SYBCOM

Business Economics Department

Notes for Private Circulation

By

Prof. Manjiri .M.Gondhalekar

Topics covered

Demand for Money

Supply of Money

Inflation

Demand for Money

Money is demanded because it is a means of payments. It acts as medium of exchange and it can store the value.

There are three approaches to the demand for money

- Classical Approach
- Neo Classical Approach
- Keynes' Approach

Classical Approach: The classical economists like David Hume, J. S. Mill, Irving Fishers, etc. emphasized the transactions demand for money in terms of velocity of circulation of money. According to them, money is a medium of exchange; people demand money for transaction purposes. Money facilitates smooth transactions of goods and services in the economy.

Fisher's Approach: Fisher's transactions approach to demand for money emphasises the medium of exchange function of money. All transactions require payment in terms of money Thus, the total value of all transaction is equal to PT. Further, the value of money used in transactions is equal to the quantity of money supply (M) multiplied by its velocity of circulation (V).

$$\boxed{MV = PT}$$

M = quantity of money in circulation.
V= Velocity of circulation of money.
P= Average price level.
T= Total volume of transactions.

The equation PT represents demand for money and MV represents Supply of Money. At equilibrium supply of money equals the demand for money.

Neo Classical Approach: The neo-classical theory of demand for money was put forward by Cambridge economists, Marshall and Pigou. According to them people wish to hold the value of certain proportion (K) of national output in the form of money.

In short, according to them, the demand for money is to hold money in the form of cash balances to pay for things at any given period.

$$\boxed{Md = KPy}$$

Md = the demand for money.

K = Proportion of national income that people want to hold in form of cash balances

Py = Nominal national income.

The demand for money is the constant proportion (K) of y. The change in demand is in direct proportion to the changes in (y), the value of that proportion is equal to K. Whenever there is a change in the price level or in the real income, the demand for money would also change in equal proportion.

Keynes' Approach for demand for money

J. M. Keynes in his General Theory of Employment, Interest and Money has put forward a theory of demand for money.

According to him, the demand for money means to hold money in the form of cash balances. He emphasises the store of value function of money and medium of exchange function of money. The demand for money arises because it is a perfectly liquid asset. It can be easily converted into cash or any other form of wealth at any time. Keynes calls this desire to hold cash balances as liquidity preferences.

According to him, there are three motives for holding cash balances.

The transaction motive

The precautionary motive

The speculative motive

The transaction motive –

The transactions demand for money relates to the amount of money held by the individuals and business firms in order to meet day-to-day transactions. People receive their income daily, monthly, quarterly or even yearly, but the expenditure are more or less regular. In other words, when income is received at long intervals of time, people should keep a certain amount to enable them to carry out their transactions.

The transactions demand for money is income elastic. Thus, there is a direct relation between the size of income and the demand for cash balances.

$$\boxed{Lt = f(y)}$$

Lt = The transactions demand for money.

Y= The level of national income.

Transaction demand for money is determined by

1 Level of income: Higher the level of income more money is held in the form of liquid cash.

2 Time interval: Longer the time interval for receiving income higher liquid cash is held

3 Price Level: When price level rises more liquid cash is held for transaction purpose.

4 Volume of employment: When volume of employment and output rises transaction demand for money rises

The Precautionary Motive

The precautionary demand for money refers to the amount of money held by the community for meeting unforeseen contingencies. The individuals hold cash balances to provide for the danger of unemployment, sickness, accidents, old age, etc.

The precautionary demand for money depends upon the level of income. It is income elastic. The amount of money kept for this motive changes directly with income. Higher the income higher is the demand for money for precaution.

In symbolic terms,

$$\boxed{Lp = f(y)}$$

Lp = The precautionary demand for money.

y = The level of national income.

