ARULMIGU PALANIANDAVAR ARTS COLLEGE FOR WOMEN, PALANI.

B.A ECONOMICS

Core Course

MACRO ECONOMICS

III Semester

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MACRO ECONOMICS

UNIT-I

INTRODUCTION

The term 'Macro' was first used in Economics by **Ragner Frisch** in 1933. But as a methodological approach to economic problem, it originated with the **Mercantilists** in the 16th and 17th centuries. They were, concerned with the economic system as a whole. In the 18th century, the **Physiocrates** adopted it in their Table Economique to show the "Circulation of Wealth" (i.e. the net product) among the three classes represented by farmers. landowners and the sterile class. **Malthus**, **Sismandi** and **Marx** in the 19th century dealt with macro economic problems. **Walras**, **Wicksell** and **Fisher** were the modern contributiors to the development of macro economic analysis before Keynes. Certain economists like Cassel, Marshall, Pigou, Robertson, Hayek and Hawtrey developed a theory of money and general process in the decade following the 1st World War. But credit goes to Keynes who finally developed a General theory of income, output, and employment in the wake of Great Depression.

The term "Macro Economics" has been derived from the Greek word "Makros' meaning large. Macro Economics is the study of aggregates or averages covering the entire economy such as total employment, national income, national output, total investment, total consumption. total savings, aggregate supply. aggregate demand and general price level, wage level and cost structure.

DEFINITIONS

According to Boulding, Macro Economics is that part of the subject which deals with great aggregates and averages of the system rather than a particular item in it.

Macro Economics is "one that deals not with individual quantities, as such, but with aggregates of these quantities, not with individual income but with national income, not with individual prices but with the price level, not with individual outputs but with national outputs,

“Macro Economic theory is the theory of income, employment, prices and money” - Culberton

"The term Macro Economics is applied to the study of relations between broad economic aggregates"

- R.G.D. Allen

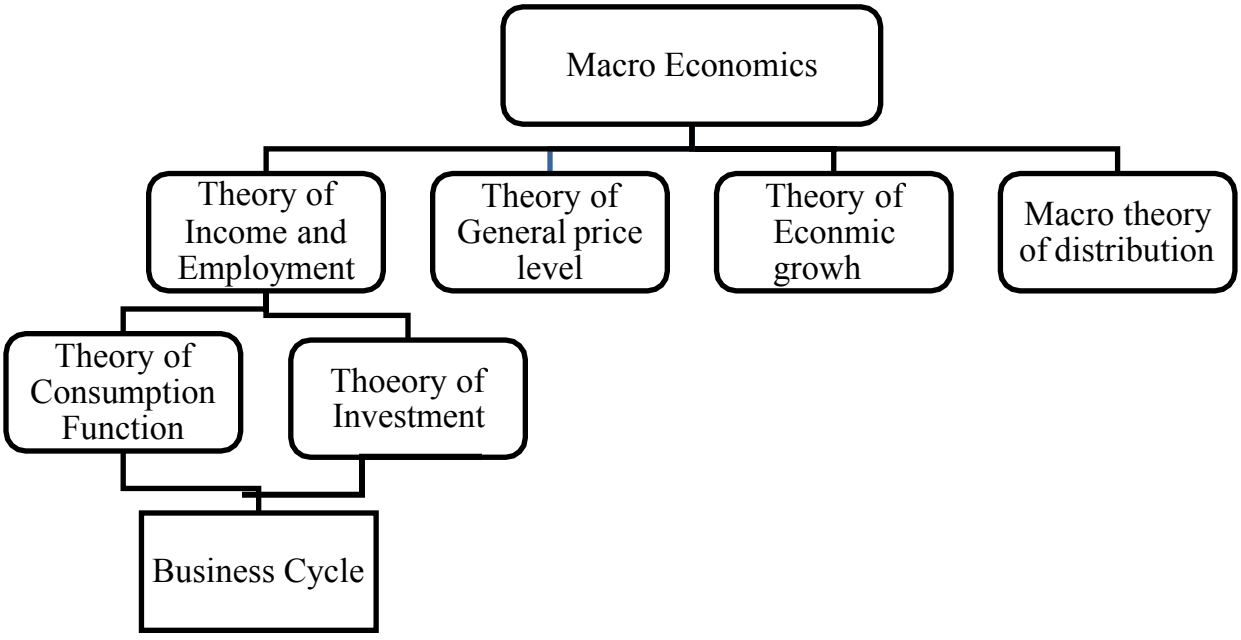
"Macro Economics is the analysis of the economy in the large or it deals with economic affairs in the large"

- Cairn Cross

To Prof.J.K.Metha, it is the Economics of the whole system.

Macro Economics is thus the study of aggregate income, aggregate output and so on. Hence, it is rightly called **Aggregate Economics** or **Aggregate Analysis**. General Theory of Employment Interest and money of J.M.Keynes is an outstanding example of Macro Economics.

With its birds' eye view 'Macro Economics as MC. Connel observes. examines the forest and not trees. It covers the theory of income, output and employment, theory of money and prices, Theory of Economic growth, Macro theory of Distribution and Economics of banking. The whole domain of Macro Economics may be presented in a chart as follows.



TYPES OF MACRO ECONOMICS

Like Micro Economics Macro Economics is of 3 kinds.

1. Simple Macro Statics
2. Comparative Macro Statics and
3. Macro Dynamics

Simple Macro Statics

Studies the relationship between Macro Economic variables in a stationary situation.

