

Ch-1.

1. Macroeconomics I.

It studies economic problem at aggregate level, i.e., at the level of entire economy. Aggregate consumption, aggregate employment, national income etc. are studied in this branch of economics. It is also called "Income and Employment Theory."

Definition :-

"Macroeconomics deals with the functioning of the economy as a whole."

• Scope of Macroeconomics.

1. Theory of National Income I.

Macroeconomics studies the concept of national income, its different elements, methods of measurement and social accounting.

2. Theory of Employment I

Macroeconomics also studies problem relating to employment and unemployment

It studies different factors determining the level of employment viz effective demand, aggregate supply, aggregate consumption etc.

3. Theory of Money ↓

Change in demand for and supply of money have considerable effect on the level of employment. Macroeconomics therefore studies function of money and theories relating to it.

4. Theory of General Price level ↓

Determination of and changes in general price level are also studied under macroeconomics.

5. Theory of economic growth ↓

Study of problem relating to economic growth or increase in per capita real income form part of macroeconomics.

6. Theory of International trade ↓

Macroeconomics also studied trade among different countries. Theory

of international trade, tariff, issues and problem relating to protection etc. are subjects of great significance of macroeconomics.

- Two schools of thought relating to macroeconomics classical and Keynesian.

1. The classical school of thought ↓

It includes economists

like Mill, Malthus, Pigou and Ricardo. In their study of macroeconomic problems the Classical school advocated for a free economy or free market economy. It is an economy in which the govt. does not interfere in economic matters, that is, in the areas of production, consumption or investment. Acc. to classical economist full employment equilibrium is a normal feature of free market economy.

2. The Keynesian school of thought ↓

The school of thought is

dominated by the view points of Lord Keynes. His approach is more practical than the classical economists. He had concluded that full employment was not a normal feature an economy. Situation of unemployment could be solved only through direct intervention of govt.

Interdependence between micro and macro economics.

1. Microeconomics depend upon macroeconomics.

Micro Variable depends on the level and behaviour of macroeconomic Variable. It is so because theories of macroeconomics are based on the assumption of "other things being equal". This assumption shows the effect of macroeconomics on microeco. because economy as a whole is the aggregate of different individual economic units. So, it is essential to understand the behaviour of individual economic units.

2. Macroeconomics depends upon microeconomics

Following illustrations show how macro Variables depends upon the level and behaviour of microeconomic Variables in the economy.

$$AD = \sum d_i$$

Here Ad = Aggregate demand, d = demand
i = different goods and services

ch-2.

Structure of macroeconomics ↓

It means study of a different sector of the economy. An economy may be divided into different sectors on the basis of on the nature of study. Economy is often classified into the following five sectors.

1. Producer sector ↓

This sector is engaged in the production of goods and services

2. Household sector ↓

This sector is engaged in the consumption of goods and services

3. Government sector ↓

This sector is engaged in such activities as are related to taxation and subsidies

4. Rest of the world sector ↓

This sector is

engaged in the exports and imports

5. Financial sector →

This sector is engaged in the activities relating to depositing and lending of money.

Meaning and Causes of circular flow of Income and product

Circular flow of Income and product refers to the flow of money income or the flow of goods and services across different sectors of the economy in circular form. This flow is known as circular flow of Income and product because this flow has neither and beginning nor an end. Two main causes of circular flow are :-

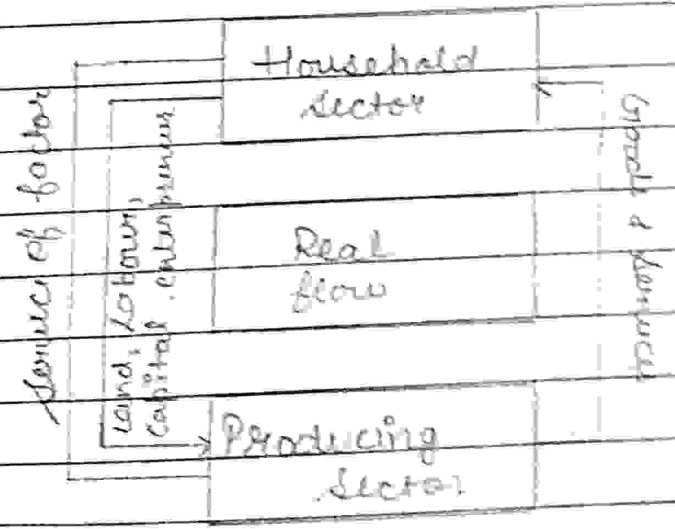
1. Corresponding to each real flow to one direction, there is a money / Income flow from the opposite direction.
2. Receipt of one sector from other sectors are equal to the payment of other sector.

Circular flow of Income and product

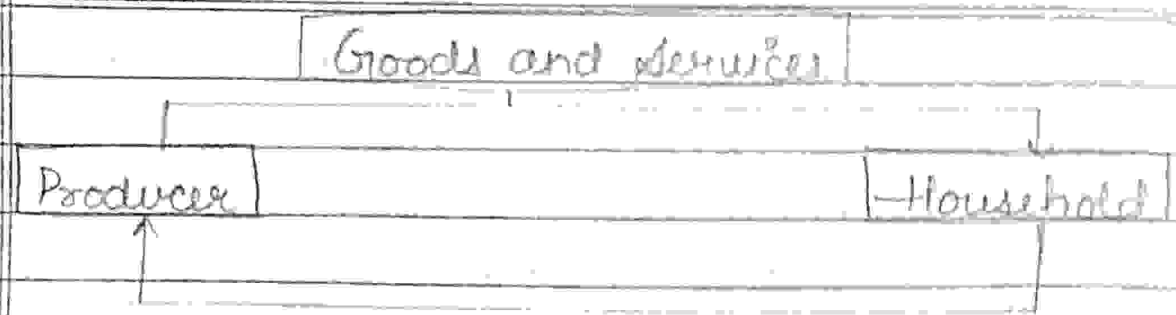
Circular flow of Income and product can be studied through two different angles. i) Firstly, flow in terms of goods and services. It is called real flow. ii) Secondly, flow in terms of money. It is called monetary flow.

1. Real flow →

Real flow of Income means the flow of factor services from the household sector to the producing sector and the corresponding flow of goods and services from the producing sector to the household sector.



A Real flow model



Factor service (service of Land, Labour, Capital and entrepreneurship)

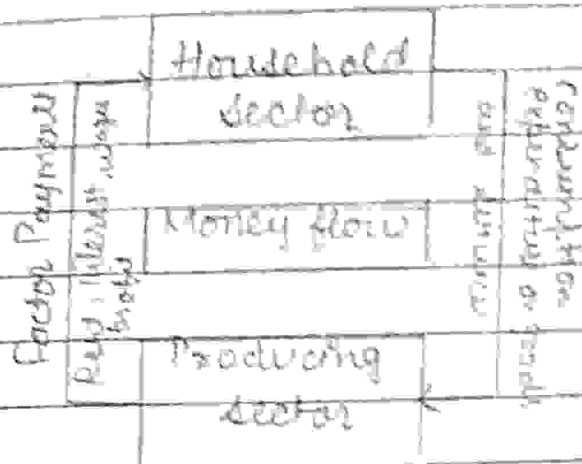
This circular flow chart shows real flow in terms of

- i) The flow of goods and services from producers to household and
- ii) the flow of factor services as Labour, Capital and enterprise from household to producers.

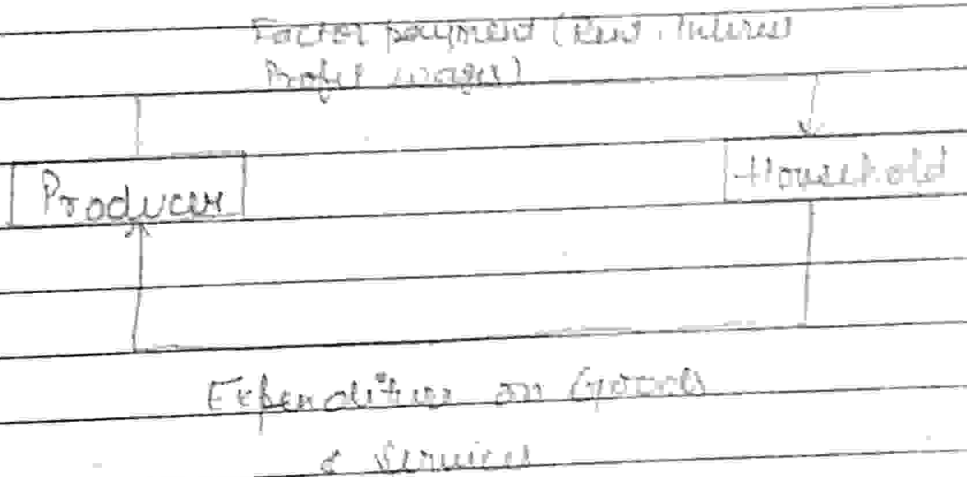
Money flow ↴

Money flow refers to the flow of payments or income, viz rent, interest, profit and wage from the producing sector to the household sector as monetary rewards for their factor services. The households spend their income on the goods and services produced by the producing sector. Accordingly, money flow back to the producing

Sector as household expenditure.



A money flow model



Two sector model of circular flow of Income.

Under this model circular flow of income b/w two sectors of economy i.e., i) Household sector and ii) Producing sector is studied.

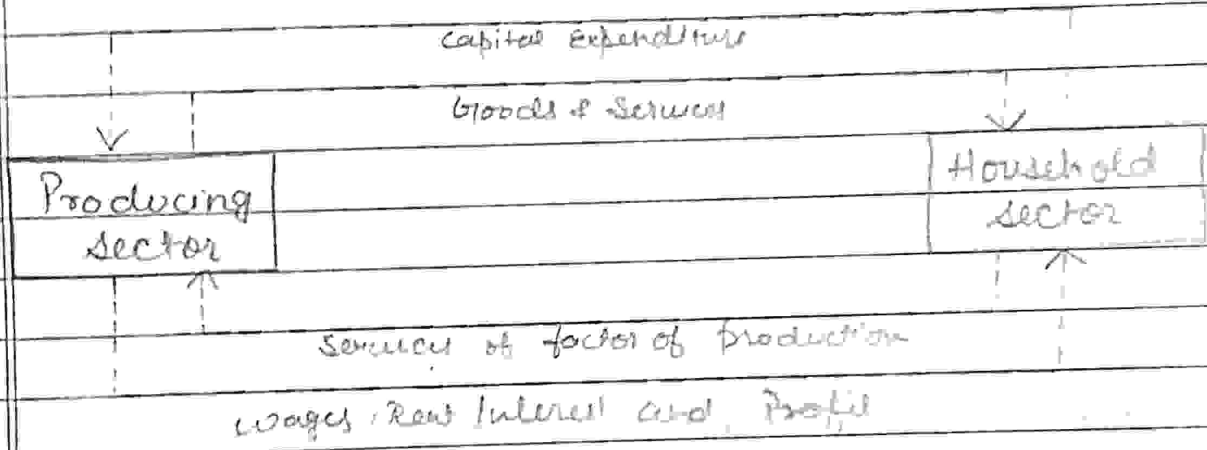
assumptions:-

1. It is assumed that there are only two sectors in economy a) Producing sector :- It produces final goods and services by making use of the factor service . viz, labour capital and land etc. b) Household sector :- It provide factor services to producing sector and consumes final goods and services produced by it.
2. Govt. has no influence over the economic activities.
3. It is a closed economy, meaning thereby that no export and import activity is undertaken by producing sector and household sectors.
4. Household sector spends all its income on goods and services . In other words, no saving is done.