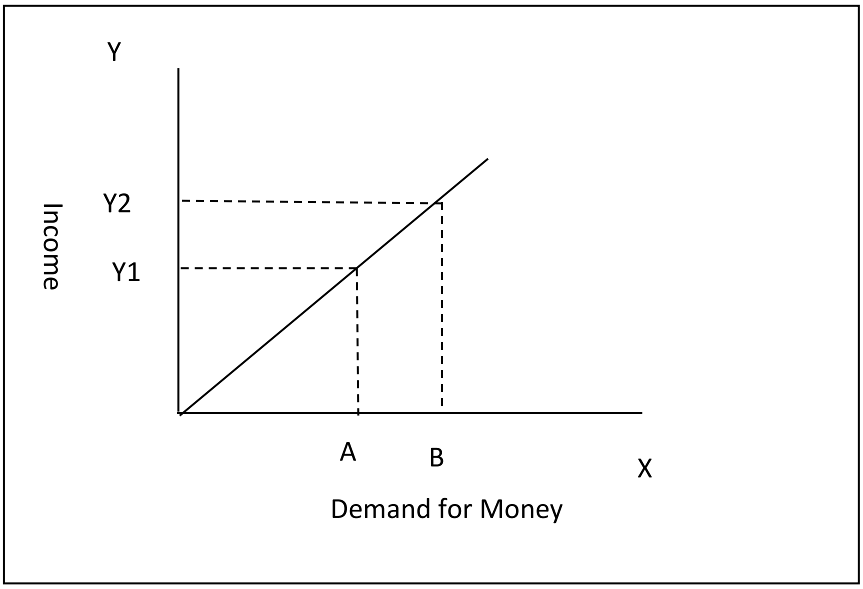
So the transactions and the precautionary motives are income elastic. The combined sum of money balances, held under the transactions and precautionary motives are referred as 'active balances' by Keynes symbolically.

$$\boxed{L1 = Lt + Lp}$$

Lt = f (y) and Lp = f (y) so,

L1 = f (y)

It means the demand for active balances is a function of income.



It can be seen from the above diagram, when income was y1, the demand for money was OA. And at higher income level Oy2 it becomes OB. Thus, there is a proportionate relationship between income and demand for active balances.

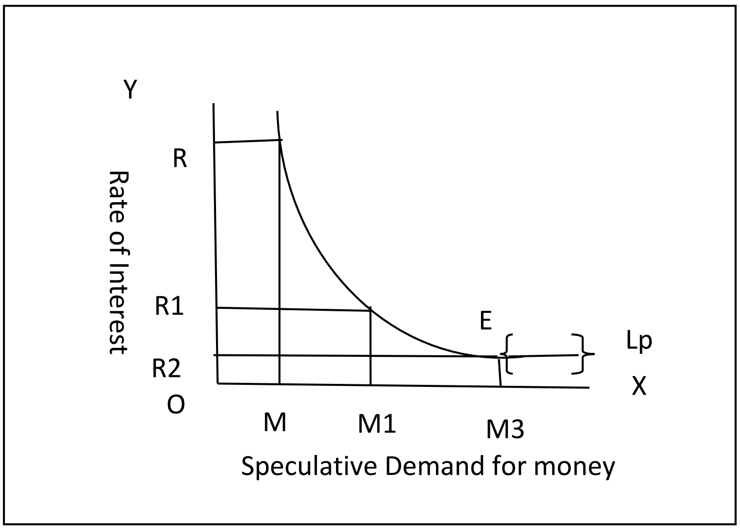
The Speculative Motive – Keynes pointed out that some section of People desire to hold idle cash balances for speculative purposes. The speculative motive is related to store of value function of money. Money is demanded to take advantage of market movements regarding the future changes in the rate of interest. So under speculative motive, cash balances are held for income earning purposes. The amount of money held under this motive depends upon the rate of interest and the price of bonds. Speculative demand for money is interest elastic.

The bond prices and the rate of interest are inversely related to each other. As the rate of interest falls, the price of bond rises and vice a versa. If people expect the rate of interest to rise and prices of bonds to fall they will sell bonds to avoid capital losses. In short, they will hold money. On the other hand, if bond prices are expected to rise and rate of interest to fall, they will buy bonds and reduce their expenditure on other two motives. In short, people make money by buying bonds when they are cheaper and sell them when they are dearer. Thus, money held under this motive is interest elastic. At higher rate of interest less money is held for speculative purpose.

$$\boxed{L2 = f\,(i)}$$

L2 = The speculative demand for money.

i= The current rate of interest.



