be recovered and is already spent.  
 Ex:- Cost of fitting machines, the interior we do in the office such as painting, tiles.
- \* If  $P < AC$  then, a firm will exit the market.

\* The curve (X) represent the supply curve.

\* Market supply curve



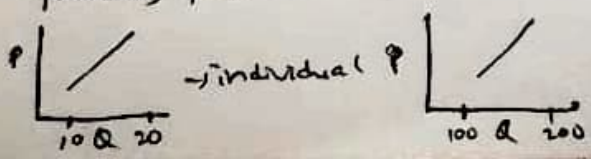
short run

We assume no. of firms are fixed

long run

free entry & exit

We add the quantity produced.



If there is profit, New firms enter then,  
 $Q_s \uparrow \Rightarrow P \downarrow \Rightarrow$  profit  $\downarrow$   
 If there is loss, firms exit  $\Rightarrow Q_s \downarrow \Rightarrow P \uparrow \Rightarrow$  loss  $\downarrow$

$\Rightarrow$  In long run, that situation continues till there is zero economic profit. (including implicit cost)