Explanation :-

The outer circle represents the real flow and inner circle represents the monetary flow. Real flow indicates that the services of the factor flows from household sector to producing sector and Goods & services flows from

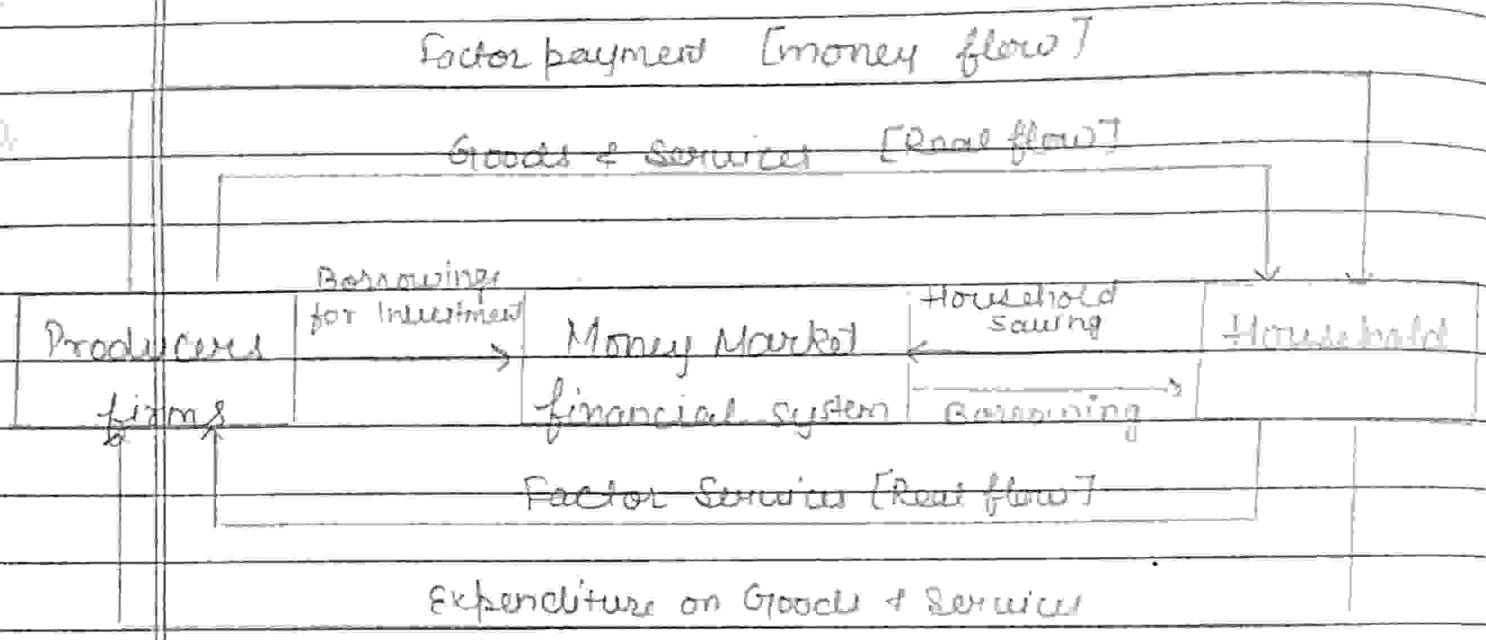
producing sector to household sector.
 Monetary flow express the rent, wages, interest and profit in terms of money flows from producing export to household sector. On the other hand, the expenditure on consumption of goods and services in term of money flow from household sector to producing sector. Monetary receipts of the producers = Income of household = Consumption expenditure of households.



2. Two sector model with Savings :- Investment/ financial system.

As a matter of fact, households tend to save a part of their income. Emergence of saving implies the emergence of a financial system. It refers to the existence of a money market in the economy. These financial intermediaries serve as a link b/w savers and investors. Those who

who save, deposit their savings with the financial intermediaries and those who borrow funds from these financial intermediaries.



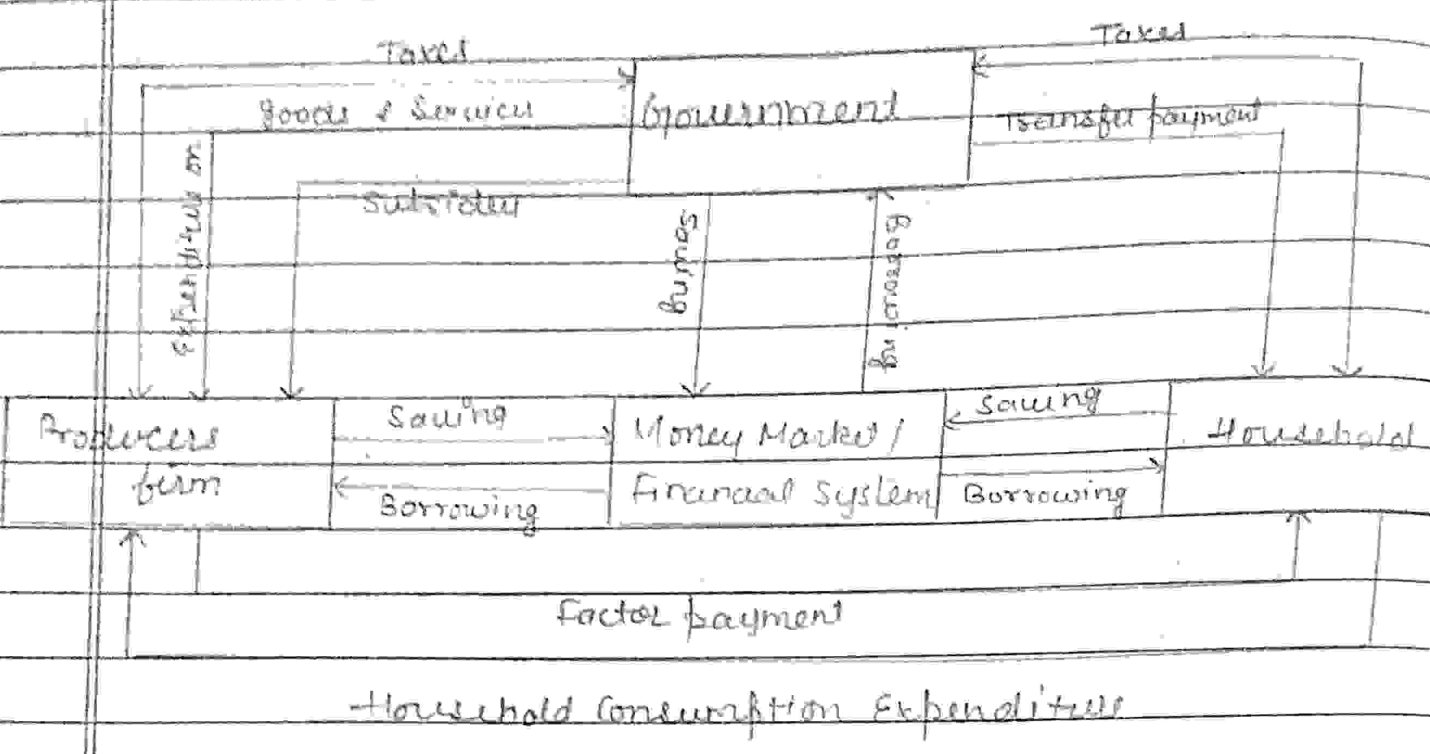
3) Three sector model of the Circular flow of income

There is another sector into our circular flow model viz. the govt. sector. The govt. performs the following activities in the economy.

leaves

1. The govt. services takes on the household / like income tax, house tax. Accordingly, money flow from the household to the govt.

2. The govt. levies taxes on the producers/firms (like excise duty, sales tax). Accordingly, money flows from firms to govt.
3. The govt. offers subsidies to the producers. Accordingly, money flows from govt. to producers.
4. The govt. offers financial help to the household in the form of old age pension to the senior citizens. Accordingly, money flows from govt. to the household. These are called transfer payment.
5. The govt. saves, causing flow of money from govt. to money market.
6. The govt. borrows money, causing flow of money from money market to govt.
1. The govt. buys goods and services. Accordingly, money flows from govt. to producers.



4. Four sector model of circular flow of income

From the point of view of circular flow of income, each sector plays a dual role, it receives certain payment from other sector as well as makes certain payments to other sector of the economy. Circular flow of income in different sector can be expressed in the following manner. There are different sectors of economy.

i) Household sector ↓

The receipt and payment household sector are as under

1. Receipt → The household sector receives factor income from the producing sector. These factor incomes are wages, Rent, Interest, profit. It also receives certain transfer payment from the govt. sector.

2. Payments → Household sector makes payment to the producing sector for the goods and services that it buys from the latter. It is its consumption expenditure. It also pays direct taxes to the govt. sector. Saving of this sector flows into capital market.

ii) Producing sector ↓

The main receipts and payment of the producing sector are as follow:-

1. Receipts →

Producing sector receives its income from household and Govt. sector return for the goods and services i.e., sells them. It also receives income from rest of the world sector in return for its export. It obtains loans from the Capital market as well. Producing sector may also get subsidies from the Govt. sector in order to increase producing.

2. Payments → The producing sector makes factor income payments to the household sector for using the factor services. It pays taxes to the Govt. sector. Payments are also made to the rest of the world for imports. Savings of the producing sector goes to the Capital market.

iii) Govt. sector ↓

The main receipts and payments of the Govt. sector are as follow.

1. Receipt → Govt. receives direct taxes from the household sector and indirect taxes and Co-operation taxes from the producing sector. Thus, there is a flow of income in the form of taxes from

household sector and producing sector to govt. sector

ii) Payments → The govt. sector makes payment to the producing sector for the purchase of goods and services. It also pays the producing sector by way of subsidies. Various kinds of transfer payment are made to the household sector viz, in the form of old age pensions, scholarships etc.

iii) Rest of the world Sector ↓

The principal receipts and payment of rest of the world sector are as follows :-

a) Receipts:- Our producers exports their goods and services to rest of the world. According, money flow from external sector to producer in the form of export receipts.

b) Our residents receive gifts / transfer payments from rest of the world. They also make gifts / transfer payments to rest of the world.

$$\text{Transfer payments received} - \text{Transfer Payment made} = \text{Net transfer payment}$$

Our residents receive factor payments from rest of the world for rendering their factor services. Likewise, we make factor payments to rest of the world.

Factor payment from rest of the world - Factor payment to rest of world = Net factor payment from rest of the world

b) Payments →

Importance of Withdrawals and Injections in the circular flow of Income.