The LP curve shows the liquidity preference under the speculative

motive at different rate of interest. It can be seen that at the high rate of interest OR only a small amount of money OM is held for speculative purposes. But when the rate of interest falls to OR1, a greater amount OM1 is held for speculative purposes. When there is further fall in the rate of interest to OR2, speculative demand for money increases to OM2. Beyond point E the LP curve becomes flat or perfectly elastic.Total demand for money is L= L1+L2

Total demand for money depends on two variables 1) rate of interest 2) Level of income.

Liquidity Trap –

The liquidity trap is a situation in which the people are ready to hold whatever stock of money at a particular low rate of interest. According to Keynes at very lower rate of interest speculative demand for money becomes perfectly elastic. According to him 2% rate of interest is the lowest rate of interest and market rate of interest would not decline below that rate of interest. At this very low rate of interest, people prefer cash and they are not interested in investing in bonds or securities. They expect prices of bonds and securities to fall in future. Such expectation is so widespread that every one prefers to hold liquid cash. In such situation the liquidity preference curve becomes parallel to x axis as indicated in the diagram.

In the diagram, L2 is liquidity preference curve for speculative motive. Liquidity preference is measured on x axis and rate of interest on y axis. When rate of interest is or'' very less quantity of money that is om is held in form of cash. At or' level of rate of interest people held om' quantity of money for speculation. Once the rate of interest falls to 'or' there is infinite demand for idle cash balances. At this point the liquidity preference curve becomes completely parallel to x axis .The demand for money for speculative motive is perfectly elastic.

In this situation there is a lot of pessimism in the market and in spite of efforts taken by the government, to increase money supply in the economy, people hold idle liquid cash. This situation is termed as 'liquidity trap.' It is a situation when large increase in stock of money is held in idle cash balances.

Supply of money

Supply refers to the amount of money which is in circulation in an economy at any given time. In short, money supply means the total stock of money which is held by the public.

Money supply is a stock as well as flow concept. It is a stock of money when held by the public at a particular point of time. It is flow of money when it is circulated several times during a given period of time passing from one hand to another. The average number of times a unit of money circulating from one hand to another during a given year is called as 'Velocity of Circulation of Money'. The flow of money is measured by multiplying a given stock of money by its velocity of circulation.

$$\boxed{MS \times V}$$

Constituents of Money Supply –

There are different views regarding the composition of money supply. These views can be classified into –

1. Traditional Approach.
2. Modern Approach.
3. RBI's Approach.

1Traditional Approach or Narrow Money–

Money is a means of payment or a medium of exchange. Therefore, according to the traditional approach the stock of money should include such items that can be spent immediately. In short, this approach considers money only as a medium of exchange. The components of money supply can comprise only of those things which are readily accepted as a medium of exchange.

Currency (coins and notes) and demand deposits with the bank are the liquid form of money which are readily accepted by everyone as a medium of exchange. The traditional money is sometimes called 'Narrow Money'.

The traditional measure of money supply can be expressed as:-

$$\boxed{M1 = C + DD}$$

M1= Traditional measure or narrow money.

C = Currency (Coins and Notes).

DD = Demand Deposits.

2 Modern Approach or Broad Money:-

According to the modern approach money supply should include money as well as near money. Economists like Milton Friedman, Gurley John G., Shaw Edwards (Gurley – Shaw) and Radcliff committee are closely associated with the modern approach.

Milton Friedman's Approach

According to Milton Friedman the money supply concept is wider and includes savings and time deposits with commercial banks because time deposits can be made available for spending purposes with limited cost.

Gurley - Shaw –

This approach gives a wider concept of money supply. It considers liabilities of Non-Banking Financial Intermediaries (NBFI's) like UTI, Post Office Savings Banks, etc. This means that various grades of near money are included as components of money supply.

