

19/03/22

Microeconomics deals with the behaviour of individual economic units [consumers, workers, investors, owners of land, business firms]

Land, Labour, Capital, Management \rightarrow Factors of production.

Consumers = making purchasing decisions and choices based on changing prices and income.

Firms \downarrow how many workers to hire and how much work to do.

- * How consumers and producers interact * [Microeconomics]
- * Microeconomics is all about limits [limited income, scarcity of resources] (How the prices are determined)

Trade-offs - Identifying the best alternate choice.

Prices and markets

All the trade offs are based on the prices faced by workers, consumers or firms.

Capitalist - private sector take over everything

Communist - Government will take over everything

Mixed economy

Both
eg. India.

Positive Economics :-

Explanation and predictions.

Normative Economics :-

[what will happen in future]

It deals with "WHAT OUGHT TO BE"

e.g. the eco

* When US government imposes a quota on the import of foreign cars.

[Tariff charge]

Reacting to this situation is positive economy

= * Normative economics not only concern with alternative policy option but it also involves a design of particular policy choices
e.g. gasoline tax.

Arbitrage :-

Practice of buying at a low price at one location and selling at a high price in another location.

Perfectly Competitive Market :-

Market with many buyers and sellers so that no single buyer or seller has a significant impact on price.

Real Vs Nominal price :-

Price of a good relative to an aggregate to measure of an price [Price adjusted for inflation]

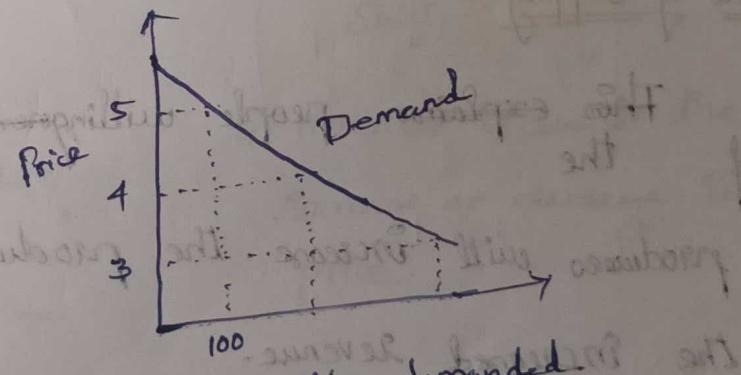
Nominal price - absolute price of a good. [unadjusted for inflation] Huge rise in prices

Principles of demand and supply :-

It states that other factors being constant, price and quantity demand of any good or service are inversely related to each other.

Demand Schedule

Price	Unit demanded
Rs 5	100
Rs 4	200
Rs 3	300



exception:

War.

Depression

Giffen paradox

Ignorance effect [high price means high qualities]

Demonstration effect / better effect (Show & tell)

Speculation effect :-

Rise in the price of commodity creates an impression among the buyers that its' price will rise further. So, people start buying more of the commodities when price rises.

Principle of necessities:-

Commodities like staples, food, water.
[essential]

Giffen Paradox :-

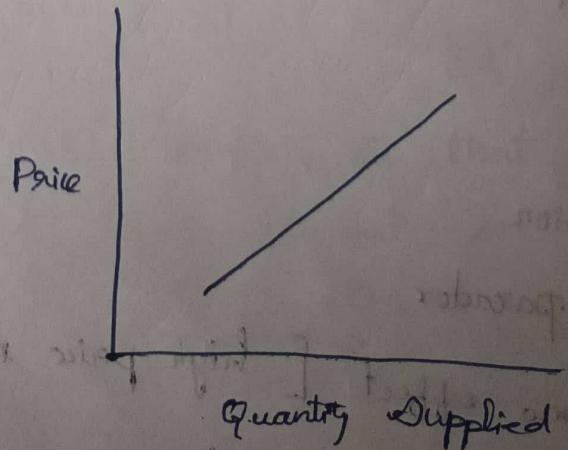
Though the price of wheat, rice, bread increases the people cutdown the consumption of meat, fish etc... Then they buy wheat, rice daily for their essential needs.

Law of Supply :-

This explains people willingness to pay more the If the producers will increase the production to capitalise on the increased revenue.

$$S_x = f(P_x)$$

Price	Quantity
10	5
12	10
14	15
16	20

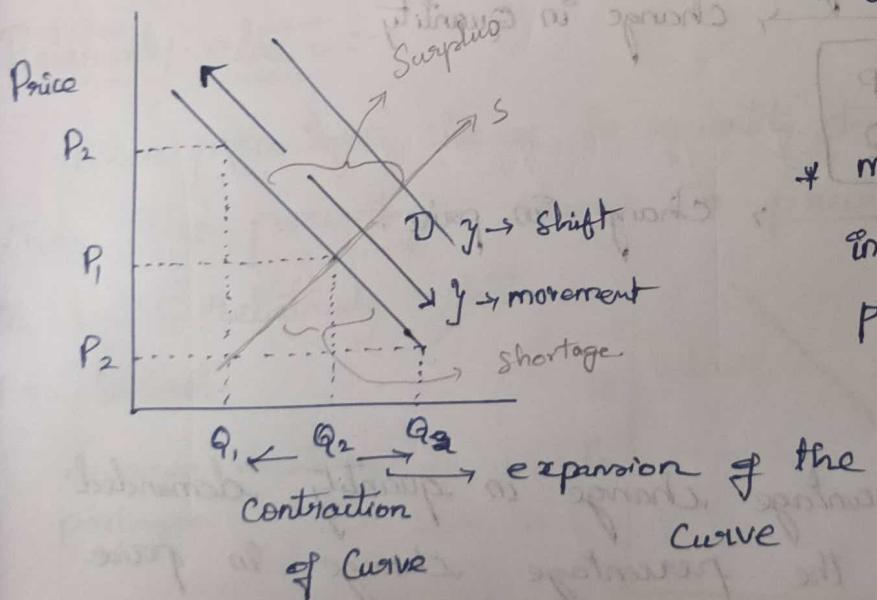


- change in
- ④ No. Scale of production increased
 - ⑤ Subsidies: Support the production
 - ⑥ Cost of production
 - ⑦ Transportation cost by the way the middle class get benefitted
 - ⑧ Speculation of price
 - ⑨ Government policies.
- These factors should remain constant for the law to hold good.

Exception:-

1. Agricultural products Supply [depends on particular season and climatic condition]
2. Subsidies given to manufacturers.

Shift and movement in demand curves:-



* Other than price is

Shift
movement is due to the increase or decrease in price

movement:-

If there is any change in price of product the demand curve will move upward or downward.

Shift:-

Quantity demanded will change due to increase in consumers income, change in preferences and seasons / climatic condition, quality all will cause right or left shift in demand.

Shift in supply curve - transportation cost, Govt policies, Scale of production

Marketing equilibrium:-

Elasticity of demand:-

It is the measure of responsiveness or sensitiveness of one variable to change in some other variable.

$$e_p = \frac{\Delta Q}{\Delta P} \cdot \frac{P}{Q}$$

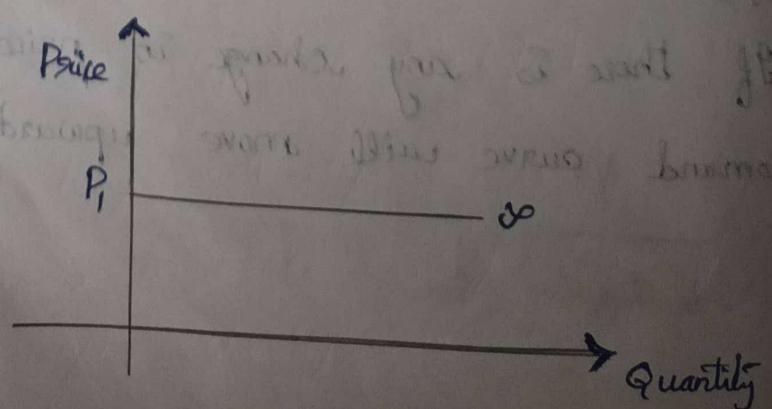
→ change in quantity

→ change in price.

$$e_p = -1 \leq 1$$

Perfectly elastic:-

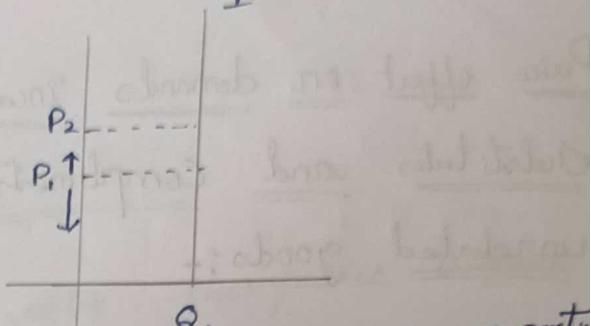
when the percentage change in quantity demanded is infinite even if the percentage change in price is zero (0).



Ex. 2 wheeler market

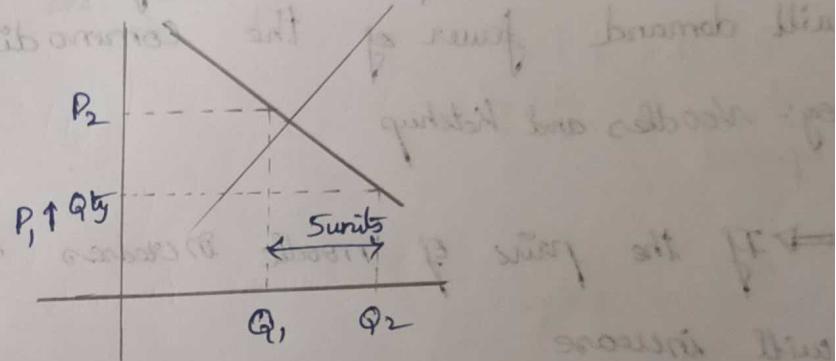
Perfectly inelastic :- When the percentage change in quantity demanded is zero, no matter how much the percentage is changed.

Eg: Petrol, electricity, medicines



Unitary elastic :-

The proportion of change in demand is equal to proportion of change in price.

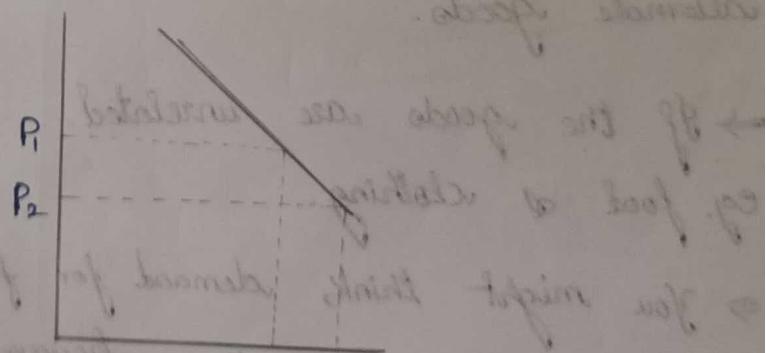


Relatively elastic :-

When percentage change in quantity demanded is greater than the percentage change in price. Demand is said to be relatively elastic.