1. Withdrawals or Leakage ↓

A withdrawal or leakage from the circular flow of income is income received by one sector that is not passed on to the other sector. If factors of production do not spend their income on the goods and services produced, then it is called withdrawal.

"A withdrawal or leakage of income refers to that part of income which does not go back to the circular flow of

income in the form of expenditure" —Lipsey.

Leakages are those flow variables which have a negative impact on the process of production. These are:

- i) Saving ii) Imports iii) Taxes by the Government.

2. Injections ↓

Injection of income refers to an increase in income outside the circular flow in some other manner.

"An injection into circular flow is income received by a sector, that does not arise from the spending of other sector." —Lipsey.

Injections are those flow variables which cause an increase in the process of production in the economy. These are

- i) Investment ii) Exports iii) Consumption expenditure by the households and government.

Significance of Circular flow of Income

1. Knowledge of Interdependence ↓

Understand interdependence between different
Circular flow model helps to

sectors of economy. Eg:- we learn how producers depend on the households, and how household depend on the producers

2. Identification of Injections and Leakages ↴

Circular flow models help in Identification of the system of injections and leakages in the economy. we can know how significant are the 'injections' (like Investment and exports) in relation to 'withdrawals'.

3. Estimation of National Income ↴

Circular flow models

facilitate the estimation of national income. Eg:- National income is the sum total of factor incomes flowing from producers to households of a country. It may also be defined as the market value of goods and services flowing from producers to other sector of economy.

4. Relative Significance of Macro Variables ↴

Circular flow model offers information on various macro variables, viz, national income, consumption, saving, investment, etc

Stock and Flows Concepts

1. Stock ↓

A stock is a quantity measured at a particular point of time. On Jan 1, 2016 there may be ₹1000 in your bank a/c. On Jan 10, 2016, there may be ₹5000 in your bank account. All such values are stock values, as these are measured at a specific point of time.

2. Flows ↓

A flow is a quantity measured over a specified period of time. You may be getting ₹150 per month as pocket allowance, you may be spending ₹5 everyday in the canteen, you may be getting 5% interest on your bank deposits annually. All these value/quantities are 'Flows' as these are measured per unit of time period. Income, expenditure, production, consumption are the examples of flow variable.

	Stock	Flow
1.	Stock Wealth	Income
2.	Capital	Capital formation
3.	Labour force	Expenditure of money
4.	Bank deposits	Interest on capital
5.	Supply of money in Country	change in supply of money in country.

S/no.	Stock	Flows
1.	Stock related to point of time eg. your saving on Jan 1, 2016 are 20,000	Flow related to period of time. eg. your pocket expense of ₹20 per day.
2.	Stock is not time dimensional	Flows is time dimensional as per hour, month, per year
3.	Stock influence the flow. Greater the stock of Capital, greater is the flow of goods and services.	Flow influence the stock. Eg:- Monthly increase in supply of money leads to an increase in quantity of money.
4.	Some Concepts in economics donot have their stock aspect such as Import and exports.	Imports and exports are used only as flow concept.

Ch-8

Deficient demand \rightarrow

Deficient demand refers to a situation in which aggregate demand (AD) is short of aggregate supply (AS) corresponding to full employment in the economy.

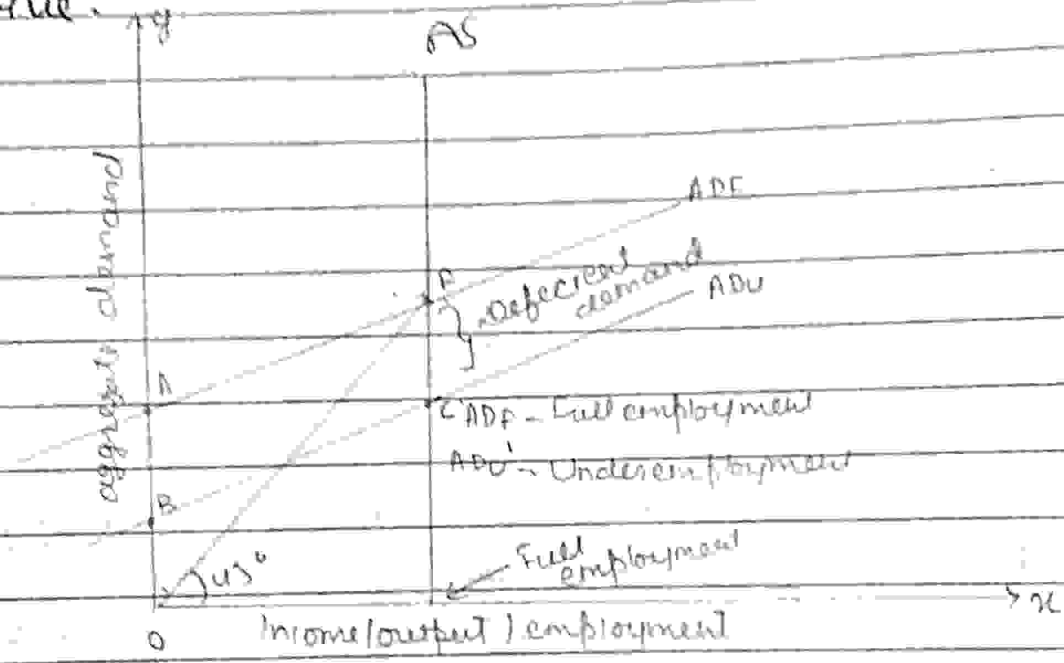
$AD < AS$: Corresponding to full employment.

Two main features of deficient demand are as follow.

1. The level of aggregate demand happen to be short of its full employment level. Accordingly, "full capacity" production will not be possible. There will be some unemployment of labour. In other words there will be involuntary unemployment.
2. The level of aggregate demand fails to cope with the level of aggregate supply up to the point of full employment in the economy. Accordingly, aggregate supply is reduced to match the existing level of demand. In other words, there is underemployment equilibrium in economy.

Diagrammatic illustration - I

It illustrates the situation of deficient demand in the economy. In this figure, the level of income and employment is represented on X-axis and aggregate demand on Y-axis. AS is aggregate supply curve and AD_p , AD_u are aggregate demand curve.



$$\text{Deficient Demand} = AD_p - AD_u = FC.$$

Consequences of deficient demand

1. When AD fails to catch up with the full utilisation of resources producers will build up inventory stock of more than what they desire.
2. Undesired inventory stock would force the producers to plan lesser production.

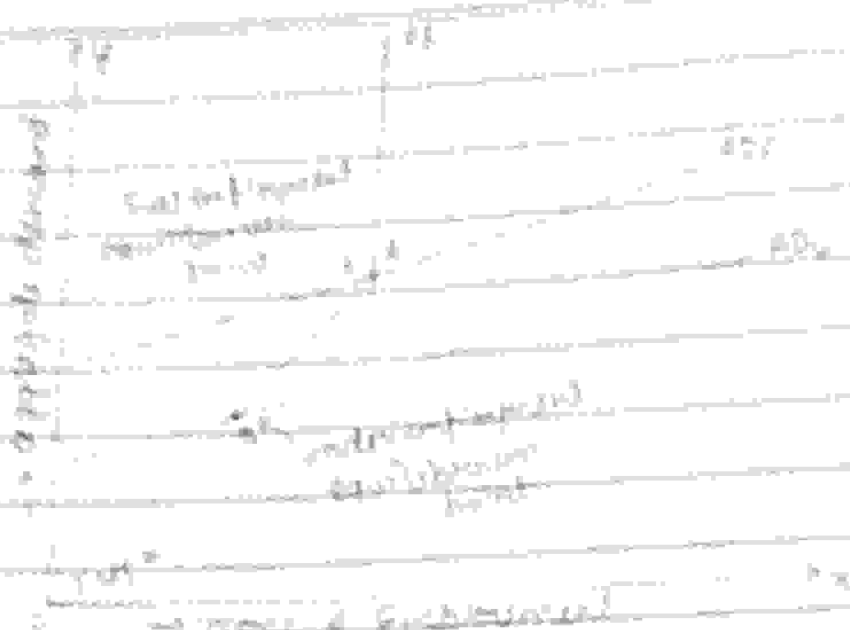
for the next years, implying reduction in planned AS.

- 3. Reduction in planned AS means a situation of reduction in the level of planned output
- 4. Reduction in the level of planned output causes a situation of reduction in the level of income and employment.

Explanation.

Briefly, in a situation of deficient demand, the economy is driven to a state of low level of output, income and employment

In this figure, AD is shown on Y-axis and income and employment is shown on X-axis. AS shows aggregate supply curve and AD_f curve shows full employment level. Aggregate demand curve (AD_u) shows underemployment level of aggregate demand. Point A and AD_f curve is full employment equilibrium point. Due to deficient demand, the economy will shift from point A to B on Underemployment equilibrium demand curve AD_u .



Deficient demand implies deflationary gap

Due to deficient demand, economy faces a situation of low output, low income and low employment. In macroeconomics such a situation is often described as a situation of deflation.

Deflationary pressure is proportional to the deficiency of AD. Greater the deficiency of AD, greater the deflationary pressure. Accordingly, deficiency of AD is often described as deflationary gap. The deflationary gap is a measure of deficient demand. Deflationary gap is a shortfall in AD from the level required to maintain full employment equilibrium in economy.

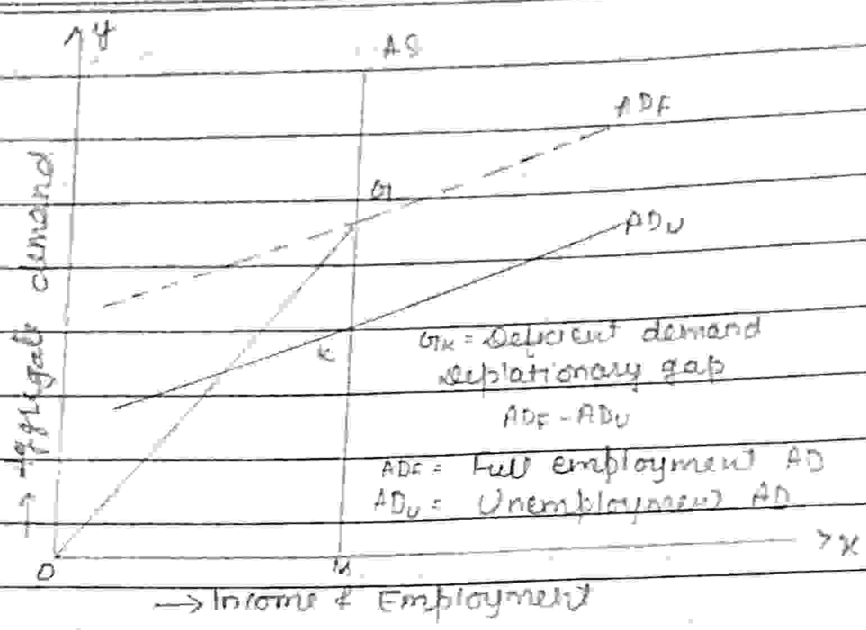
Measurement of Deflationary Gap

Deflationary gap is measured as the difference between 'desired AD corresponding to full employment' and 'planned AD corresponding to unemployment'

$$\text{Deflationary Gap} = AD_F - AD_U = GK.$$

Here, AD_F = AD corresponding to full employment,
 AD_U = AD corresponding to under employment

In this figure, the level of income, output and employment is shown on x-axis and aggregate demand is shown on y-axis. As is aggregate supply and AD_F & AD_U are aggregate demand curve. The desired level of demand for full employment production is indicated by AD_F in the figure. It is equal to OM . Corresponding to this level, the equilibrium is attained b/w aggregate demand and aggregate supply at point G and there is full employment of labour up to OM on x-axis. AD_U curve indicates deficient demand in the economy. The difference deficiency or deflationary gap is equal to the Gap GK b/w AD_F and AD_U .