Radcliff Committee –

This approach considers money supply as a part of a wider structure of liquidity that is available in the economy. Therefore supply of money composed of currency money, all bank deposits, deposits with other institutions, near money assets and the borrowing facilities available in the economy.

In short modern approach called as a broad money concept. This approach comprises M1 and other liquid assets or near money.

RBI's Approach:-

The Reserve Bank of India, the Central Bank of the country has introduced four concepts of money supply in India. These measures are expressed as:-

1. Concept of M1 or Narrow Money –

M1 represents a narrow measure of money supply. It is a traditional concept of supply of money with the public. It emphasizes the medium of exchange function of money.

$$\boxed{M1 = C + DD + OD}$$

C = Currency notes and coins.

DD = Demand deposits with all commercial and co-operative banks.

OD = other deposits with RBI.

2. Concept of M2 –

This concept of money supply is wider than M1. It includes M1 and saving deposits with the post office savings banks.

M2 = M1 + Post office savings bank deposits

3. Concept of M3 or Broad Money –

M3 is known as broad money concept. It is based on the Modern approach to the concept of money supply.

M3 = M1 + Time Deposits will all commercial and co-operative

4. Concept of M4 –

The concept of M4 is the broadest measure of money stock. M4 covers all components of M3 and total post office deposits.

M4 = M3 + Total post office deposits

Determinants of Money Supply:

Cash in circulation and demand deposits are the basic components of money supply. According to, Chandler the major determinants of quantity of money in an economy are:-

1 Monetary Base –The term monetary base refers to the supply of funds available for use either as cash or as the central bank's reserves. In short, it refers to total resources with the central bank. The monetary base is composed of –

i) Monetary gold stock-Reserve assets of the central bank (such as government securities, bond, etc.)
ii)The amount of central bank credit outstanding.

2 Community's choice –

The community's choice refers to the relative amounts of cash and demand deposits which it wishes to hold.

If the community gives preference to payment by cheques then larger money supply can be maintained with a given monetary base.

If the people prefer to keep liquid cash and make payments by cash then there will be hand-to-hand circulation of money. As a result, the supply of money will not increase with a given monetary base.

3 Extent of Monetization –

Monetisation means the use of money in the exchange of goods and services. Greater the extent of monetisation, greater will be the expansion of money supply.

4Cash Reserve Ratio (CRR) –

The CRR refers to the ratio of a bank's cash holdings to its total deposit liabilities. It is controlled by Central Bank. A smaller cash-reserve ratio enables greater expansion in the creation of credit by the banks and vice-versa.

5Fiscal policy or budgetary policy –

Money supply is influenced by the Government through its budgetary policy. Direct and indirect taxes reduce the disposable income and thereby the supply of money. Public borrowing influences money supply.

Growth of public expenditure has also increased money supply. Deficit financing also increases more supply.

Velocity of Circulation of Money:–

The basic function of money is a medium of exchange. A single unit of money is spent several times in course of transaction during a certain period of time. In short, a unit of money passes or circulates from one person to another during a given period. This movement of a unit of money is called the Velocity of Circulation of Money.

The average number of times a unit of money changes hands in the course of a given period is called the Velocity of Circulation of Money.

$$\boxed{MS = M \times V}$$

MS = Money Supply.

M = Total quantity of money.

V = Velocity of circulation of money.

Factors affecting Velocity of Circulation of Money:-

1 Spending habits –

Spending habits of the individuals influence the velocity of circulation.

2Time interval of income receipt –
Income may be received by people daily or weekly or monthly or quarterly. If income is paid at longer intervals then velocity of money is less.

3Income Distribution –
The distribution of income also influences the velocity of money. It will be lower in case of the rich people (because lower MPC) and it will be higher in case of poor people.

4 Liquidity Preferences –
Liquidity preference means desire of people to hold cash. If liquidity preferences are higher, velocity is lower.

Inflation

Inflation is a situation of continues increase in the general price level. The increase in general price level is very rapid. As price level rises, the value of money falls.

Different eminent economists have defined situation of inflation in a different manner.

Ackley defines it as “a persistent and appreciable rise in the general price level.”

According to Pigou, inflation occurs “when money income is expanding more than in proportion to income earning activity.”