Eg. ~~Petrol~~.

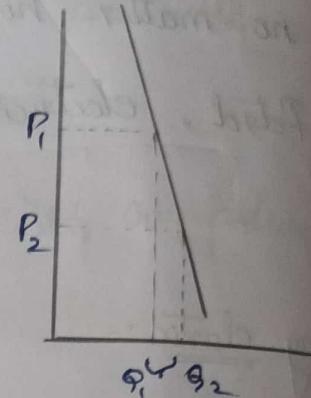
Summer Vacation packages.



Relatively inelastic :-

More change in price, less change in demand.
e.g. petrol.

Price effect on demands in case of
Substitutes and Compliments &
unrelated goods :-



⇒ If the price of a commodity increases the consumer will demand fewer of the commodity.
e.g.: Noodles and Ketchup

⇒ If the price of ~~some~~ noodle increases the demand for pasta will increase.

⇒ Demand is not affected by change in price of alternate goods.

⇒ If the goods are unrelated.
e.g. food & clothing.

⇒ You might think, demand for food and clothing are independent of each other. however because consumer spend a fixed amount on the two (food and clothing)

⇒ The demand for clothing will depend on whether the consumer spends more or less of her fixed budget on food after the price increases.

⇒ If the consumers demand elasticity for food is elastic.
 She will spend less on food & more of her fixed income will be available to spend on clothing.

Clothing

The demand for food is inelastic.

⇒ She will spend more on food after the price increase and therefore less on clothing.

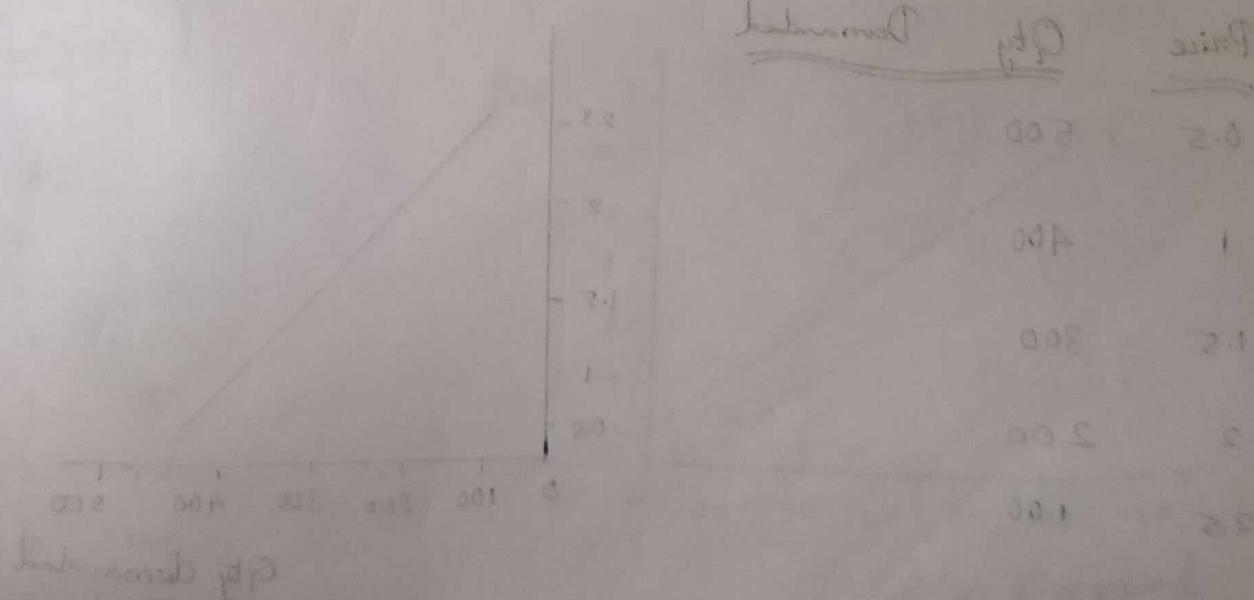
$$Q_d + \Delta Q_d = P$$

using \downarrow

$\frac{\Delta Q_d}{Q_d} = \frac{P_d}{P}$

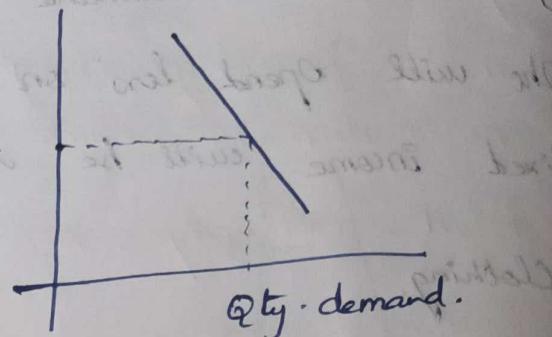
$$\text{elasticity} = \frac{\Delta Q_d}{Q_d} \times \frac{P_d}{P}$$

more income less
less income more



Price Quantity

0.5	500
1	400
1.5	300
2	200
2.5	100



$$y = mx + b$$

slope Intercept

$$Q = a + bP$$

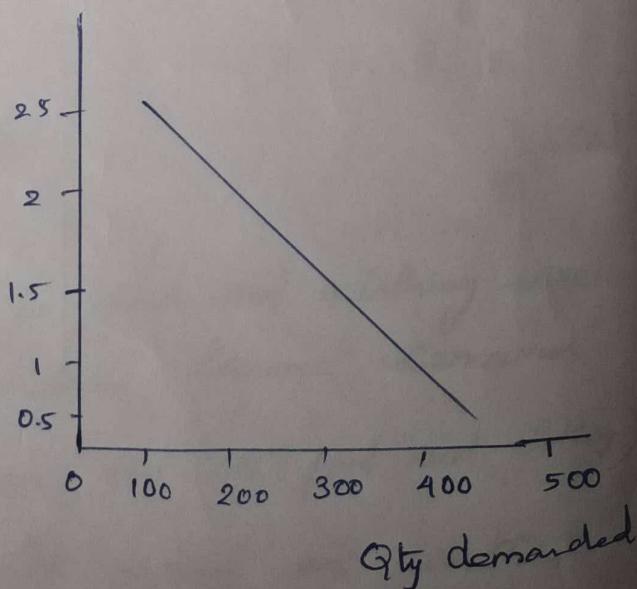
↓ ↗ price

dependent

$$\frac{\Delta Y}{\Delta X} = \text{Slope}$$

Linear demand curve
equation:

Price	Qty Demanded
0.5	500
1	400
1.5	300
2	200
2.5	100



$$y = mx + b$$

\hookrightarrow y-intercept

$$Q = a + b(P)$$

↓ ↓ ↗
Quantity demanded x-intercept Price
 Inverse slope

$$Q_P \text{ when } P=0$$

$$b = \frac{\Delta Q}{\Delta P} = \frac{y}{x}$$

$$\textcircled{1} \quad b = \frac{\Delta Q}{\Delta P} = \frac{Q_2 - Q_1}{P_2 - P_1}$$

$$= \frac{300 - 400}{1.5 - 1}$$

$$= -\frac{100}{0.5}$$

$$= -200$$

$$a = 600$$

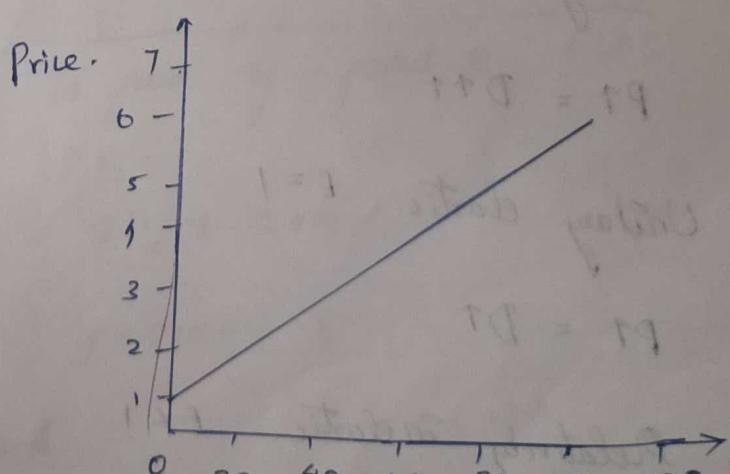
$$Q = 600 - 200P$$

↑↑↑ C = 19

↑↑↑ C = 19

Linear Supply curve
equation:-

P	Q _s
1	0
2	20
3	50
4	80
5	110
6	140
7	170



Qty Supplied

$$Q_3 = c + d(p)$$

↓
Qty intercept

$$d + pm = v$$

$$(c + d + p) = v$$

Supply curve + demand curve = v

Q = mdu - P

Q = mdu - P

P = Qd

$$c(00s) \rightarrow P = 00s \quad \textcircled{2}$$

$$\frac{P - P}{P - P} = \frac{Q_d - Q}{Q_d - Q}$$

$$00s - P = 00s$$

$$00s = P$$

$$\frac{00s - 00s}{1 - 2.1} =$$

$$00s - 00s = 0$$

$$\frac{00s}{2.0} =$$

Elasticity

1. Perfectly elastic $E = \infty$

$$P \uparrow = D \uparrow \uparrow \uparrow$$

2. Relatively elastic $E > 1$

$$P \uparrow = D \uparrow \uparrow$$

3. Unitary elastic $E = 1$

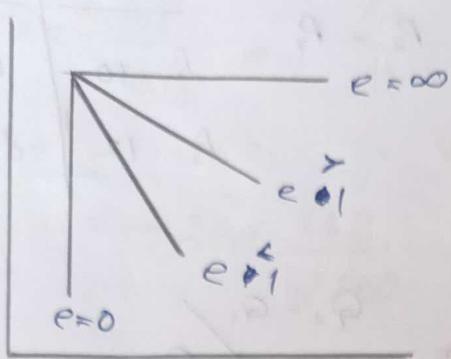
$$P \uparrow = D \uparrow$$

4. Relatively inelastic $E < 1$

$$P \uparrow \uparrow \neq D \uparrow$$

5. Perfectly inelastic $E = 0$

$$P \uparrow = \text{No change}$$



Income elasticity:

$$YED = \frac{\% \text{ change in Qty demanded}}{\% \text{ change in income}}$$

Change in income

1) Inferior goods $e < 0$

2) Basic or necessity goods $e < 1$

3) Luxury $e > 1$

Cross elasticity:

$$XED = \frac{\% \text{ change in qty. demand of prod. A}}{\% \text{ change in price of prod. B}}$$

$$Q = 1000 - Sp + 10Px - 2Pz + 0.14$$

$$P = 80, \quad Px = 50, \quad Pz = 150, \quad Y = 20000$$

1) Price elasticity of demand

2) Cost price elasticity of demand w.r.t Commodity α

3) What is the cost price elasticity demand w.r.t Commodity α

4) What is income elasticity

$$17. \epsilon_p = \frac{\Delta Q}{\Delta P} \times \frac{P}{Q} \quad \Delta Q = Q_2 - Q_1 \quad \frac{P}{Q}$$

$$\Delta P = P_2 - P_1 \quad P_1 \quad 10 \quad | \quad 100 \quad Q_1$$

$$P_2 \quad 12 \quad | \quad 80 \quad Q_2$$

$$\frac{\frac{\Delta Q}{Q}}{\Delta P/P_1} = \frac{Q_2 - Q_1}{P_2 - P_1} / P_1$$

$$= -20 / 100 = -20$$

$$= 2/10 \times 100 = 20$$

$$Q = 100 - 5(80) + 10(50) \\ + 2(150) + 0.1(20,000)$$

$$Q = 2800$$

$$\frac{\Delta Q}{\Delta P} = \text{Coefficient of } P$$

$$Q = 2800 \quad \frac{\Delta Q}{\Delta P} = -5 \quad P = 80$$

$$\epsilon_p = -5 \times \frac{80}{2800} = -0.174$$

$$ii) \epsilon_x = \frac{\Delta Q}{\Delta P_x} \times \frac{P_x}{Q}$$

$$= 10 \times \frac{50}{2,800}$$

$$\epsilon_x = 0.17$$

$$\text{iii) } \varepsilon_z = \frac{\Delta Q}{\Delta P_z} \times \frac{P_z}{Q}$$

commodity $y=2$

$$= -2 \times \frac{150}{2800}$$

$$\varepsilon_z = -0.107$$

$$\text{iv) } \varepsilon_y = 0.1 \times \frac{20000}{2,800}$$

$$\varepsilon_y = 0.714$$

$$y \text{ F.D.} = \frac{\Delta Q}{\Delta y} \times \frac{y}{Q}$$

Utility analysis:-

utility - The ability of a good to satisfy a want

Total utility - The total satisfaction received from

(TU)
Consuming a good or service.

Marginal utility - The extra utility received from
(MU)
Consuming one additional unit of a good

util - The arbitrary unit of measure of
utility.

Cardinal utility :-

Satisfaction derived by the consumers from the consumption of good or service can be measured numerically.

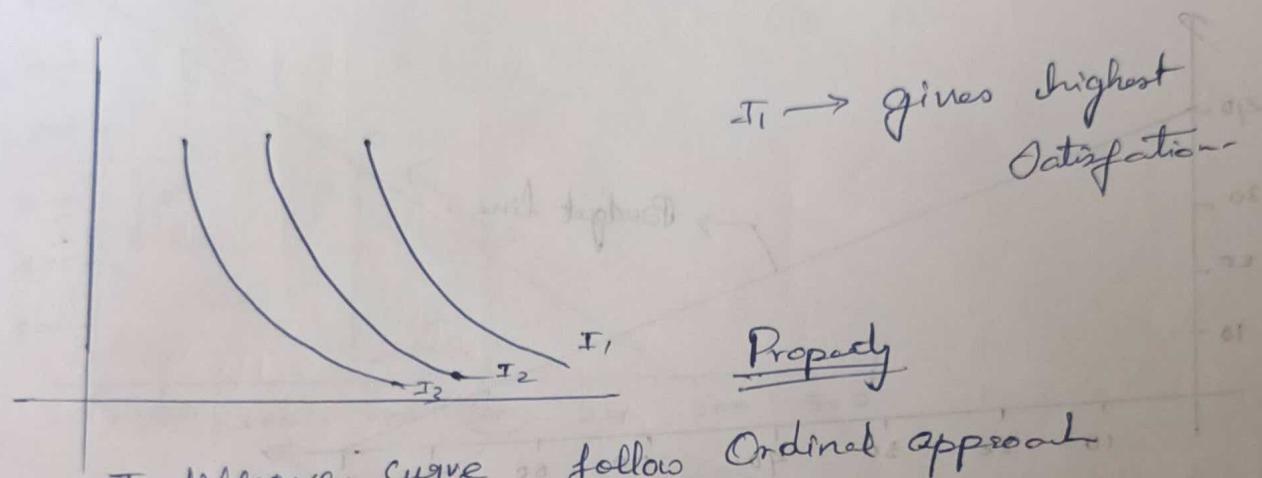
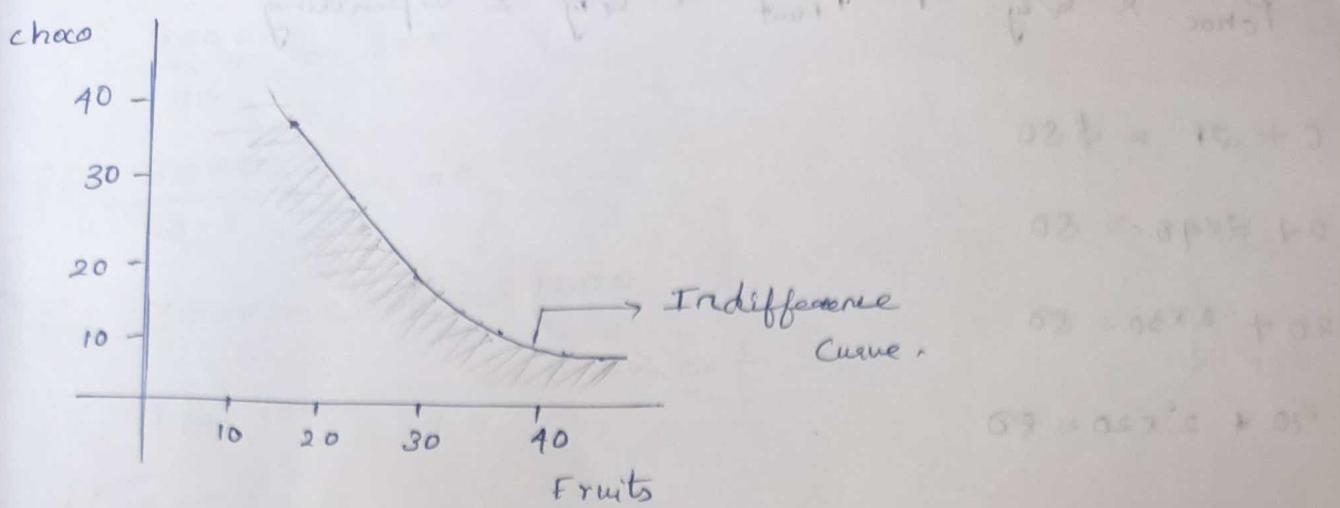
Ordinal utility :-

Satisfaction which a consumer derives from the consumption of product or service cannot be measured numerically.

Axioms of Consumer preference

⇒ Preferences are complete

Market Basket	Units of chocolates	Units of fruits
	20	30
A	10	50
		20
B	40	
C	30	40
D	10	20
E	10	40
F		
G		
H		
I		



- ① Indifference curve follows Ordinal approach.
- ② Indifference curve does not intersect.

Budget Constraints :-

Constraints that consumer face as a result of limited incomes.

market basket	choc	Fruit	Income Spending
A	0	40	\$ 80
B	20	30	\$ 80
C D	40	20	\$ 80
E F	60	10	\$ 80
G	80	0	\$ 80

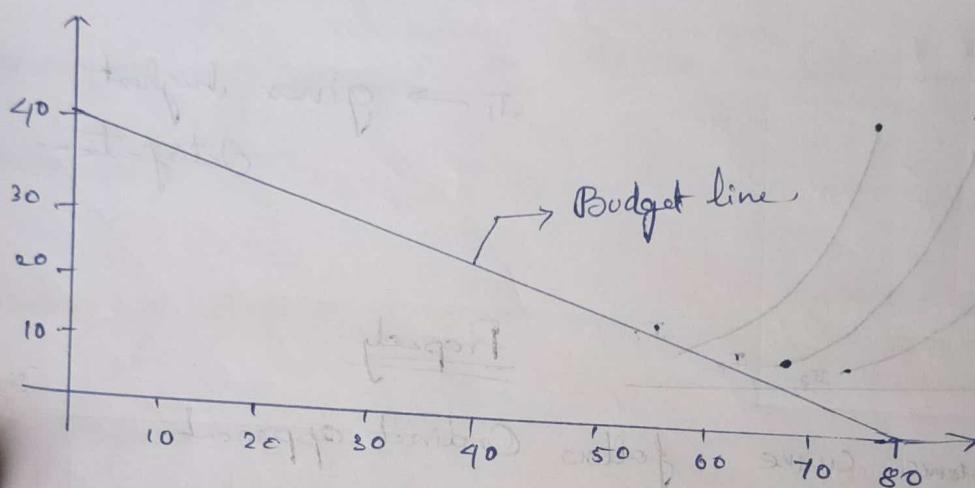
$$P_{choc} \times Qty + P_{avacado} \times Qty = Spending$$

$$C + \alpha F = \$80$$

$$0 + \alpha \times 40 = 80$$

$$20 + \alpha \times 30 = 80$$

$$40 + \alpha \times 20 = 80$$



Q). Sam divides his income of \$3000 between two goods
Steaks and avacado, price are

$$P(st) = 10 \$/\text{steak}, \quad P(av) = 2.5 \$/\text{avocado}.$$

i) If Sam spends all his income on steak how many steaks does he buy? Ans: 300

ii) If Sam spends all his income on avacado, how many? Ans: 1200

iii) If Sam buys 200 steaks then how many avacados can he buy?