Excess demand ↓

Excess demand refers to the situation when AD is in excess of AS, corresponding to full employment in the economy

$AD > AS$: Corresponding to full employment

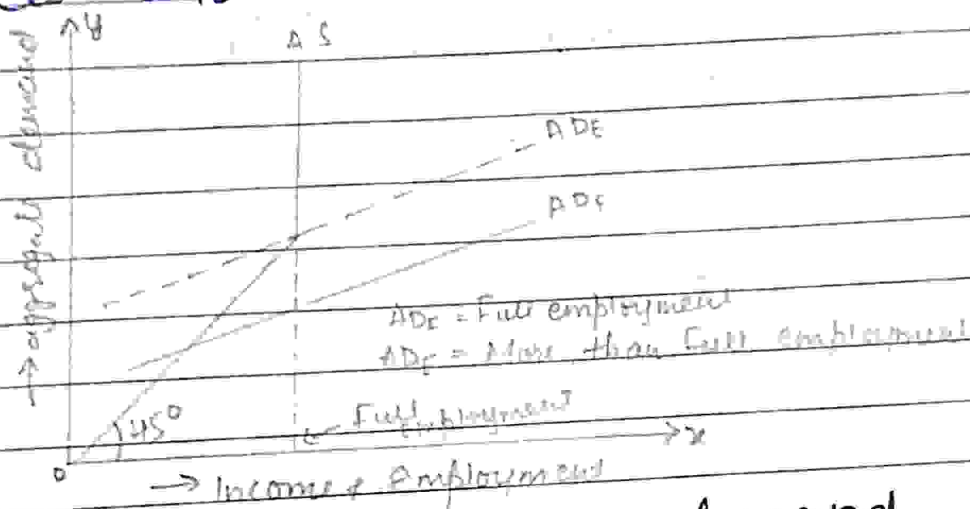
Features of Excess demand :-

1. Planned AD in the economy happens to exceed its full employment level ↓

Since resources have already been fully utilised, therefore, AS can't be raised, demand only implies greater pressure on the available goods. Accordingly, price tends to rise

Q. The level of AD (or planned expenditure) surpasses the level of AS curve when there is full capacity production in the economy.

Accordingly, the market value of the existing goods and services tends to rise.



Consequences of excess demand.

1. When AD increases beyond its full employment level, output remain constant. It is because output can't increase after its full employment level.
2. Flow of goods & services, remaining constant, excess demand means pressure of AD on existing AS.
3. Excess pressure of AD on existing AS must cause rise in prices. This implies a situation of inflation.

4. Inflation Cause increase in cost of production. Accordingly, price tends to rise still further.

Excess demand implies Inflationary Gap

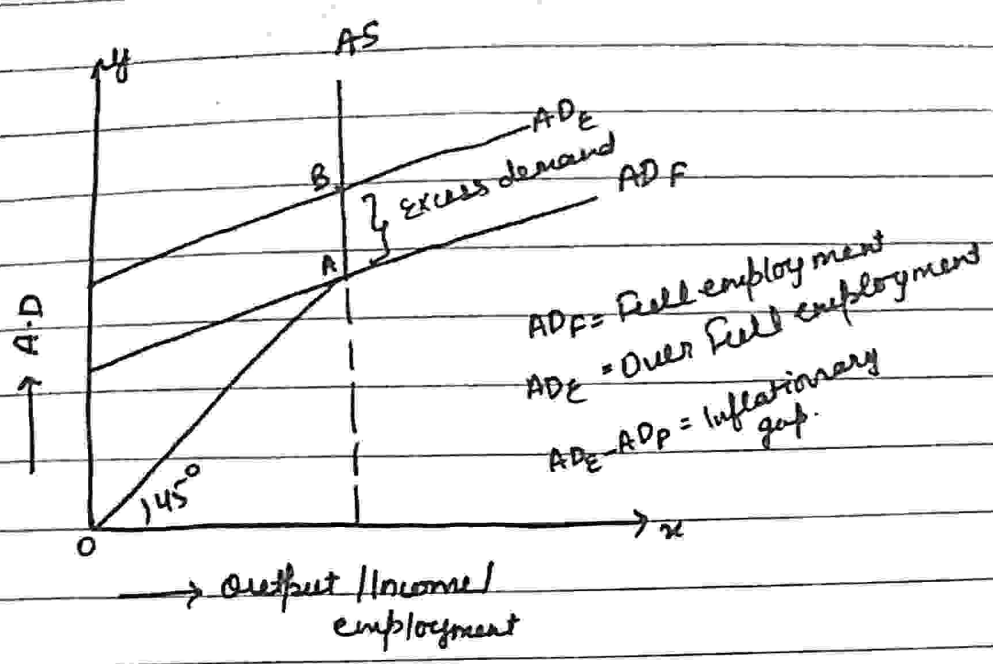
while in a situation of deflationary gap the economy faces a situation of both low output and low prices. On the other hand, in a situation of inflationary gap the economy does not face a situation of higher output. Output level remains constant corresponding to full employment. Only price tend to rise. A situation of inflationary pressure. Inflationary gap is measure of excess demand.

Measurement of Inflationary gap

Inflationary gap is measured as the difference b/w 'AD beyond full employment' and 'AD corresponding to full employment'.

$$\text{Inflationary gap} = AD_e - AD_f = FC$$

(Here, AD_e = AD beyond full employment ;
 AD_f = AD corresponding to full employment)



In this fig, aggregate demand is measured on y-axis and income/output/employment on x-axis. AS is aggregate supply curve which become vertical on point C. Point C shows full employment equilibrium level. AD_F is full employment aggregate demand curve. AD_E is over full employment aggregate demand curve. The diff. b/w over full employment aggregate demand and full employment aggregate demand AD_F is inflationary gap.

Excess demand = Inflationary gap = $AD_E - AD_F = FC$

Difference b/w Excess demand and Deficient demand.

Basis	Deficient Demand	Excess demand
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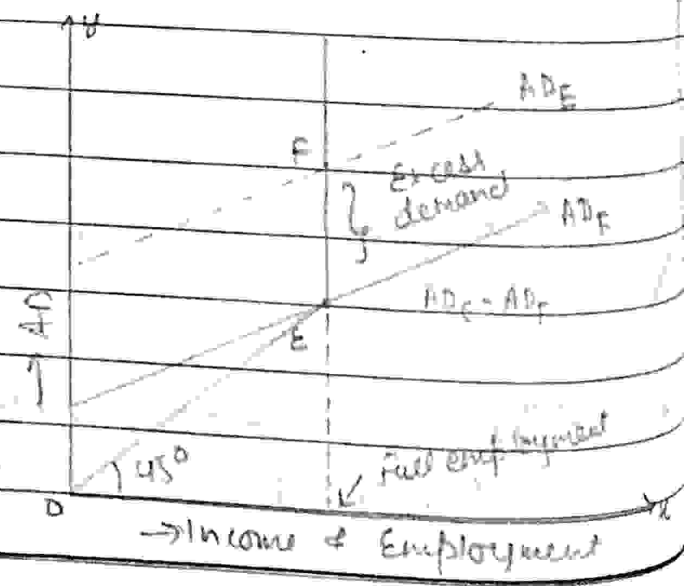
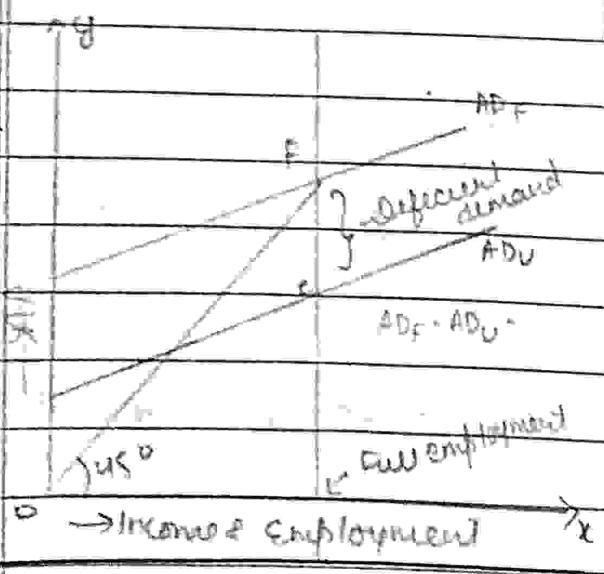
Meaning	It refers to a situation where aggregate demand (AD) is short of aggregate supply (AS), corresponding to full employment	It refers to a situation where aggregate demand (AD) is excess of aggregate supply (AS) corresponding to full employment
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Inflationary / Deflationary Gap	It generate deflationary gap.	It generate inflationary gap.
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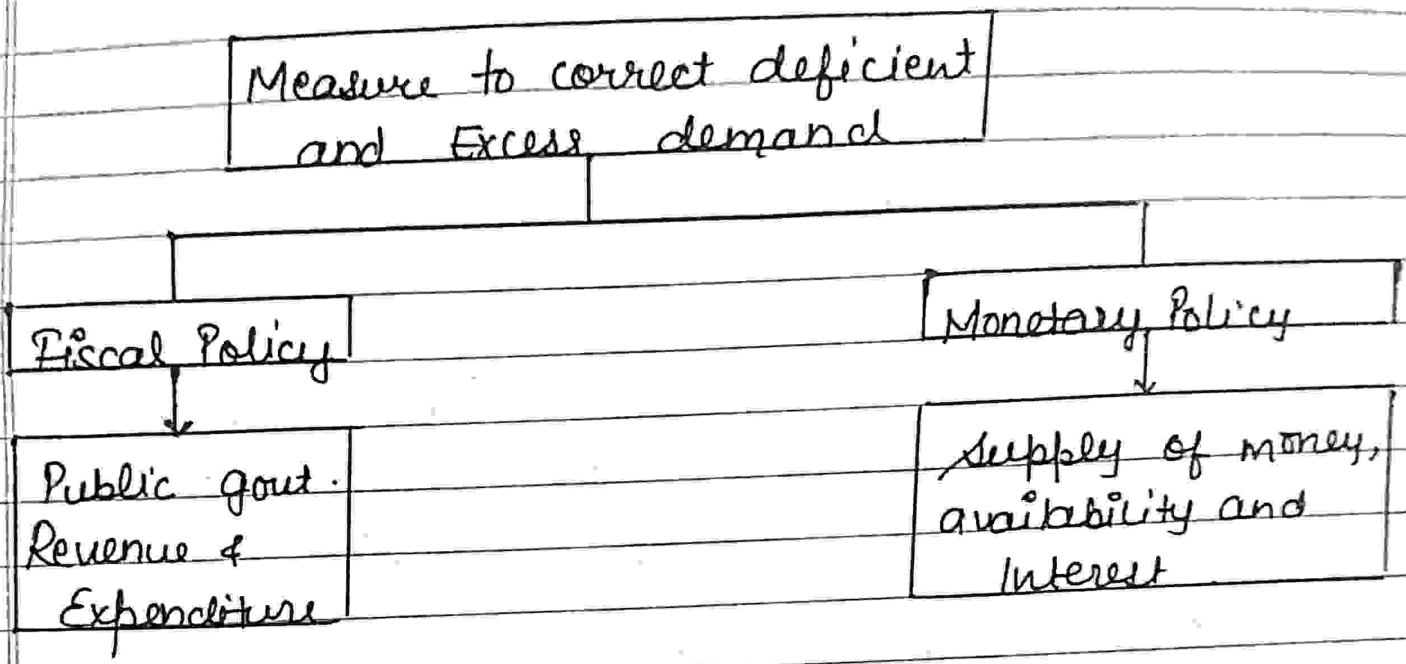
Nature	It is a short of what is required to maintain full employment equilibrium in economy.	It is a surplus of demand over and above what is required to maintain full employment equilibrium.
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Output, employment, price	Output, employment and level of price tends to reduce	Only price tends to rise and no rise in output and employment
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Graphic presentation