Crowther defines “inflation is a state in which the value of money is falling i.e. prices rising.”

According to Prof. Samuelson, “Inflation occurs when the general level of prices and costs is rising.”

In short inflation is a situation when there is continuous rise in general prices, costs and fall in the value of money.

Inflation Rate:

Prof. Rowan has given following formula to measure the % rate of inflation.

$$P(t) = \frac{\Delta p(t)}{p(t-1)} \text{x}100$$

Where $\Delta p$is change in general price level, It is measured as price level 'P' at time period't' minus Price level p in earlier time period (p(t-1))

There are five different measures of inflation, the wholesale price index (WPI) and other measures of consumer price index.

The inflation rate can be calculated as below—

Year	WPI	$P(t) = \frac{\Delta p(t)}{p(t-1)}$ x100	Inflation Rate
1990-91	257	------	-------
1991-92	281	$\frac{281-257}{257}$x100=$\frac{2400}{257}$	9.3
1992-93	289	$\frac{289-281}{281}$x100= $\frac{800}{281}$	2.9

Approaches to the inflation

There are two important approaches to the inflation,

1 Inflation is purely monetary phenomenon; According to monetary economists inflation is purely monetary phenomenon. Inflation occurs if there is too much increase in money supply. Milton Friedman strongly advocated that inflation is purely monetary in nature.

This view came from Fisher's famous equation p=$\frac{MV}{T}$ Where p is general price level, V- is velocity of circulation of money, M- is quantity of money and t is number of trade transactions. If V and T are constant, general price level rises directly in proportion with change in supply of money.

2 Inflation is post full employment phenomenon;

According to a group of economists inflation is a post full employment phenomenon, especially Keynes and Pigou strongly advocated that inflation occurs because there is an increase in demand but it is not possible to bring corresponding change the supply of goods. Supply of goods cannot be increased because there is full employment in the economy. Before full employment, increase in demand can be fulfilled by increase in supply of goods therefore prices do not rise.

Types of Inflation:

According to the causes- There are four different types

i) Creeping inflation: It is mild kind of inflation and occurs if price level increases 3%to 4%annually.

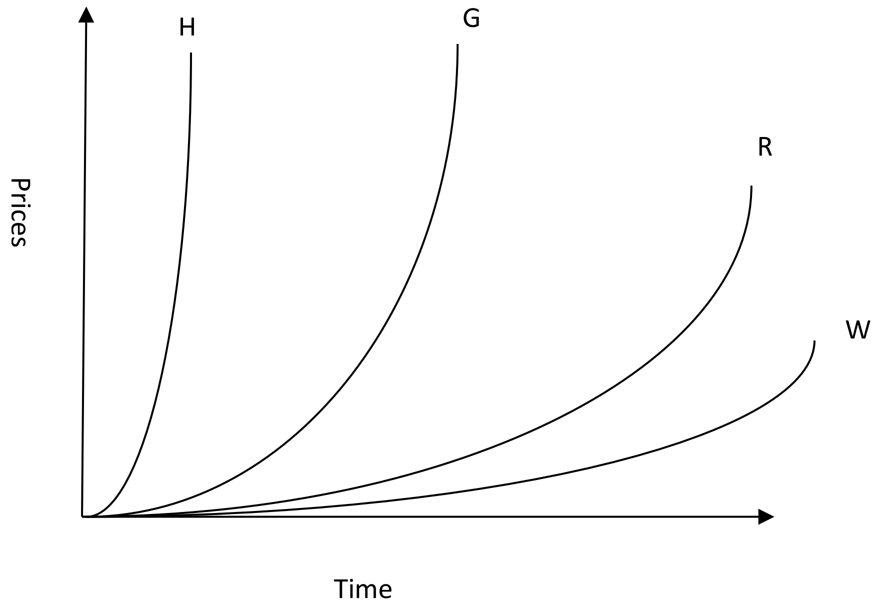
ii) Walking inflation: it is moderate kind of inflation and occurs if general price level increases at the rate of 10% annually.

iii) Running inflation: When price level increases beyond 10% annually and are in the range of 10% to 20% per annum it is running inflation.

iv)Galloping inflation: According to Samuelson, when prices are rising 100%per annum it is called galloping inflation.

v) Hyper inflation: Hyperinflation occurs when prices rise at every moment. It is very difficult to measure the magnitude of hyperinflation.