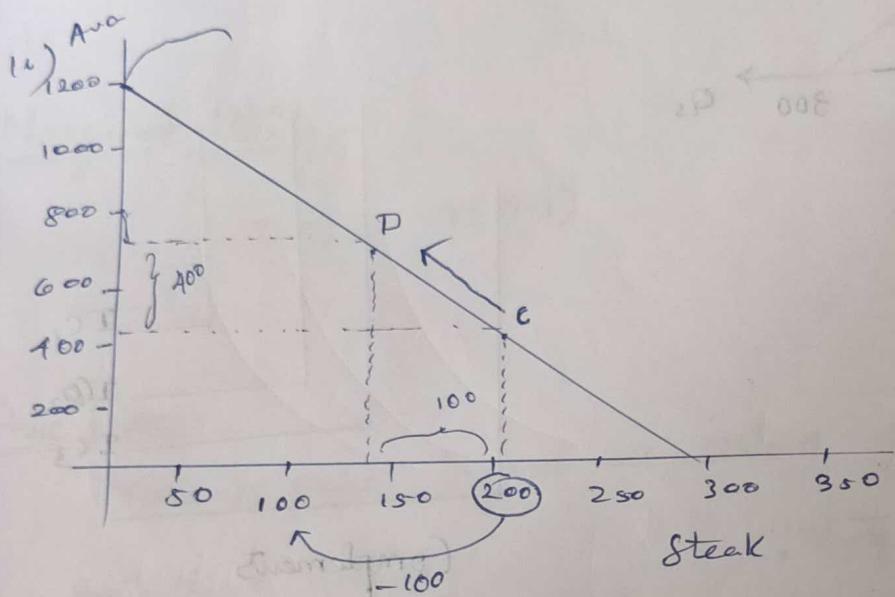
iv) Plot each of the bundle based on the above value on a graph (steak on horiz, Avac on vert).

$$\text{i)} \frac{3000}{10} = 300$$

$$\text{ii)} \frac{3000}{2.5} = 1200$$

$$\text{iii)} 3000 - 2000 = \$1000$$

For \$1000 400 avocado



max possibilities deals with Indifference Curve:-

1. Income ↑
2. Change in price of one good
3. If they are substitutes
4. If they are compliments

Income = \$3000

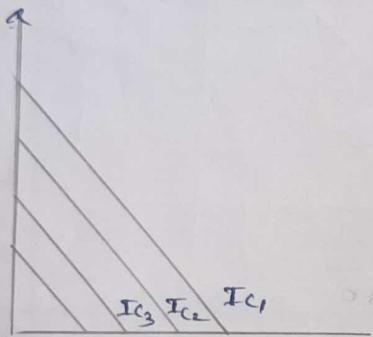
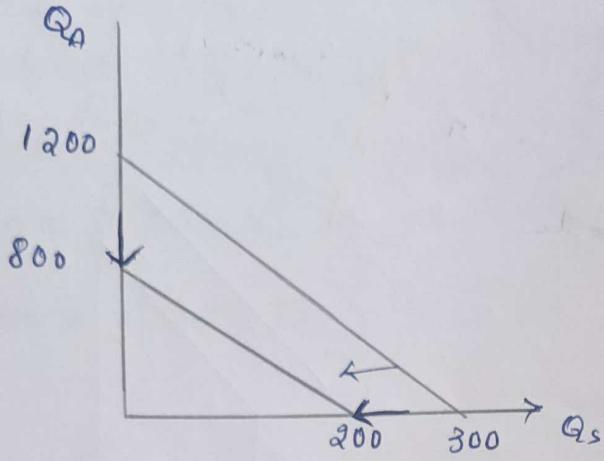
$$P_S = \$10, P_A = 2.50$$

Income falls to \$2000.

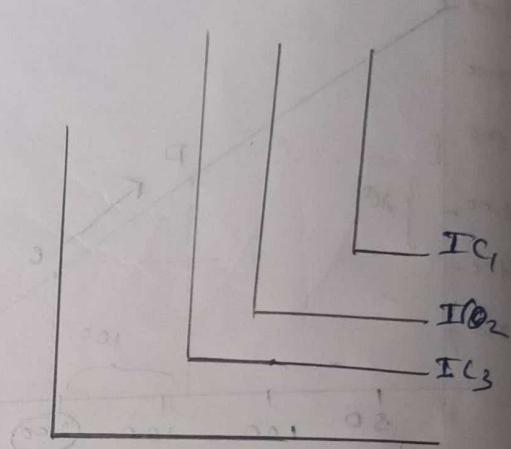
Price of avocado rises to \$4/avocado

$$\text{(i)} \quad \frac{2000}{10} = 200 \quad // \quad \frac{2000}{2.50} = 800 \text{ ava}$$

$$\text{ii)} \quad \frac{3000}{7}$$



Perfect Substitutes



Complements

$$D = f^{(x)}$$

Price effect

Income

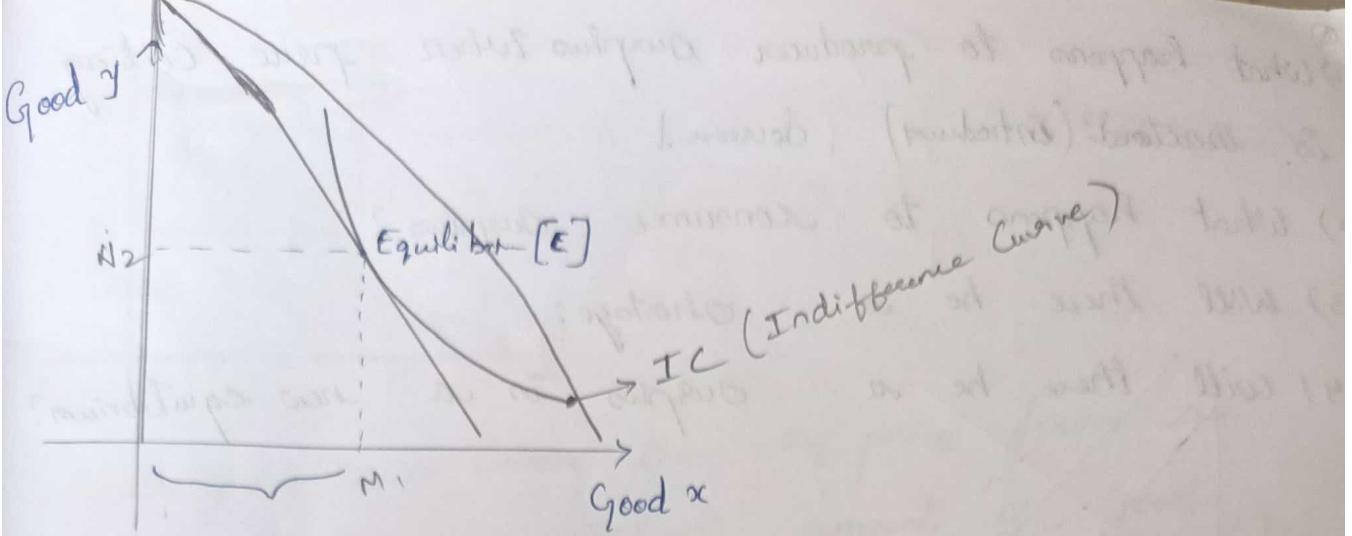
Substitute, ♡

$$\star \text{ Price effect} = \frac{\Delta \text{ in Qty demanded}}{\Delta \text{ in Price of Commodity}}$$

$$\star \text{ Income } = \frac{\Delta \text{ in Qty demanded}}{\Delta \text{ in Income of Individual}}$$

* Substitution effect = A in demand of commodity x

A is price of Commodity



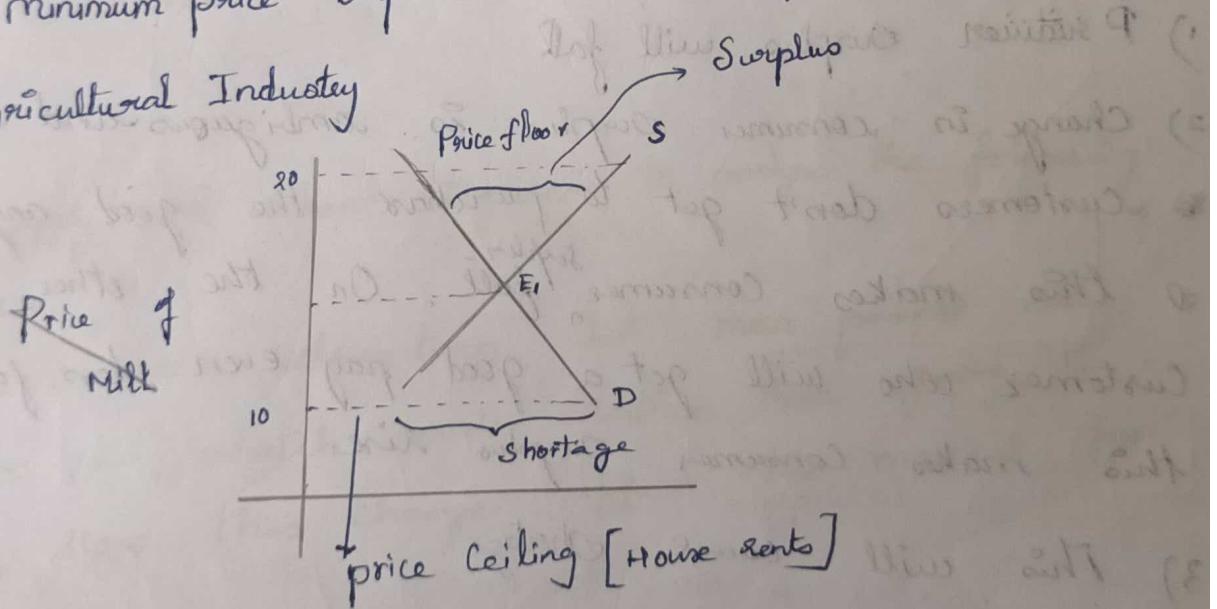
Marginal Utility :-

$$T(n) - T(n-1)$$

Price floor:-

minimum price imposed on certain goods and service.

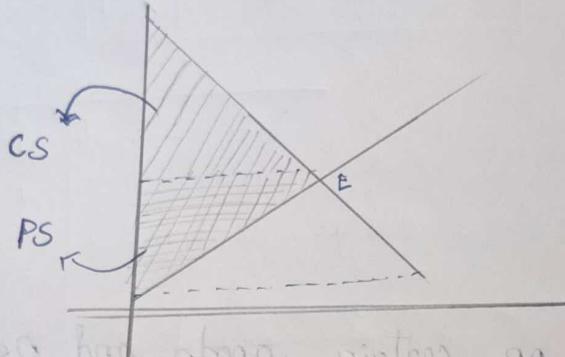
Eg. Agricultural Industry



Price Ceil :-

maximum price imposed on certain goods and service

- Q
- 1) what happens to producer surplus when price ceiling is introduced? (introduced) decrease
 - 2) what happens to consumer surplus?
 - 3) will there be a shortage?
 - 4) will there be a surplus in a new equilibrium?