Ch-9



Fiscal Policy :-

Fiscal policy refers to budgetary policy of govt. or the policy related to revenue and expenditure of govt with a view to correcting the situation of excess demand or deficient demand in economy.

Measurement / Instruments of fiscal policy.

- 1) Fiscal measures / Instruments related to govt. expenditure.
1. Public works like the construction of roads, dams, bridge etc.
 2. Public welfare activities like education, public health etc.

3. Defence of country and maintenance of law and order.
4. Subsidies to the producers to produce more

9) Fiscal measure/Instrument related to financing of govt. Expenditure or public Revenue.

1. Taxes ↴

Tax is a compulsory payment to govt according to prescribed laws. Taxes are of two types.

a. Direct taxes :- Direct taxes are those taxes which are levied on income and property of persons. The burden of these taxes are borne by those persons on whom these are levied. Income tax, gift tax, wealth tax, are some examples of direct taxes.

b. Indirect taxes :- Indirect taxes are those taxes which are levied on goods and services. The burden of these taxes may be transferred to other person. Sales tax, excise duty, custom duty, are some example of indirect taxes.

2. Public debts ↴

Public debts refers to the debts or loan or borrowing

by the govt. from the public.

iii) Deficit financing ↓

In India, deficit financing refers to issuing of more currency to meet budgetary deficit. It increases the supply of money in the economy.

Fiscal policy and deficient demand or deflationary gap.

1. Decrease in Taxes ↓

Taxes should be decreased leaving on the households with more purchasing power and the firms with more cash reserves. As a result, both household as well as inventors will be encouraged to spend more. Consequently, aggregate demand will increase or decrease and deficient demand to be correct.

2. Increase in public expenditure ↓

The most important measure to raise level of demand is to increase public expenditure. Thus i) Greater expenditure should be incurred on the public health and education etc. ii) Greater expenditure be incurred on

the maintenance of law and order and
iii) Expenditure in terms of subsidies and transfer payments should be increased.

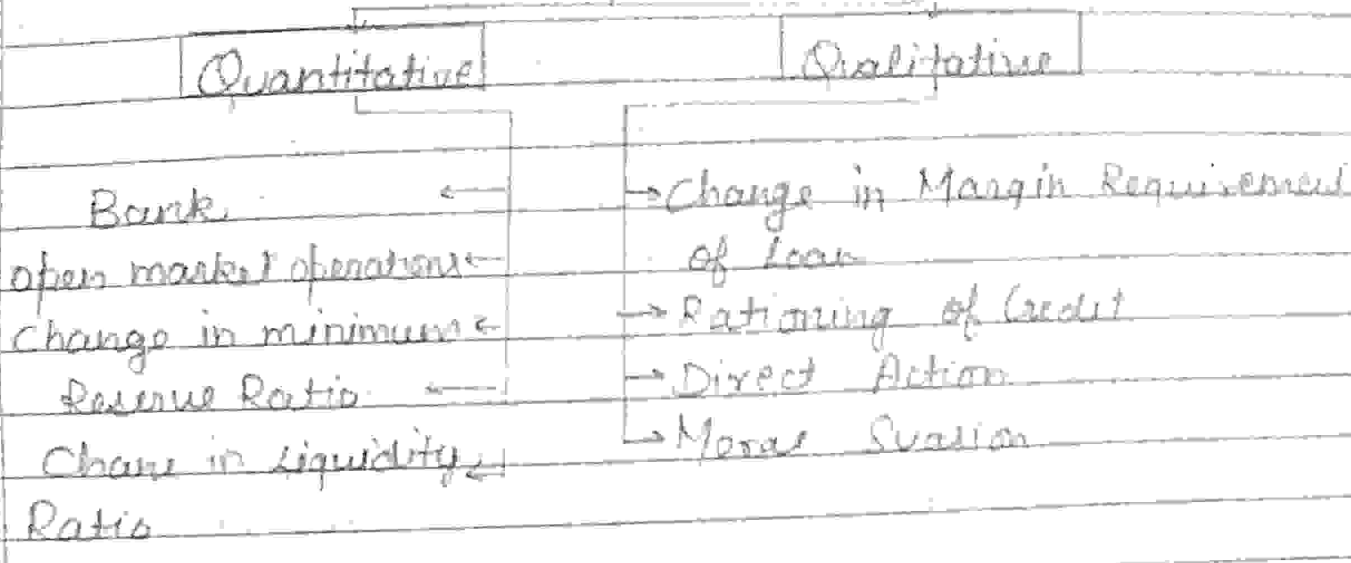
3. Increase in deficit financing ↓
Deficit financing is increased during times of deficient demand so that the overall level of purchasing power is increased in the economy and aggregate demand goes up.

4. Decrease in public debt or borrowing ↓
Public borrowing should be reduced so that people are left with greater purchasing power.

Monetary Policy ↓
Monetary policy is the policy by which Govt. of Country and the Central bank try to control

- The supply of money
- The availability of Credit
- The cost of credit, in the economy with a view to achieving economic stability.

Measurement of Monetary Policy



Quantitative measures / Instrumental or Quantitative Credit Control:

Quantitative instrument of monetary policy aim at controlling the overable flow of money supply / credit supply in the economy.

1. Bank Rate ↓

The Bank rate is the minimum rate at which the central bank of country is prepared to give loan or credit to commercial banks. The increase in bank rate increases the rate of interest and credit becomes expensive. Acc., the demand for credit is reduced and vice-versa.

2. Open Market operation ↴

It refers to the purchase and sale of securities in the open market by central bank. By selling the securities, the central bank reduces purchasing power in economy. flow of credit is reduced and by buying the securities, the central bank increases purchasing power in economy. It increases the flow of credit.

3. Change in min. reserve ratio ↴

Minimum Cash reserve ratio refers to minimum percentage of bank's total deposits which is required to be kept with the central bank. All the banks have to keep with central bank a certain percentage of their deposit in the form of minimum cash reserve ratio. when the cash flow or credit is to increase minimum cash reserve ratio is reduced and when the cash flow or credit is to be reduced, minimum cash reserve ratio is increased.

4. Change in liquidity ↴

Every bank is required to maintain a fixed part of its asset in the form of cash or

Other liquid asset called liquidity ratio. With a view to reducing the flow of credit in the market, the central bank increases this liquidity ratio. However, in case of expansion of credit, the liquidity ratio is reduced.

Qualitative Instrument / Measurement or Selective Credit Control :-

1. Change in Marginal Requirement of loan \downarrow

The margin requirement of loan refers to the difference b/w the current value of the securities offered for loans and the value of loan granted. In case, the flow of credit is to be restricted for certain specific business activities in the economy, the margin requirement of loan is raised for those activities. The margin requirement is lowered in case the expansion of credit is desired.

2. Rationing of credit \downarrow

Rationing of credit refers to fixation of credit quotas for different business activities. Rationing of credit is introduced when the flow of credit is to be reduced.

reduced particularly for speculative activities in economy. The Central bank fixes credit quota for different business activities.

3. Direct Action I

The Central bank may take direct action against those member banks who do not comply with its directives.

4. Moral Suasion II

Sometimes, the Central bank makes the member banks agree through moral pressure to follow its directive with a view to controlling the flow of credit.

Monetary policy and deficient demand or deflationary gap.

1. Bank rate is reduced to encourage borrowing.
2. Cash reserves ratio is reduced to increase the flow of credit.
3. The central bank buys securities in the open market so that additional purchasing power
4. Liquidity ratio is lowered to facilitate greater lending

5. Requirement of margin is reduced. Credit rationing, if already in operation is stopped.
6. Commercial banks are advised by the central bank to be liberal in lending.

Monetary policy and excess demand and inflationary gap.

1. Bank rate is increased to discourage borrowing.
2. The central bank starts selling securities in the open market so that some purchasing power is withdrawn from the economy.
3. Cash reserves ratio is raised with a view to decreasing the flow of credit.
4. Liquidity ratio is raised to decrease lending by the banks.
5. Requirement of margin of loan is raised for speculative business activities, so that borrowing become costlier and thus declines.
6. Rationing of credit is introduced. So that there is no excessive flow of credit.
7. Commercial banks are generally advised to be selected.

Difference b/w fiscal and monetary policy.

Basis	Fiscal Policy	Monetary policy
Meaning	It is concerned with the public revenue, public expenditure & govt. budget.	It is concerned with the supply availability and cost of money.
Components	The main components of fiscal policy are a) Taxes, public debts and deficit financing b) Public exp. on public works and public welfare programmes, defence and subsidies	The main components are bank rate, open market operations, change in cash reserve ratio, requirement of marginal loan etc
Nature	Fiscal policy has a direct bearing on all the sectors of economy.	Monetary policy has a direct bearing largely on selective producing sector of economy.

Ch-5.

Aggregate demand, Aggregate supply and Related Concept in macroeconomics.

Aggregate demand →

Aggregate demand means the sum total of demand for all goods and services in the economy as a whole during the period of an accounting year. In macroeconomics, AD is studied with reference to two frameworks.