Creeping and walking inflation are mild types and 3% to 4% rise in prices is supposed to be essential to stimulate investment and for development of the economy.



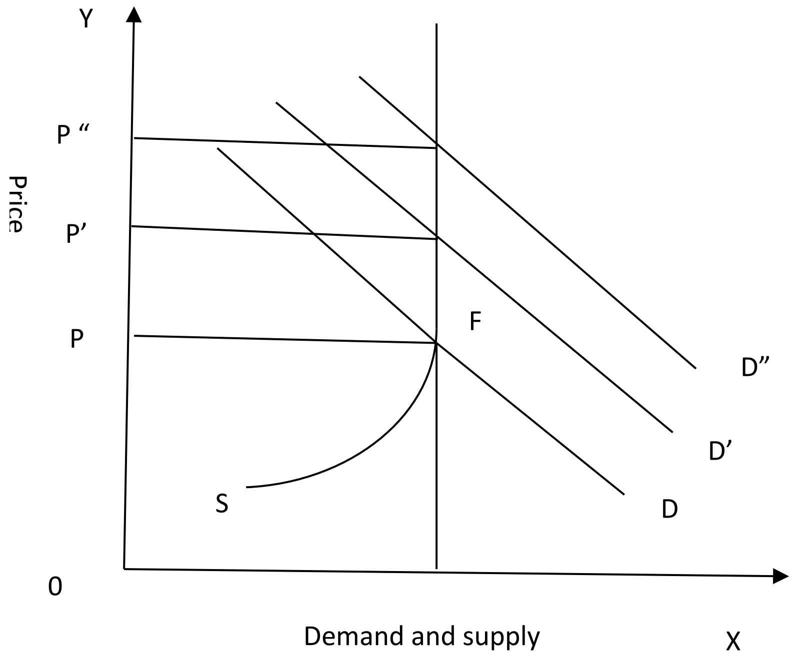
The curve w denotes walking inflation. Curve R indicates running inflation. Curves G and H denote galloping and hyper inflation respectively.

Demand Pull and cost push inflation:

There are two important causes of inflation i) Demand pull inflation and 2) Cost push inflation.

Demand pull Inflation: Demand pull inflation occurs when prices rise in response to the increase in demand. When demand is excess and above the existing supply of goods general price level rises.

According to the economists who believe that inflation occurs due to demand pull reasons explain that demand pull inflation occurs due to increase in quantity of money. Economy is at its full employment level therefore with increase in quantity of money, rate of interest falls and investment increases. The demand for factors of production increases and their income increases. As a result the aggregate consumption expenditure increases which leads to increases the aggregate demand. As economy has already reached to the full employment equilibrium, it becomes difficult to increase the supply of goods which leads to increase in the general price level.



In the diagram SS is supply curve. It slopes upwards till point 'f'. Point 'f' indicates full employment level. Beyond point 'f' supply curve becomes vertical straight line. D, D' and D" are aggregate demand curves indicating increase in demand.

According to demand pull theory before full employment level, prices do not increase much with increase in demand. But as indicated in the diagram, when demand changes from D to D' price level changes form op to op' with further increase in demand it changes from op' to op".

Price level changes because supply cannot be adjusted with increase in demand as economy has already reached to full employment level.

Thus demand pull inflation is a situation where total monetary demand exceeds total supply of real goods and services therefore prices are pulled upwards.

As prices are continuously rising profits of the entrepreneurs rise, their demand for factors also rise which results into increase in investment, employment and wages.

Causes of demand pull inflation:

1 Increase in money supply: As supply of money is higher than supply of goods, it generates demand in the economy. Additional demand cannot be fulfilled by adjustment in supply as a result prices rise.