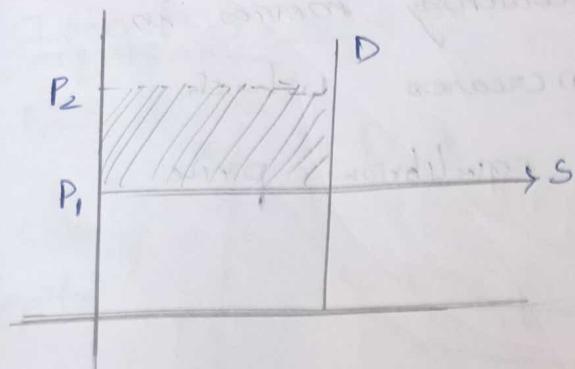


$$(1-\alpha)r = \alpha T$$

Since both above numbers no benefit wing minimum

- 1) Producer surplus will fall
- 2) Change in consumer surplus is ambiguous and some customers don't get to purchase the good anymore
this makes consumer surplus fall. On the other hand customers who will get a good pay even less for it this makes consumer surplus rise.
- 3) This will cause shortage

- Q Suppose a supply is perfectly elastic and demand is perfectly inelastic. Suppose price floor is set above equ. price



As price rises above the eq. price firms are willing to supply an infinite amount of goods but consumers will be willing to buy the exact same amount as before.

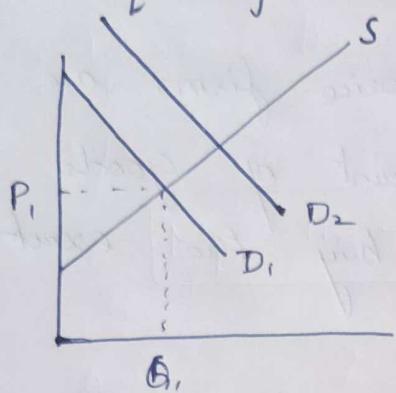
So one price rises but the quantity exchanged is unchanged. Suppliers receive a price larger than minimum.

use supply and demand diagrams to analyse the following

Scenarios.

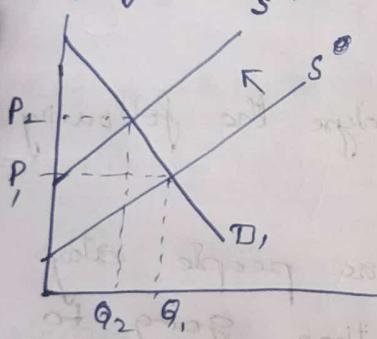
- i) The economic downturn let more people stay in love to watch movies rather than going to theater. How this change affect the market for microwave popcorn?
- ii) Suppose drought condition in agriculture increases the cost of irrigation how this affects the market for fruits and vegetables.

i) popcorn is a complement to watching movies at home. Demand for popcorn increases which will shift it up hence the equilibrium price and quantity increases.



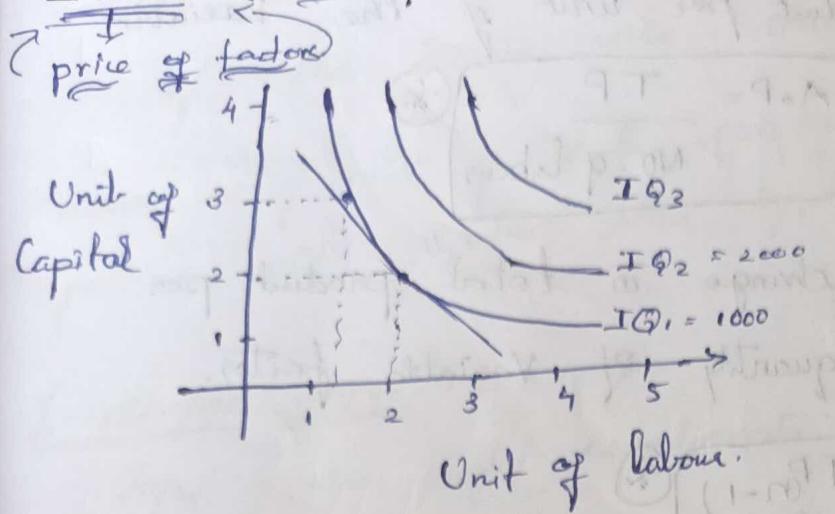
ii) Drought condition reduce supply of fruits & vegetables

Supply curve is shifting down.



iii) Due to technological advances there is an increase in the number of female cows. They will be very happy but however farmers have more female cows. hence Supply increases
Quantity rises Price falls

Isoquant & Iso-cost



Introduction to Production cost and market structure :-

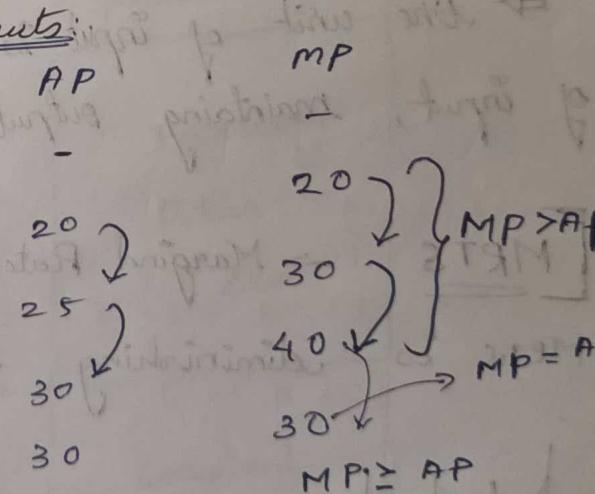
Production function:-

How inputs are transformed into output achieving maximum output firm can produce for specific combination of inputs.

Total, Average and Marginal products

Unit of labour

Unit of labour	TP
0	0
1	20
2	50
3	90
4	120



Total product :-

→ Total output resulting from the efforts of all factors of production

→ Total product will vary with the quantity used of the variable factor.

the quantity

Average Product.

It is total product per unit of the variable factor.

$$A.P = \frac{T.P}{\text{NO. of Labour}}$$

Marginal product:

If it is the change in total product per unit by change in quantity of variable factors.

$$M.P = T.P_n - T.P_{(n-1)}$$

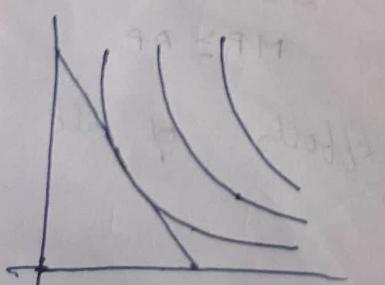
Units of Labour	T.P	A.P	M.P
0	-	-	-
1	20	20	20
2	50	25	30 }
3	90	30	40 }
4	120	30	30 } AP = MP
5	140	28	20 }
6	150	25	10 }
7	150	21.4	0 } MP = 0;
8	140	17.5	10 } TP is Max

Convex Isoquants :-

→ One unit of input is substituted for another unit of input, maintaining output at the same level.

MRTS → Marginal Rate of Technical Substitution

MRTS is diminishing as we move along Isoquant.



$$M.R.T.S = \frac{\Delta L}{\Delta C}$$

$$\frac{\text{Change in Labour}}{\text{Change in Capital}}$$

Linear Isoquants:

If the inputs are substitutes

Same no. of units of inputs can always be exchanged for one unit of the other input.

L-shaped Isoquants:

Inputs are perfect compliments

Firm cannot give up one unit of input in exchange for the other.

Law of Returns to Scale

- Long run production

- All factor varied

scale

1 machine + 1 labour

Scale	TP	MP	Phase
1 machine + 1 labour	4	4	
2 machine + 2 labour	10	5	
3 machine + 3 labour	18	6	Increasing Returns to Scale
4 machine + 4 labour	28	10	
5 machine + 5 labour	38	10	Constant
6 machine + 6 labour	48	10	
7 machine + 7 labour	56	8	
8 machine + 8 labour	62	6	Decreasing

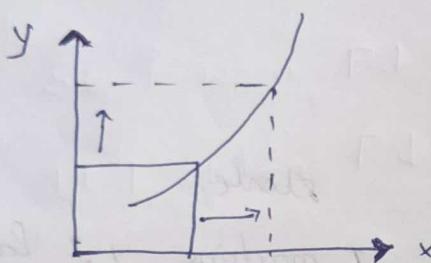
* If inputs are increased by 5% the output increased by more than 5%.

$$1 \text{ lab} + 1k \rightarrow 2k + 2k \rightarrow 10 \text{ to } 25 \quad \text{Ans. } 150\%$$

proportional change in the Output

is more than the proportional change

in input.