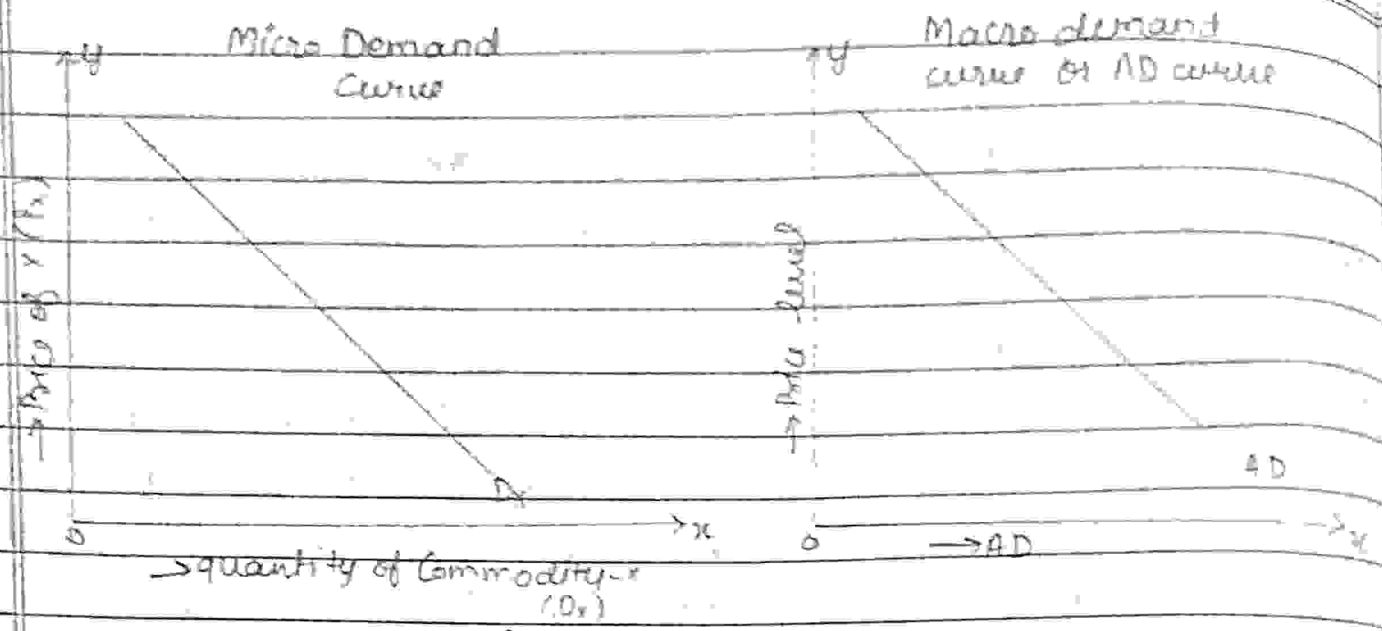
- i) General Framework
- ii) Keynesian Framework

1) AD in a General Framework: Downward sloping AD curve.

In general framework aggregate demand means demand for all goods and services that is linked with the general price level in the economy. It is the sum total of demand for goods and services of all the residents in a economy.

$$AD = \sum d$$

Here, AD = aggregate demand, $\sum d$ = aggregate demand for goods and services of a unit viz., household in economy



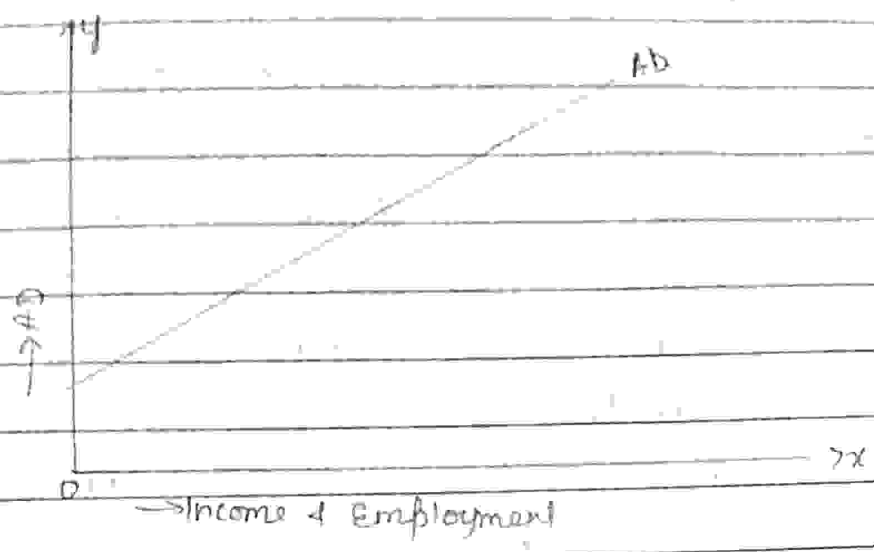
The difference is that while P_x refers to price of one commodity. Price-level refers to the general price which is a sort of average of the price of all goods and services in the economy. Also while D_x refers to the demand for a commodity. Only AD refers to demand for all the goods and services available in economy.

2) AD in the Keynesian Framework : upward sloping AD curve

AD with reference to Income level:

It refers to demand for all goods and services in the economy at different level of income. We all know that income and demand are positively related to each other. Thus, AD curves slopes upward showing a positive.

relationship b/w income and demand.



Measurement of AD.

'How much of goods and services people demand' is measured in terms of 'how much people spend' on the goods and services. Thus, AD in economy is measured in terms of total expenditure on the goods and services. If expenditure measures demand, total expenditure in the economy should measure total demand (AD) in economy. Thus, following are the components of AD.

$$AD = C + I \text{ (in closed economy)}$$

$$AD = C + I + G + X - M \text{ (in open economy with Govt)}$$

- where,
- C = Consumption expenditure of households,
 - I = Investment/capital formation (both fixed investment as well as inventory investment)
 - G = Govt. expenditure
 - X - M = Net exports.

Definition ↴

AD refers to the total expenditure that the households, firms and govt. of Country are ready to spend for the purchase of goods and services during a given period and at a given level of income. Total amount of goods and services demanded in an economy can be divided into two categories i) Consumer goods and Capital goods, like machines etc. The money spent on the purchase of Consumer goods is called Consumption expenditure and on Capital goods is called investment expenditure respectively.

$$AD = C + I$$

Behaviour of AD and AD function

1. There is always some minimum level of demand even when income is zero ↴

Because for survival, we must eat something and so demand for something even when we have to borrow from others or spend our past saving.

2. As income rises, demand also rises but after a particular level of income is reached people start saving a part of

their income. So that expenditure tends to lag behind the rising income or the rate at which income increases expenditure does not increase at the same rate but less than it.

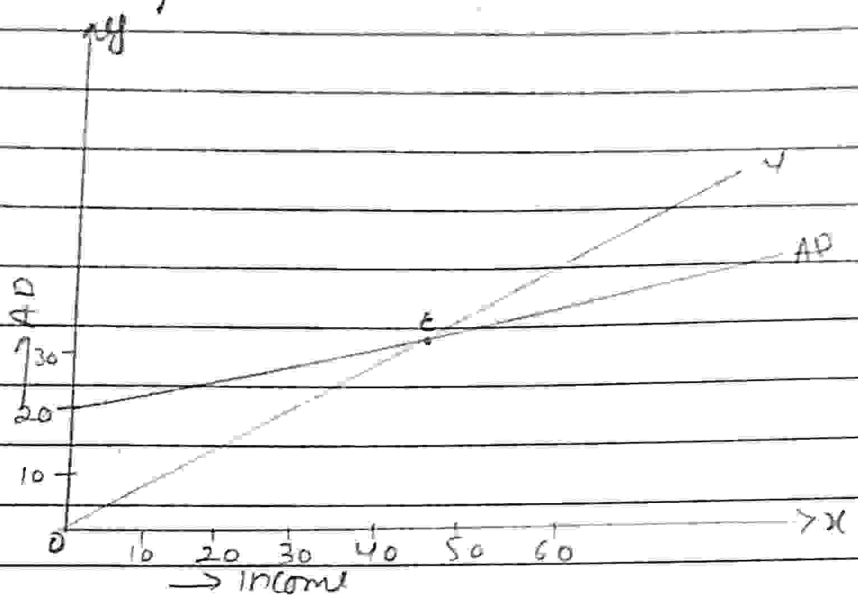
Aggregate Demand schedule and curve

Income (₹ crore)	A.D (₹ crore)
0	20
10	25
20	30
30	35
40	40
50	45
60	50

Explanation

- AD is ₹ 20 crore even when income is zero. This corresponds to the minimum level of demand corresponding to the minimum level of consumption.
- AD rises with every rise in the level of income.
- After a certain level of income is reached (₹ 40 crores) AD lags behind the level of income. AD remains only ₹ 45 crore while

income becomes ₹ 50 crore. Likewise, AD rises only to ₹ 50 crore while income shoots upto ₹ 60 crores.



On this diagram, Income is represented on X-axis and Aggregate demand on Y-axis. If AD curve to increase at the same rate as Y on if AD is always equals to Y. AD curve would have merged with Y curve but it is never liked that. AD starts from 20 on Y-axis indicating minimum level of demand even when income is zero.

Determinants or Components of AD.

Four main determinants of AD are as Under

- Household consumption expenditure (C)
- Govt. consumption expenditure (G)

Investment (I)

Net exports are the diff. b/w export and Imports (X-M).

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

Here, AD = aggregate demand, C = Consumption exp.,
G = Govt. expenditure, I = Investment,
X-M = Net exports.

1. Household Consumption expenditure ↓

The amount of money that people spend out of national income to satisfy directly their demand for goods and services, is called household expenditure. Consumption expenditure mostly depends upon income. Relation b/w Consumption and Income is called Consumption function Thus.

$$C = F(Y)$$

It will read as :- Consumption is a function of Income. Consumption expenditure increases as income increases but increase in consumption expenditure is always less than increase in income.

2. Govt. Consumption expenditure ↓

Expenditure on goods

and services by the govt. is another element of AD. Govt. demands goods and services to meet various purpose viz. works of public interest, roads, schools, health services etc. There is no definite principle to determine govt. expenditure ~~for~~ several factor influence it.

3. Investment ↓

Investment refers to that exp which is incurred to increase Capital goods like, machines, factories, houses etc. In other words, investment means increase in the stock of Capital goods. In private sector, investment is undertaken to earn profit.

4. Net Exports ↓

Fourth element of AD is net export, it is measured by the diff. b/w total exports and total imports of country.

$$\boxed{\text{Net Exports} = \text{Exports} - \text{Imports}}$$

When net exports are positive i.e., when exports exceed imports then AD increases. On the other hand, when net exports are negative, i.e., when exports are less than imports then AD decreases.

Aggregate Supply ↴

Aggregate or total supply refers to the monetary value of total goods and services produced during the period of one year in an economy. It is also called national product or national income. If aggregate supply means added it also means income generated, because value added is equal to income generated. (One part of the income is consumed and the other saved. Thus, consumption and saving are the two components of aggregate supply). In other words:

$$AS = C + S$$

Aggregate supply = Consumption + Saving.

Behaviour of AS or AS function.

Flow of goods and services in an economy can be increased by two factors.

- i) additional utilisation of the existing resources
- ii) Technological improvement.