2 Increase in public expenditure. Money supply also increases due to increase in public expenditure. In order to finance excess expenditure sometimes government resort to deficit financing. Deficit financing leads to increase in money supply and thereby increase in demand.

3 Credit creation: If more credit is created by giving more loans, total money supply in the economy increases. Increase in money supply leads to increase in aggregate demand.

4 Increase in MPC: Excess demand is generated due to increase in marginal propensity to consume. If supply is not adjusted to excess demand the price level rises.

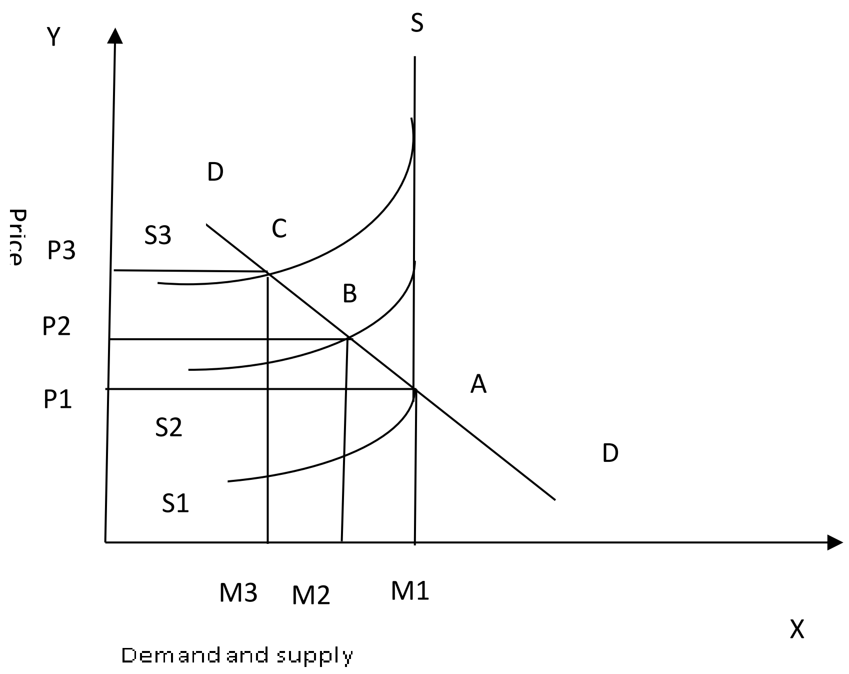
5 Increase in exports: Due to exports goods available in domestic market are reduced which affects the supply of goods. At the same time export earnings increase purchasing power in the economy and increase the demand. This leads to increase in prices.

6 Repayment of public debt: Governments take loans to finance various expenses. As such loans are repaid, the total money supply in the economy as well as purchasing power and demand increases.

7 Existence of black money: If there is unaccounted or black money in the economy, people spend more, velocity of circulation of money rises which leads to increase in the demand.

8 Other causes: size of population, diversification of resources may affect the demand or availability of goods and create inflationary tendencies.

Cost- push Inflation: According to a group of economists inflation arises because of increase in cost of production. Rise in prices is due to increase in the cost of production therefore it is called as cost push inflation.



In the diagram DD is demand curve. S1S, S2S and S3S are supply curves. Point F denotes full employment in the economy.

Initially op1 price is determined through interaction of demand curve DD and supply curve S1S at point A. Point A indicates full employment.

As cost of production increases supply curve shifts and S2S becomes the new supply curve. It intersects the demand curve at point B. At B new higher price level is determined in the economy, price level becomes op2. With further increase in cost of production, supply curve shifts upwards S3S becomes the new supply curve. The point of interaction between the demand curve and the supply curve is C. At C op3 price is determined. The increase in price is due to increase in cost of production.

Factors responsible to increase in cost of production:

1 Wages: Wages increase due to many reasons. Trade unions play important role in wage determination. If trade unions are strong they become successful in demanding higher wages. The burden of higher wages is further shifted to the customers resulting in to increase in prices.

2 Cost of material: Material cost is one of the significant factor determining costs. When prices of basic inputs like cement, petrol, steel etc. increases the material cost which leads to increase in prices.