units of labor/capital

\Rightarrow Technical + Managerial in divisibility

\Rightarrow Specialisation

$$Q = 2k + 3L$$

$$Q = f(k, L)$$

$$= 2k \cdot m + 3 \times 2 \times m$$

$$= m(2k + 3L)$$

$$= m \cdot Q$$

Increasing returns to Scale - ①

$$Q = 5kL$$

$$\text{Firm} = (5k \times m)(L \times m)$$

$$\text{Firm} = 5 \times k \times L \times m^2$$

$$= m^2(5kL)$$

$$= m^2(Q)$$

Decreasing Scale of Returns $\rightarrow MP \leq AP$ till $MP = 0$

$$Q = K^{0.3} L^{0.2}$$

$$= (K \times m)^{0.3} (L \times m)^{0.2}$$

$$= K^{0.3} L^{0.2} m^{0.5}$$

$$= Qm^{0.5}$$

Negative returns $MP < 0$

③ AP is also $\downarrow \infty$

$$① Q = 5K^2 + L^2, \quad ② Q = 4K^{1/3} \cdot L^{1/3}, \quad ③ Q = K + L$$

$$① Q = 5K^2 + L^2$$

$$= 5K^2 m^2 + L^2 m^2$$

$$= m^2(5K^2 + L^2)$$

$$= m^2 Q$$

→ Increasing returns

$$② Q = 4K^{1/3} L^{1/3}$$

$$= (4K^{1/3} m^{1/3}) (L^{1/3} \cdot m^{1/3})$$

$$= m^{1/3} m^{1/3} (4K^{1/3} L^{1/3})$$

$$= m^{1/3} m^{1/3} Q = m^{1/3} Q$$

→ decreasing scale

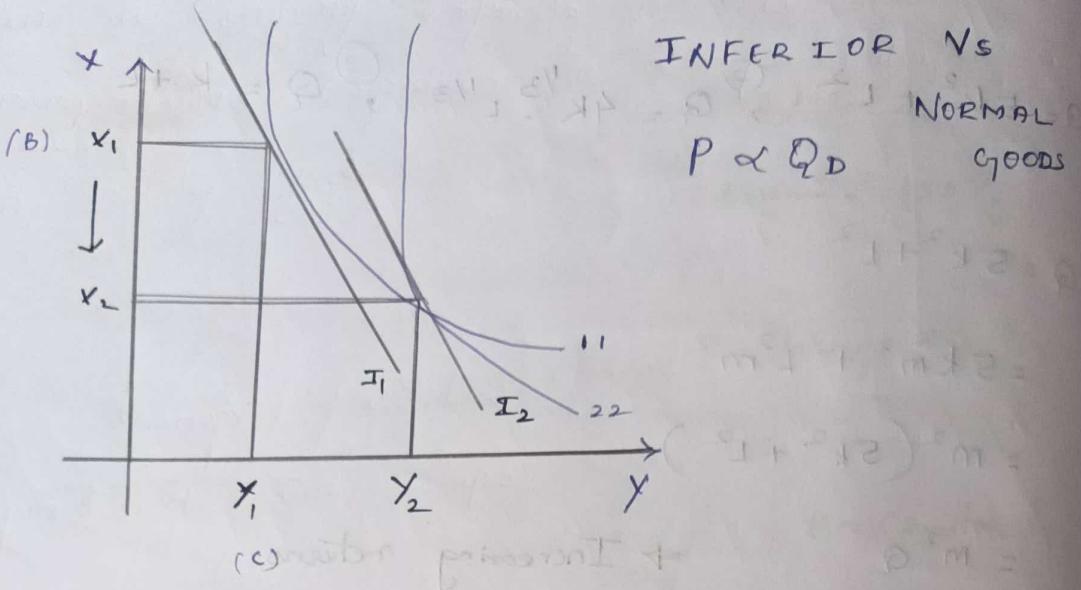
$$③ Q = K + L$$

$$= km + Lm$$

$$= m(K + L)$$

$$= mQ$$

→ Constant returns to Scale



SE \uparrow when $P \downarrow$

IE \downarrow when $P \downarrow$

COBB - DOUGLAS

Production function:

$$Q = b L^a C^{1-a}$$

b = no. of units of labour

a = exponent of labour

$1-a$ = exponent of Capital

c = Capital

L = Labour

Q = Output

Economies of Scale:- (ix)

\Rightarrow past advantages due to large size of production

Internal economies of Scale:-

Enjoyed within the production unit.

1) Technical economics:

As the size of the firm is large availability of capital is more and they can introduce increase the production

2. Financial Economics

Big firms can float shares in the market for capital and they can buy capital.

Managerial Economics:-

Division of labour is the result of large scale production.

Eg food factory in discovry channel.

Labour Economics:-

Quality and ability of labour will be increased.

Marketing Economics:-

Producers can gain better bargaining power.

Economics of Survival:

Firms can have many products bcz if one product fails the loss can be managed by the other products.

Profit earned from the other products.

$$0.8T + 2.1T = 2.9T$$

External Economics of Scale:-

When a Company expands in diff locations
when many firms expands in a particular area
or when industry goes.

Advantages :-

- ⇒ Increase transport facilities
- ⇒ Development of towns ships
- ⇒ Banking facilities.

Disadvantages:-

This advantages arranging a firm due to large scale production.

Internal dis-economies of Scale:-

If a firm continues to grow & expand beyond the optimum.

Fixed cost:

Cost irrespective of production

$$C = F(Q)$$

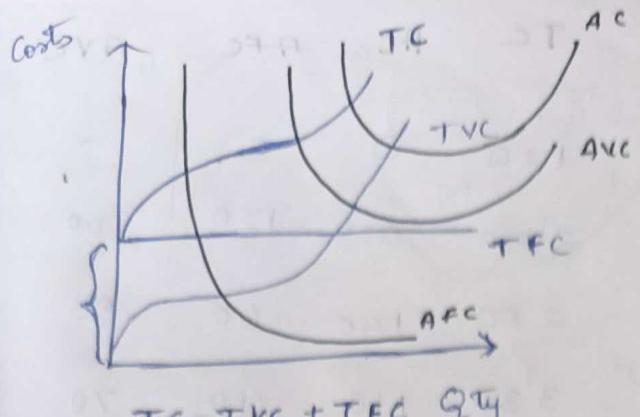
Opportunity cost:

It is the next best alternative that is sacrificed.

Variable cost:

Cost that depends on quantity of Production.

$$T.C = T.F.C + T.V.C$$



$$TC = TVC + TFC$$

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

$$AC = \frac{TC}{Q}$$

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

Note:-

AVC shape is U because with \uparrow es & diminishing returns.

Marginal

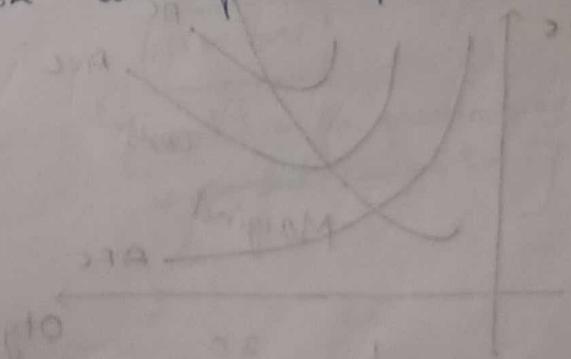
1 - 20

2 - 25

The addition made to the total cost by the production of one additional unit of output

TC + TVC

$$TV + VA$$

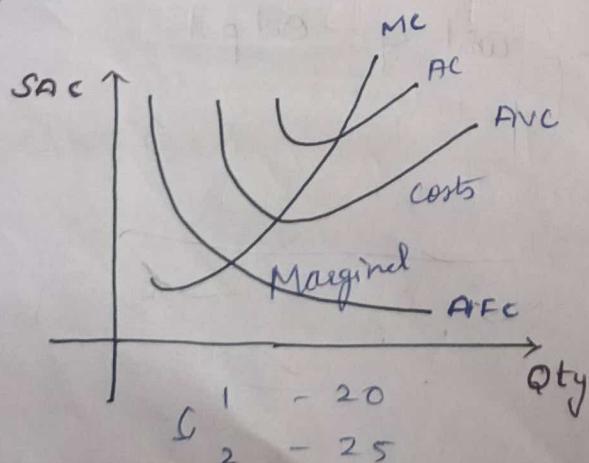


Unit of Q/P	TFC	TVC	TC	AC	AFC	AVC
0	120	0	120	-	-	-
1	120	100	220	220	120	100
2	120	160	280	140	60	80
3	120	210	330	110	40	70
4	120	240	360	90	30	60
5	120	300	520	104	24	80
6	120	360	660	110	20	90
7	120	400	820	117.14	17.14	100
8	120	480	1000	125	15	110

* ATC depends on AFC & AVC

* Both AFC & AVC fall at begin Hence AC will also fall

* when AVC curve begins rising AFC curve falls steeply the fall in AFC is more than rise in AVC.

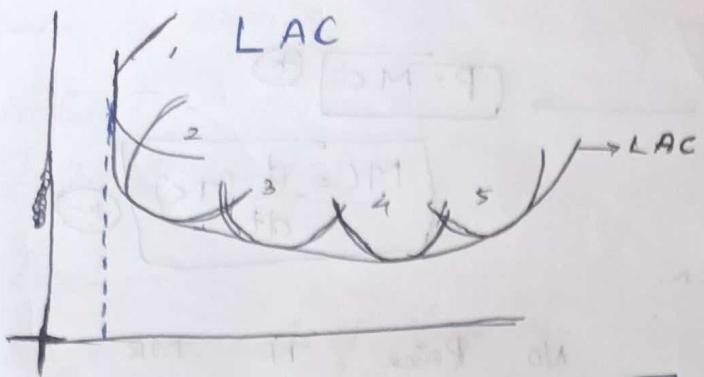


Marginal Cost:

Increasing returns to scale.

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

$P = MR = MC \rightarrow$ perfect competition



[LAC - Long run average cost
curve [planning curve]]

→ If we have three sizes of plants small, medium and large
 * SAC 1 → small size plant
 * SAC 2 → medium size plant
 * SAC 3 → Large size plant
 → In the short period when the output demanded is OA. The firm can choose smallest size plant.

Concepts of Revenue :-

Total Revenue :-

Money that the firm receives from the sale of its products

$$T.R = P \times Q$$

↓ ↓
price Qty

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

$$\text{Avg. R} = \frac{T.R}{Q}$$

$$P = MC$$

[Condition for maximizing profit in perfect competition]

Marginal Revenue :-

It is always additional.

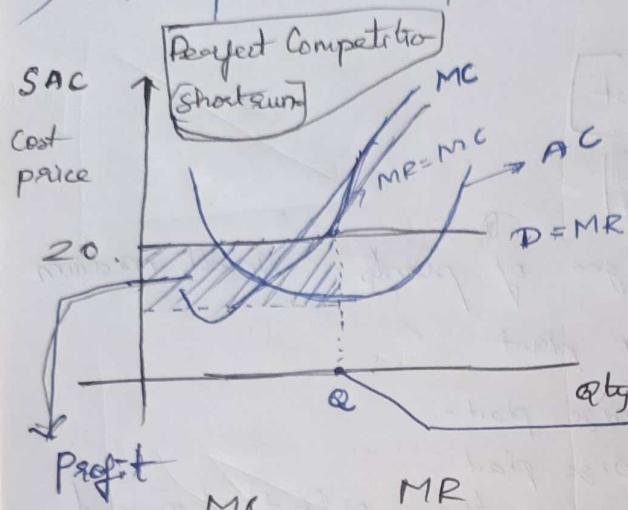
$$MR = TR_n - TR_{n-1}$$

Market Structures:-

1) Perfect Competition

2) Monopoly

3) Monopolistic competition



No	Price	TR	MR
1	10	10	10
2	20	20	10
3.	10	30	10
4.	10	40	10

Q by →
Zero economic
[Long run]