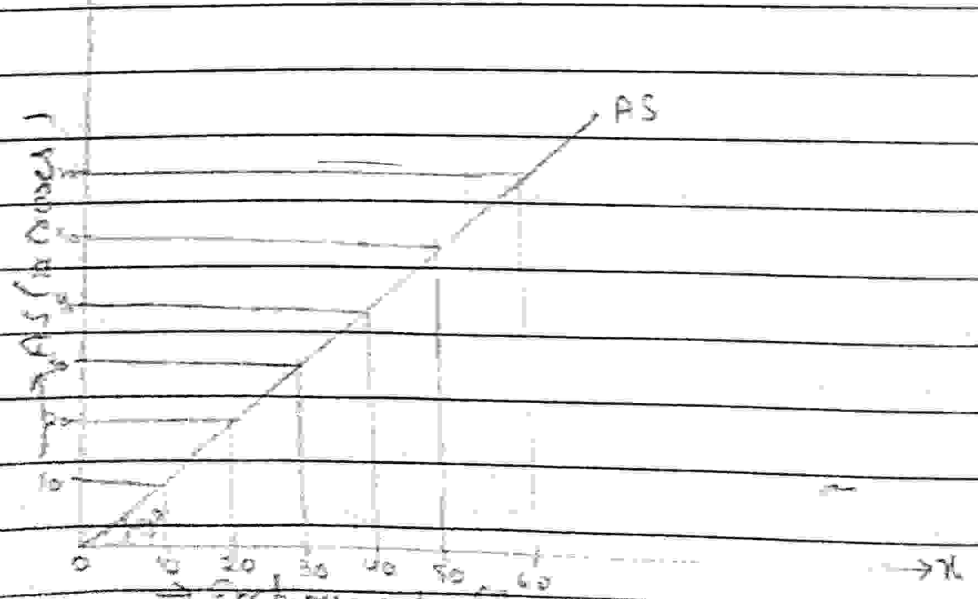
Keynesian theory of income and employment is a short period analysis. Keynes assumes technology to remain constant during the short period. Accordingly, output can be

increased only by increasing the utilisation of existing resources mainly labour, so that AS increases proportionate to the increase in employment.

Aggregate supply schedule and curve

AS schedule refers to AS corresponding to different levels of employment in the economy. AS and employment are positively related.

Level of employment (1000 of workers employed)	AS (in crores) = (flow of goods & services = flow of income = Consumption + Saving)
0	0
10	10
20	20
30	30
40	40
50	50
60	60

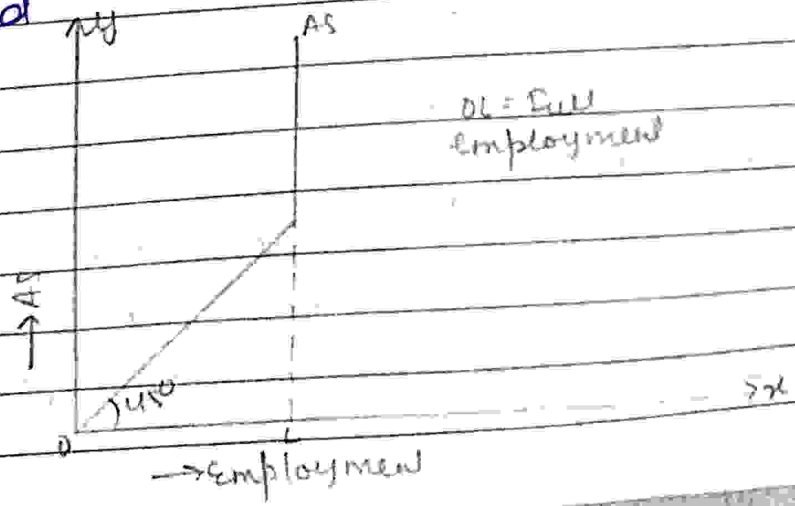


Explanation :-

This table shows that AS increases in direct proportion to the increase in employment. It is to be noted that AS increases only till the full employment level is not achieved. Figure shows that the flow of goods and services in an economy or AS increases/decreases proportionate to increase/decrease in employment.

AS function

According to Keynes, AS function can be shown as in this figure. In this figure, upto OL, AS curve moves up showing a 'one-to-one' relationship between AS and employment, as usual. But beyond OL, AS become a vertical straight line, showing that AS (or flow of goods & services) no longer increase. Yes, because L is a point of full employment in economy. It is a point when entire workforce is fully employed.

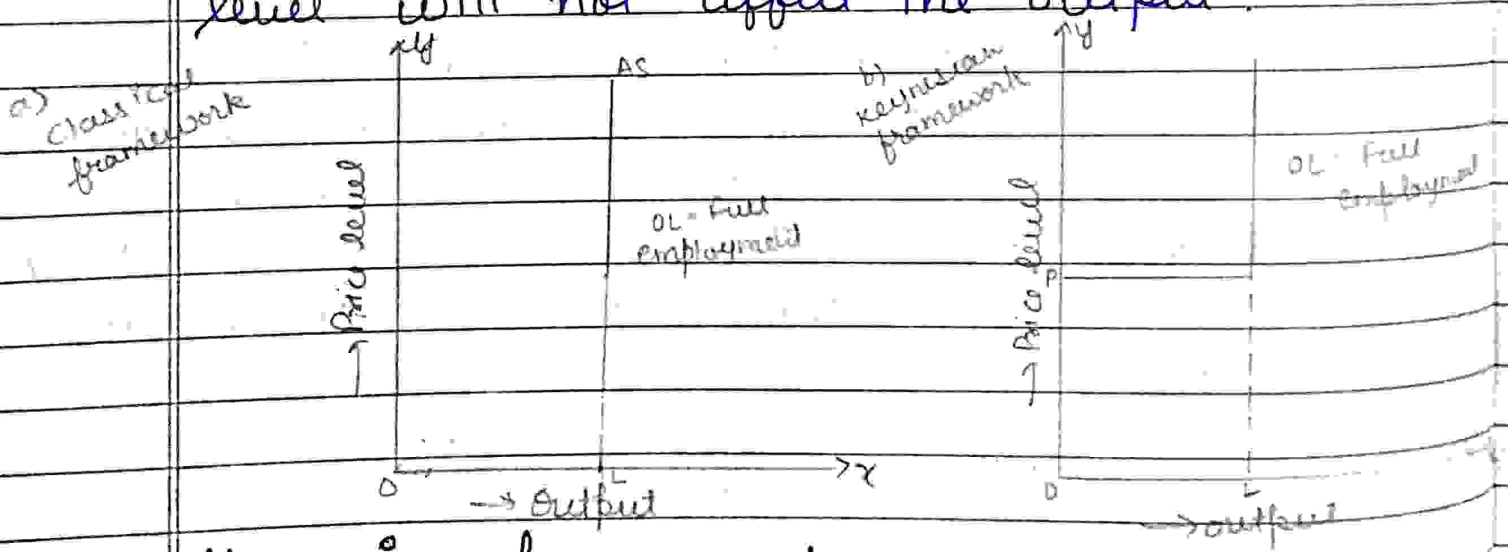


As in relation to price level.

As in case of AD, in economy. AS is also related to price level. There are two frameworks viz i) classical framework ii) Keynesian framework.

i) classical framework →

According to classical economist, full employment is a general feature of a free economy. If full employment is taken for granted AS (referring to total production) must remain constant, no matter what the price level is. AS is a supply function showing constant output. It shows that a change in price level will not affect the output.



ii) Keynesian framework →

According to Keynes, full employment is not a general feature of free economy.

Unemployment is possibility and it happened during the depression. However, once full employment level is reached, any attempt to increase output would only mean increase in the price level because all resources are fully employed. Output can't be increased by employing any unemployment resources, as same are full employed.

Behaviour of Consumption (C) or Consumption function.

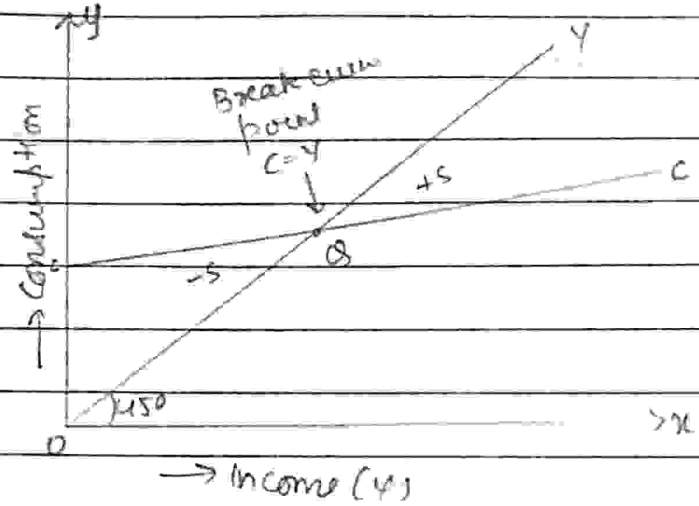
Consumption refers to total amount spent on consumption at any given time in an economy. The amount of money spent by the people on purchase of goods and services in order to satisfy their wants directly, is called Consumption expenditure.

Consumption expenditure mainly depends on income. Relation b/w consumption and income is called Consumption function. i.e.,

$$C = F(Y)$$

[It will be read, as Consumption (C) is a function (f) of Income (Y)]

Consumption expenditure increases with increase in income. However, increase in consumption is less than increase in income. In other words, consumption does not increase at the same rate as the income does.



Propensity to Consume

Propensity to Consume is very widely used terms. In Keynesian theory of income and employment propensity to consume is the ratio of consumption to income at different levels of income. It shows different levels of consumption at different level of income in economy.