3 Increase in profit margin of the producers: Firm in order to get higher profits may increase their profit margin, Desire to have higher profit margin may lead to inflationary tendencies because they try to earn higher profits by increasing prices.

4 Other Factors: Scarcity of natural resources or artificial scarcity may lead to increase in prices of inputs and prices. If firms are operating with excess capacity at higher costs they charge higher prices.

Causes of inflation

1 Over expansion of money supply

2 Expansion of bank credit

3Deficit financing

4 High prices of imports

5 Monopolies

6 Under utilisation of resources

7 High indirect taxes

8 Black money

9 Material cost

10 High factor cost

11 Government spending and debt

12 Growth of population

Effects of inflation

Generally it is believed that mild inflation provides incentive for investment. But if inflation rate is very high, it has its harmful effects on the economy.

Followng are the effects of inflation.

1 Effects on production: According to Keynes if inflation occurs before full employment level, it provides incentive to production

activity. But once full employment level of output is reached, it has its harmful effects on production activity.

I Hindrance to capital accumulation: Inflation affects savings. Saving level declines due to decrease in purchasing power and thus affects capital accumulation which depends upon savings.

II Speculation: Inflation brings every kind of uncertainty in the market. In such situation, in order to earn quick profits people engage in speculative activities.

III Distortion of production pattern: Inflation changes production pattern. Resources are diverted from production of essential goods to non essential goods. Inflation hits poor but rich individuals continue their demand for luxurious goods. Therefore demand for luxurious goods remains intact but demand for essential goods decreases this leads to diversion of resources to non essential goods.

IV Hoarding and Black marketing: During inflation prices rise continuously. People expect prices to rise further therefore they hoard goods. Hoarding further decreases availability of goods. Black marketing also gets developed in such situation.

V Sellers market: As there is excessive demand in the market, sellers can sell any commodity in the market and take the advantage of rising prices. At the time of inflation the market becomes sellers market.

2 Effects on Distribution: Inflation has its effect on distribution of income. At the time of inflation, prices of all the goods do not increase in the same proportion as a result people belonging to different groups and consuming different goods have different type of impact of inflation. At the time of inflation value of money

changes, change in the value of money affects the distribution of income. Inflation affects different groups of people differently.

I Debtors and Creditors: Debtors normally gain at the time of inflation this is because they take loan when the purchasing power of money is higher but they repay the loans when purchasing power of money is lower. Creditors loose at the time of inflation as they get their money back when purchasing power of money is lower.

II Business community: Businessmen gain at the time of inflation. The value of their inventories and stock of goods rises in money terms at the time of inflation. Prices also rise faster than the cost of production therefore their profit margin increases.

III Fixed income groups: like salaried people normally are the losers. They depend on fixed earnings but purchasing power decreases. If they are not organised they may not get compensatory increase in their salaries. Though trade unions became successful in getting higher wages, normally wages rise slowly than prices. Therefore, fixed income earners loose at the time of inflation.

IV Farmers: Farmers gain during the time of inflation. Farmers can get better prices for their farm products during inflation.

V Investors: Those who invest in debentures and fixed income earning investments lose at the time of inflation. But those who invest in equities benefit because they get better dividend because of high profits of companies.

3 Effect on consumption: Consumers value of money gets eroded due to inflation. Purchasing power depletes (gets reduced) as a result real consumption of common people gets reduced. Cost of living rises therefore standard of living of the consumers gets affected.

Total welfare of the entire community declines at the time of inflation.

4 Other effects of inflation:

Distortion of savings- Savings decline as major portion of income is spent on consumption due to high prices.

Distortion of budget- Inflation affects governments as well as individual’s budget. Government has to make provisions to finance increased expenditure.

Disturbance in planning- Planned programmes and allocation of resources gets disturbed due to constraints of the resources.

Lowering International Competitiveness- If the rate of inflation is higher than the rate of inflation in other countries the international competitiveness of the country gets affected.

Effect on the rate of exchange- Rate of exchange gets affected due to inflation. External value of currency decreases.

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