	MC	MR	
1	20	40	✓
2.	10	40	✓
3.	5	40	✓
4.	30	40	✓
5.	40	40	
6.	50	40	

$$MC = \frac{\Delta \text{cost}}{\Delta \text{Quantity}}$$

$MR = MC \rightarrow$ Profit Maximization Rule

$$\text{Profit} = TR - TC$$

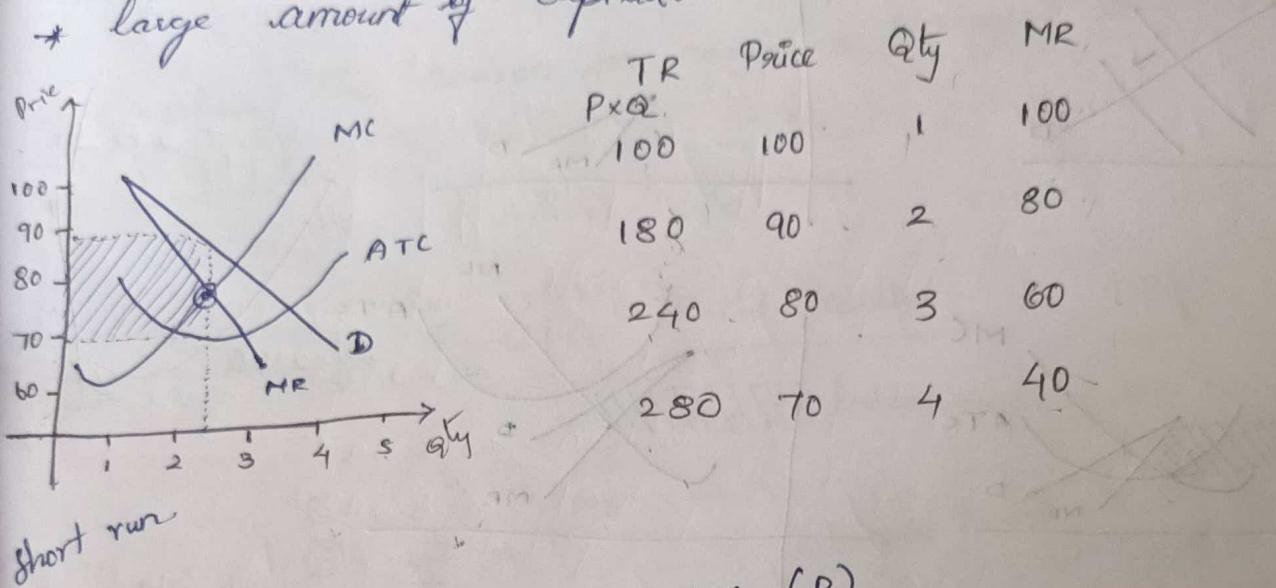
Characteristics of monopoly:-

- ① Single seller but he can't control the demand. [Control Supply]
- ② There is no close substitutes.
- ③ He can able to Yes or No the price.
- ④ No entry

[M RTP - Monopoly Restricted Trade practice law]

Causes of monopoly:-

- * Natural
- * Technical monopoly
- * legal
- * large amount of Capital.



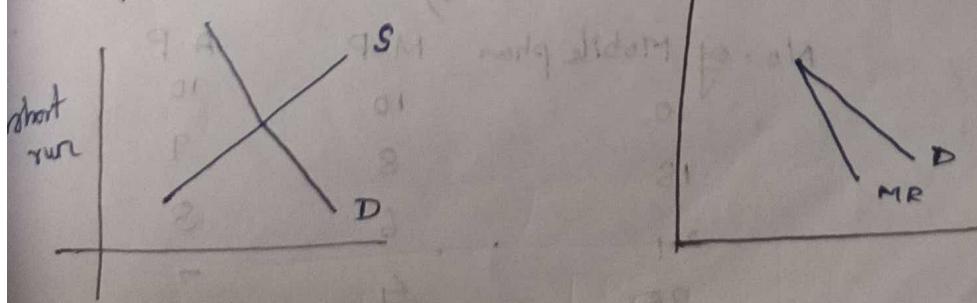
Qty \rightarrow Intersection of MR & MC (P)

Extend a line from P to D curve you will get price.

NOTE:-

- Monopolistic and monopoly is same in one
- ⇒ Monopolistic and perfect competition is also similar at some points.

Monopolistic competition:-

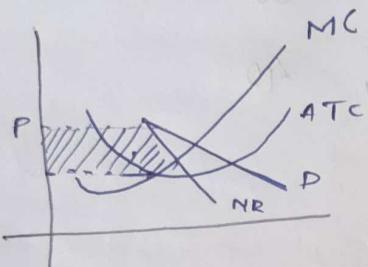
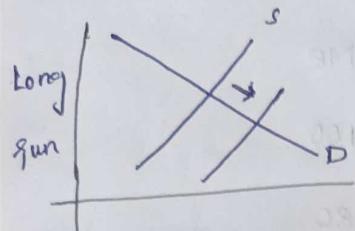


→ Existence of large no. of firms.

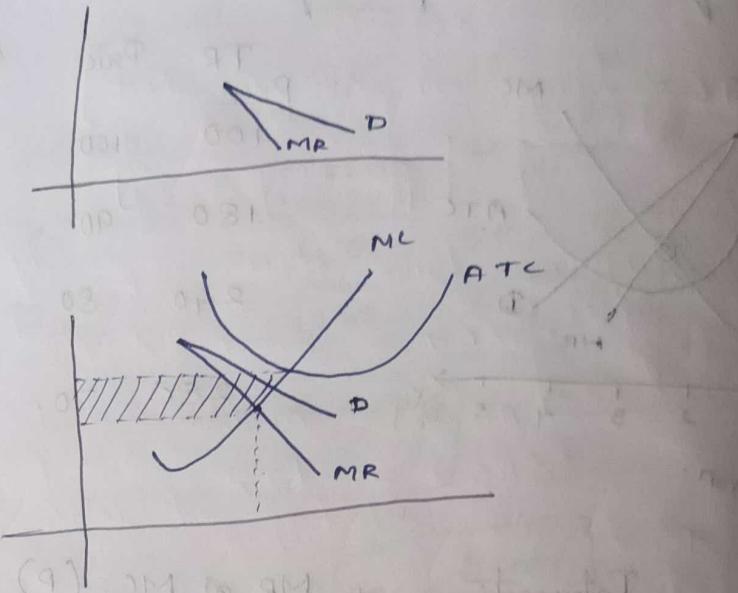
→ Product differentiation.

→ Selling Cost

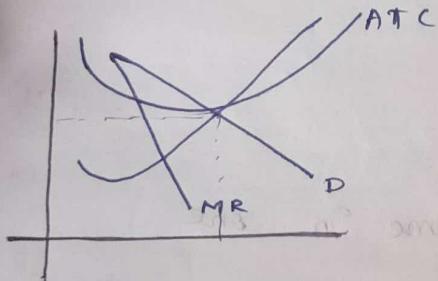
→ Freedom of entry and exit



PROFIT



LOSS



NO ECONOMIC PROFIT

Q. The levels of production corresponding to different no. of workers are given below

NO. of workers

NO. of workers	No. of Mobile phones	M.P	A.P
1	10	10	10
2	18	8	9
3	24	6	8
4	28	4	7
5	30	2	6
6	28	-2	4.66
7	25	-3	3.57

i) Calculate Marginal and Average product of labour for the production function?

ii) Explain diminishing returns to layers for this production function

iii) Explain the reason for negative Marginal Product of Labour?

Ans:- Average Product = $\frac{\text{Total Product}}{\text{No. of Labour}}$

$$\textcircled{1} \quad \frac{10}{1} = 10$$

$$\textcircled{2} \quad \frac{18}{2} = 9$$

Marginal Product =

$$\textcircled{3} \quad \frac{24}{3} = 8$$

$$\textcircled{4} \quad \frac{36}{4} = 9$$

$$\textcircled{5} \quad \frac{50}{5} = 10$$

$$\textcircled{6} \quad \frac{28}{6} = 4.66$$

$$\textcircled{7} \quad \frac{25}{7} = 3.57$$

Unemployment:-

→ Who is not gainfully involved in any production activity.

Voluntary unemployment:-

People who are unwilling to work at the prevailing wage rate. Because of their continuous flow of income from their property or other sources.

Fictional unemployment:-

→ It is a temporary phenomenon.
→ When workers temporarily out of work while changing jobs and also workers getting suspended due to strikes or lockouts.
[company closing]

Casual unemployment:-

Workers are employed on day to day basis due to short term contracts which are terminable any time

Seasonal unemployment:-

Production activities are seasonal in nature.
Eg. Agro based activities, Sugar mills.

Structural unemployment:-

It is caused by a decline in demand for production in particular industry.

Technological unemployment:-

Due to introduction of new machinery humans are replaced by technology.

Cyclical unemployment:-

i) Recessionary

ii) Depressionary,

Cronic unemployment:-

It tends to be a long term unemployment due to vicious circle of poverty high population growth e.g. afghan country

Disguised unemployment:-

Employment with surplus man power which promotes zero marginal productivity.

NATIONAL INCOME:-

1. Avg income of people in the country
2. Total income of the country
3. Industries
4. Tax
5. Remittance
6. Imports and Exports etc.

$$A E M + R M P = N I P$$

Capital should assist full employment

Stockless art of banking consists bank deposit

Aggregates of National Income:

- 1) GDP - Gross Domestic Product
- 2) NDP - National Domestic Product
- 3) GNP - Gross National Product
- 4) NNP - Net National Product

GDP - Gross Domestic Product :- [measures goods and services within country borders]

→ GDP is the standard measure of the value added created through the production of goods and services in a country during a certain period.

→ Monetary value, generated within the country, All final goods and Services [to avoid double counting]

→ Calculating month [APRIL - 1 TO MARCH 31st]

GNP - Gross National Product :-

→ GNP is the total value of all finished goods and services produced by a country's citizen in a given financial year, irrespective of their location. [measures goods and services by only a country's citizen]

$$\Rightarrow GNP = GDP + NFIA$$

[Remittance Interest on payments, Trade Imbalance]

NFIA → Net FACTOR INCOME ABROAD

→ All goods and services produced by the residents of a country

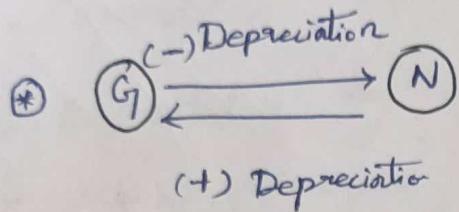
FORMULAS:

$$\textcircled{1} \cdot \boxed{NNP = GNP - \text{Depreciation}}$$

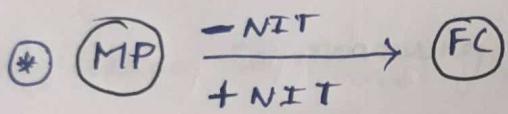
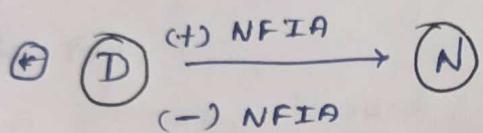
Factor Cost = Land, Labour, Capital, Entrepreneur
(FC)

$$\boxed{\begin{matrix} NNP \\ [FC] \end{matrix} = \begin{matrix} NNP \\ [MP] \end{matrix} - \text{Indirect Tax} + \text{Subsidies}}$$

MP - Market Price



NIT - Net Indirect Tax



$\Rightarrow GDP_{(MP)} \rightarrow NDP_{(FC)}$

$$\boxed{NDP_{(FC)} = GDP_{(MP)} - \text{Depre} - NIT}$$

$\Rightarrow GDP_{(FC)} \rightarrow NNP_{(NP)}$

Personal Income:-

Total income received by an individual from all sources.

$$\boxed{P.I = N.I - \text{Social Security Contribution} \\ + \text{National Income & undist Corporate Profit}}$$

Transfer Payments:

Redistribution of wealth from government.