Propensity to Consume

<p>Average Propensity to Consume</p> $APC = \frac{C}{Y}$	<p>Marginal propensity to Consume</p> $MPC = \frac{\Delta C}{\Delta Y}$
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1. Average propensity to Consume ↓

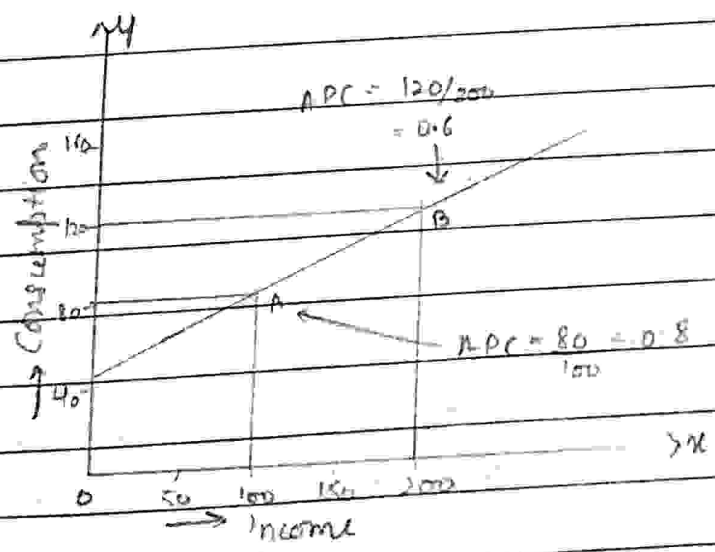
Average propensity to consume is the ratio b/w total consumption (C) and total income (Y). It shows what part of their income, people will spend on consumption.

$$\text{Average propensity to Consume} = \frac{\text{Consumption}}{\text{Income}}$$

or

$$APC = \frac{C}{Y}$$

Income	Consumption	$APC = \frac{C}{Y}$
100	80	$\frac{80}{100} = 0.8$
200	120	$\frac{120}{200} = 0.6$



2. Marginal propensity to Consume ↓

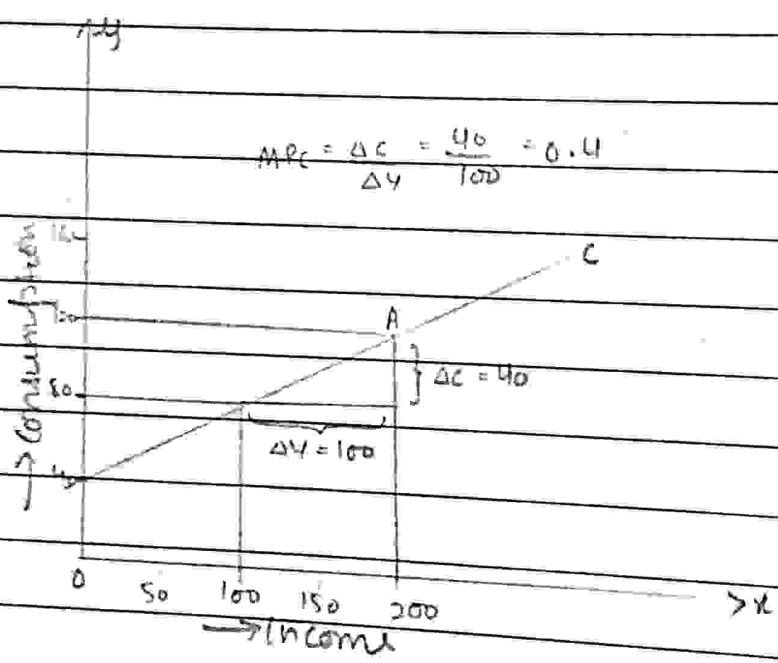
Marginal propensity to consume refers to ratio b/w change in consumption

Consumption (ΔC) and change in Income

Marginal Propensity to Consume = $\frac{\text{Change in Consumption}}{\text{Change in Income}}$

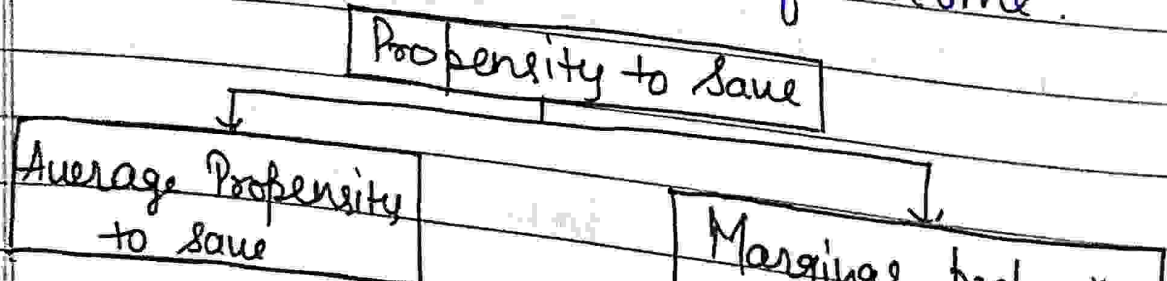
$$MPC = \frac{\Delta C}{\Delta Y}$$

Income	ΔY	Consumption	ΔC	MPC
100	-	80	-	-
200	100	120	40	0.4
300	100	150	30	0.3



Propensity to Save \downarrow

Propensity to save is the ratio of saving to income at different level of income.



1. Average propensity to save ↓

Average propensity to save is the ratio b/w total saving (S) and total income (Y) at a given level of income and employment in economy.

$$\text{Average propensity to save} = \frac{\text{Saving}}{\text{Income}}$$

or

$$\text{APS} = \frac{S}{Y}$$

2. Marginal propensity to save ↓

Ratio b/w Change in saving as a result of change in income is called marginal propensity to save.

$$\text{Marginal propensity to save} = \frac{\text{Change in Saving}}{\text{Change in Income}}$$

or

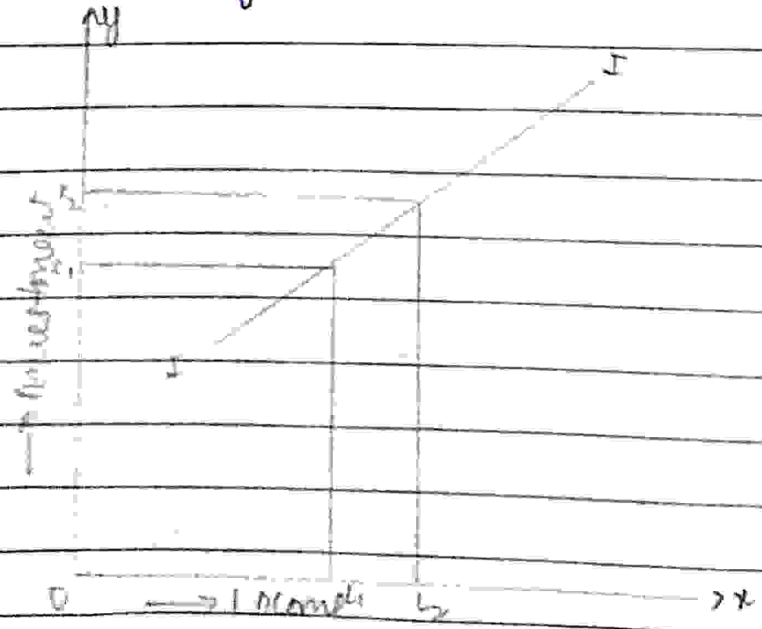
$$\text{MPS} = \frac{\Delta S}{\Delta Y}$$

Behaviour of Investment and Investment function.

Investment refers to that expenditure which adds to the stock of capital goods like machines, factory buildings, houses etc. It adds to the producers stock of Capital and therefore also known as Capital formation.

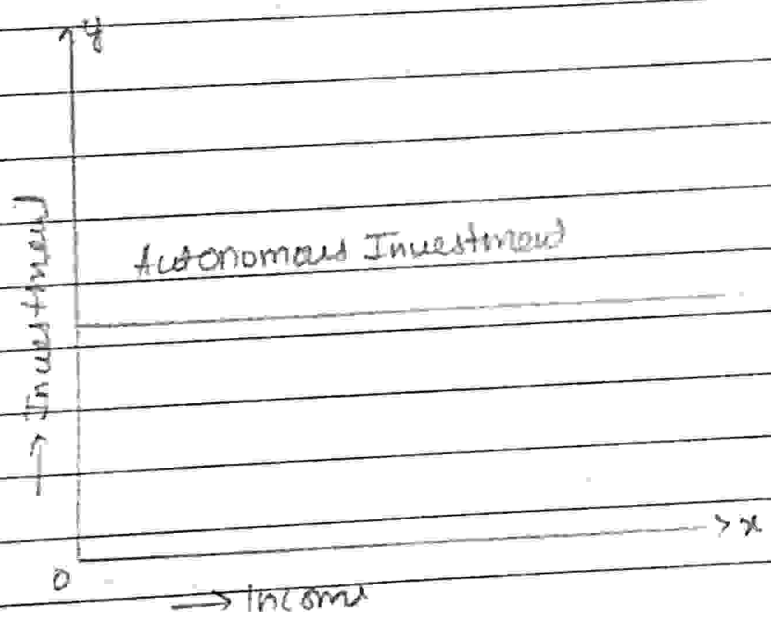
1. Induced Investment \downarrow

It is that Investment which depends on the quantum of income and profit in an economy. At higher level of income, consumption expenditure goes up. As a result of increase in consumption expenditure, there is increase in the expected profitability of the producers. Accordingly they are induced to invest more. There exists positive relationship b/w induced investment and level of income in an economy.



2 Autonomous Investment ↴

It refers to that investment which is independent of change in the level of income. It is not influenced by the expected rate of profitability. In fact autonomous investment refers to that investment which is undertaken by the govt with a view to promotion the level of aggregate demand in the economy.



Two Important determinants of Investment.

1 Marginal efficiency of Capital ↴

Marginal efficiency of Capital is simply 'expected profitability' of additional investment. Or it may be defined as 'expected rate' of return of an additional unit of Capital goods.

over its cost. The marginal efficiency of Capital depends upon i) the prospective Yield ii) Supply price of Capital goods.

1. Prospective Yield ↴

The prospective yield of an asset is the aggregate net return expected from it during its whole life. In order to determine prospective yield annual return from the Capital asset is estimated. It refers to the aggregate of net annual returns expected from a Capital asset over its lifetime. Prospective Yield can be expressed as follow:

$$PY = Q_1 + Q_2 + Q_3 + \dots + Q_n$$

2. Supply price ↴

The second factor influencing the marginal efficiency of Capital is supply price. The supply price of Capital assets is the cost of producing a new asset of that kind. It is also called Replacement Cost.

3. Rate of Interest ↴

The cost of investing the money is called interest. Because if money is borrowed from

others to invest, interest will have to be paid on it. Thus, every entrepreneur at the time of making any new investment compares the marginal efficiency of capital i.e., rate of profit with the rate of interest.

3. Full employment ↴

In macroeconomics, 'full employment' means a situation in which at a given level of real wage, demand for labour is equal to its available supply. Thus, the term full employment is used to signify a situation in which ordinarily all those people who are willing to work at the prevailing wage rate get work.

Two types of unemployment associated with full employment.

1. Frictional Unemployment ↴

It is the unemployment associated with the changing of jobs in dynamic economy. On account of imperfection of labour market, workers may be rendered unemployed temporarily. This type of temporary unemployment is called frictional unemployment. It arises due to immobility

of labour, shortage of power etc.

Q. Structural unemployment :-

It is associated with the structural changes in economy. It arises when other factors of production like capital, land etc. are in shortage or when labours are trained in the old and decaying industry and are ill-equipped for new emerging industries and when there is change in the production techniques etc.

Expost Saving and Investment

It refers to realised saving in the economy. Likewise, it refers to realised investment in economy. Expost saving and expost investment have identical definition. Excess of income flow over consumption flow in economy during the period of one year.

Ex-ante Saving and Investment.

Ex-ante or planned or desired saving is that saving, what the saver plan to save at different levels of income in the economy. Likewise ex-ante or planned or desired investment is that investment, what the investors

plan to invest at different level of income in economy. Since savers and investors in an economy are different set of person and guided by a diff. set of factors.

Voluntary and Non-Voluntary unemployment

1. Voluntary Unemployment ↓
It refers to a situation when a person is unemployed.