Disposable Income: Adjusted gross product (GDP) - tax + tax relief

Individual income after the payment of income tax.
calculated by net disposable - TIN = NI

Measurement of N.I.: -

Production method

Expenditure method

Income method.

Production method:

Value added method

Final consumption method

Note:-

Total product produced in the economy are equated with market price to avoid double counting.
estimating GNP first.

Income Approach: - [All the income earned by all the means (GNI)]

→ This approach includes

Net rents, Rental Value of Owner occupied houses, wages, salaries and all such earnings
(Pension is excluded).

→ Income of joint companies.

→ Incomes of unregistered business units

→ Incomes from overseas investments.

→ Estimating GNI.
Interest from all sources.

GNI = Consumption + Investments + Net Balance of Payments

Expenditure method:-

- Considering spending on consumption and investment
- GNP is estimated
- Expenditure by consumption on goods & services
- Expenditure by PVT manufactures
- Expenditure by Government
- Money received from exports of goods and services
- Income received on foreign investments.

Difficulties in measuring NI

a) Conceptual difficulties

- There is always a difference in opinion about nation in NI.
- The non-Monetary Services are making difficulties (e.g. Humanity, Gratitude Based Services)
- Overlapping of occupation in rural sectors
- Rural sectors of backward economies
- Non-Monetized sectors

b) Statistical difficulties:-

- No Accuracy (especially)
- No proper data from small firm
- Banking sectors in rural (Unorganized sections)
- Regional disparities across states

NOTE :-

Effective Demand :-

It is the ability and willingness to spend by individuals, firms & govt.

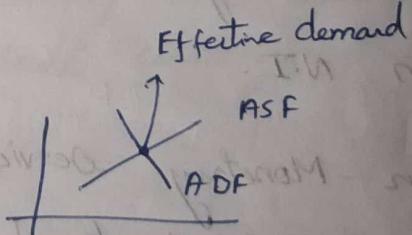
Principle of EFFECTIVE DEMAND:-

* It is important to note that all demand is not effective.

Aggregate supply = Cost

" demand = receipt

Intersect → max possible employment



we need to create effective demand to have employment

Aggregate demand:

Total expenditure of economy

$$AD = C + I + G + (X - M)$$

↓ ↓ ↓ ↓
Investment Consumption Expenditure Expenditure
expenditure. expenditure Govt expenditure

Export - Import

$$Y = AD = C + I + G + (X - M)$$

↳ After 3 page

Savings:-

$$S = a + by$$

$S \rightarrow$ Savings

$a \rightarrow$ Dis-saving

$b \rightarrow$ Slope

$y \rightarrow$ Income

$$MPC + MPS = 1$$

$$MPS = \frac{\Delta S}{\Delta Y}$$

Investments:-

1. Autonomous Investment:

* The Money Spent by govt for development of our economy.

Income Inelastic

Eg. Dams, Social welfare.

2. Induced Investment:

Made by private Sector

It depends upon profit

Income elastic

Expectation of future profit.

Multiplied =

Change in equilibrium Income

Change in expenditure

$$K = \frac{1}{MPS} \Rightarrow MPC + MPS = 1$$

Motives of money:-

- 1) Transactionary
- 2) Precautionary
- 3) Speculative.

NOTE:-

→ Money is the liquid asset.

Transaction motive:

→ The transaction motive relates to demand for money to meet the current transactions of individual and business units.

→ The income, which a person gets, is not continuous whereas expenditure is continuous. So, to bridge the gap between receipt of income and its expenditure people hold cash.

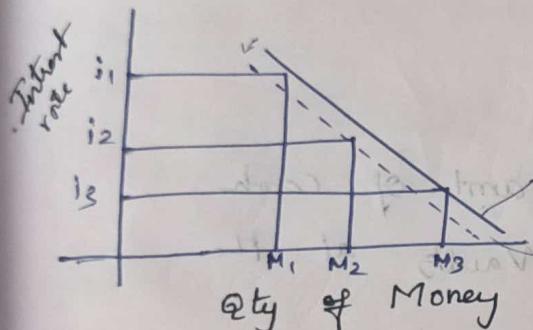
Precautionary Motive:

→ People wish to hold some money to provide for the risk of unforeseen events like sickness, accident etc...

→ The amt of money under this motive depends on the nature of individual and on the condition he lives.

Speculate:

- It refers to desire of the holder to keep cash balance as an alternative to financial assets like bonds
- The interest rate varies inversely with the market value of bond.
- Interest rate ↑ Market value for bond.

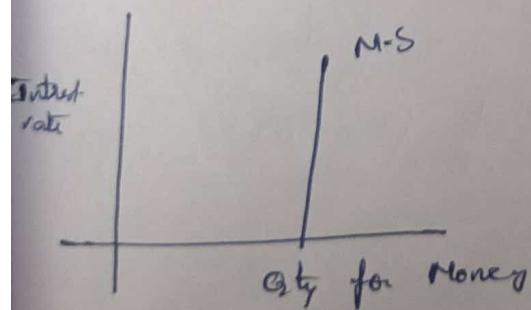


If Rate ↑s the demand Curve

Demand for money decrease

Shifts in money demands:

- 1) Price level
- 2) Incomes
- 3) Technology



Shifts in Supply.

- 1) Open Market operation [The Govt will sell something like bonds]
- 2) Reserve requirements
- 3) Discount rate

Open Market Operations:

To decrease money supply. RBI on behalf of Govt will actually sell the bonds and debentures [type of investment]

Reserve Requirements:

→ Reserve requirements are the amt. of cash that banks must have in their vaults at the close of FRB day.

→ Reserve requirements are a tool used by the central bank to increase or decrease the money supply in the economy and influence interest rates.

Discount Rate:

Money Supply:-

$$M_1 = CU + DD$$

↓

net demand deposits
Currency coins & notes
Most liquid.

$$M_2 = M_1 + \text{Savings}$$

[post office & banks]

M_1 & M_2 are called narrow money

$$M_3 = M_1 + \text{Net time deposits of banks}$$

$$M_4 = M_3 + \text{Total deposits with post office}$$

excluding national saving certificate

~~or~~ M_3 & M_4 are ~~broad~~ money

Money multiplication:-

The money multiplier is a phenomenon of creating money in the economy in the form of credit creation.

LRR → Legal Reserve Rates

CRR → Cash Reserve Ratio,

SLR → Statutory Liquidity Ratio.

$$\text{Money multiplier} = \frac{1}{LRR}$$

$$LRR = CRR + SLR$$

Deposit	Loan	LRR
1000	900	100
900	810 (900 × 90)	90
810	:	:
⋮	⋮	⋮
10000	9000	1000

CREDIT CREATION:

Credit creation is the expansion of deposits where the banks expand their demand deposits as a multiple of their cash reserves.

FORMS OF MONEY:

Clear money:-

→ When there is inflation in the country, central bank tries to control it by fall dear money policy.

→ When interest rates are high, this dear money Policy is used.

Cheap money:-

→ Loans which are available at low interest rates.

→ During depression, we make use of cheap money.

Aggregate Demand depends on

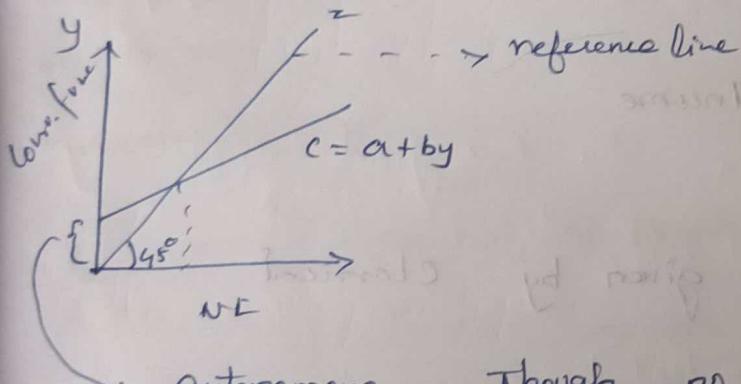
[How much we consume from Income] Propensity to consume [Consumption func]

[How much we invest from Income] Inducement to invest [Investment func]

Consumption function.

Run b/w Income & Consumption

$$C = a + by \quad [\text{consumption depends on Income}]$$



→ Autonomous Though no income we will consumption borrow and eat

b is MPC

The rate of change in consumption due to change in income depends on the MPC

$$MPC = \frac{\text{Change in consumption}}{\text{Change in income}}$$

$$MPC = \frac{\Delta C}{\Delta Y}$$

$C = a + 0.8Y \rightarrow 80\% \text{ for consumption rest for saving.}$

Keynesian Law of Consumption:

- ⇒ Increase in income and increase in consumption are not at the same proportion. Consumption function is +ve but less than 0.
- ⇒ An increase in income is share between consumption & saving
- ⇒ Increase in income will not cause rise in consumption and saving at the same time. If the rate of increase in saving rise, rate of increase in consumption less.

Keynesian's Model for Income Determination:-

Free Market Idea was given by Classical economist

Their idea of how free market would solve unemployment was widely accepted until the great depression of 1930's

Capitalistic Economy:

- ⇒ Applicable in long run

DA	=	1964
EA	=	

Classical theory of

FULL EMPLOYMENT:-

- * It assumes that existence of full employment.
- * An Economy produces as much as it can
- * Say's Law \Rightarrow "Supply creates own demand"

This means that production of every good generates sufficient income to ensure that there is enough demand for the goods produced.
[long term]

- No Overproduction
- $AD = AS$
- Savings = investment
[Supply \rightarrow demand \Rightarrow Employment]
didn't consider Mass production

Belief:

- \Rightarrow Free market (Invisible hand), Always - FULL Employment
- \Rightarrow Deficiency of aggregate demand cannot occurs

Classical theory

"Income and Employment are Correlated"

Main focus on Aggregate Supply

Aggregate Supply = Aggregate demand
equilibrium

Keynesian theory of Income determination

*) Income $\uparrow \rightarrow$ employment \uparrow

[closed economy]

+) Short run \Rightarrow Income $\uparrow \Rightarrow$ Employment \uparrow

+ Total Income depends on total employment which depends on effective demand which in turn depends on consumption expenditure & investment expenditure.

+ Consumption depends on income and propensity to consume.

Investment depends upon the Marginal efficiency of capital & the rate of interest

Effective Demand:- $(ADA = ASF)$

*) Ability and willingness to spend by individual firms and govt. at the level of output produced and the level of employment depends on the level of total spending in the economy.

*) Aggregate demand $\checkmark \Rightarrow$ Employment

Aggregate supply X.