Comparative Macro Statics

Studies the comparative Macro Static equilibrium positions in the economy

Macro Dynamics

Macro Dynamics on the other hand, studies the process through which a new equilibrium is established after a change in independent macro economic variable.

Differences between Micro and Macro Economics

S.No.	Micro Economics	Macro Economics
1.	It studies the economic actions of individuals or groups of individuals. It provides a microscopic view of the economy.	It is concerned with the whole economy. It analyses problems like total employment, total investment etc. It provides a macroscopic view of the economy.
2.	It is concerned with the analysis of price output determination under different market conditions and allocation of economic resources to particular uses	It is interested in the analysis of the. levels of national product and total employment of economic resources.
3.	It uses partial equilibrium analysis with certain assumptions.	It uses general equilibrium analysis to study the determination of aggregate price and output levels.

There are differences between micro economics and macro economics. As a result, a micro economic preposition may not be applicable to a macro economic situation. Similarly, not all macro economic propositions are useful in micro economic analysis. However, they are mutually interdependent and complementary to each other. Therefore, no hard and fast distinction can be drawn between micro economics and macro economics. Both are needed for dealing with economic problems. Both are vital as pointed out by Prof. Samuelson.

IMPORTANCE OF MACRO ECONOMICS

1. To study the economic system

For obtaining the overall picture of the whole economy, which is very essential to achieve and maintain stable growth. We need to possess a good deal of knowledge in macro economics. The working of the whole economy cannot be perfectly studied in terms of individual economic quantities or elements.

2. To help in framing economic policies

The importance of macro economics lies in the formulation of economic policies. During the periods of inflation, deflation or business fluctuations knowledge in macro economics helps the government in framing suitable policies to get over the difficulties. The Government cannot regulate the price and output policies of individual firms, but it can control general prices, general output, general volume of trade etc. Thus macro economics in perhaps more important than micro economics, at least in so far as public economic policy is concerned.

3. To understand micro economics.

The study of macro economics helps to have a proper understanding of micro economics. No micro economic theory or principle could be formulated without a prior study of the aggregates. The theory of the firm, for example, cannot be built upon the behaviour pattern of one single firm alone. Rather it requires the examination of the general behaviour pattern of several other firms.

4. To control economic fluctuations

Economic fluctuations are inseparable from the capitalist economic system. To reduce their severity, the help of macro economics is necessary. The theory of business cycle is part and parcel of macro economics. To formulate such a theory,

we have to take into consideration the aggregate consumption, saving and investment of the economy.

5. To examine inflation and deflation.

Macro economic approach is of paramount importance in analyzing and understanding the causes and effects of inflation and deflation. It helps to insulate the economy against their attacks.

6. A study of national income

Macro economics has brought to light the importance of the study of national income and social accounting, while Micro economics has kept such a study in the dark. Without studying national income, it is not possible to formulate correct economic policies.

7. A study of economic development

Macro Economics helps the development economists to focus attention on the problems of the under developed countries. It guides them to work out policies in order to improve the living standards of the people.In Macro economic development is an important division.

8. A study of full-employment

Achievement of full employment is one of the objectives of development. policies. To fulfill this, the study of macro economics is of greater help. All the determinants of employment fall within the purview of macro economics. Further the general equilibrium analysis comes within its scope.

Thus the utility of macro economics approach is greater in understanding the operation of the economic system. But while pointing to its importance, it should not be forgotten that it has certain serious limitations.

LIMITATIONS

1. The greatest danger of macro analysis is the **danger of excessive generalization** from individual experience to the economy as a whole. What is true of an individual household cannot be true of an aggregate say a sector or community. For example withdrawal of deposit by an individual is all right. But if all depositors withdraw

their money one and at the same time the bank will collapse. Boulding called this phenomenon as macro economics paradox.

2. Macro Economic analysis in term of heterogeneous units results awkward conclusions

For example, 5 apples and 5 brinjals giving an aggregate of 10 fruits in meaningless. Such fantastic conclusions are quite possible in macro economics rather than in micro economics.

3. The greatest limitation of macro economics in the difficulty of measuring its aggregate variables like national income, national output and so on.

4. An aggregate variable may not produce the same impact on all the sectors of an economy:

For example, a rise in the price level may affect the different sectors of the economy differently.

5. Aggregate variables may not be important necessarily:

The aggregate variables which form the economic system may not be much significant. For instance, the national income of a country is the total of all individual incomes. A rise in national income does not mean that individual incomeshave risen. The increase in national income might be the result of the increase in theincomes of a few rich people in the country. Thus a rise in national income of this type has little significance from the point of view of the community.

CONCLUSION

Though Micro and Macro Economics are studied separately, they are competitive. But they complement one another in approach to study the object matter of economics. As Samuelson writes "There is really no oppose between Micro and Macro Economics. Both are absolutely vital. You are led half educated, if you understand the one while being ignorant of the other.

UNIT - II

NATIONAL INCOME

The concept of National Income or national dividend occupies an important place in economic theory. National Income is the flow of goods and services. which become available to a nation during a year. To be more precise. National Income is the aggregate money value of all goods and services produced in a country during the he year, account being taken of the deduction made due to wear and tear and depreciation of plants and machinery used in the production of goods and services. It is distributed among the factors of production in the form of rent, interest, wages and profits. The larger the National Income, other things remaining the same, the larger will be the share of each factor.

DEFINITIONS

Marshall's Definition

"The labour and capital of a country acting upon its national resources, produce annually a certain net aggregate of commodities, materials and immaterial including services of all kinds. The limiting word 'net' is needed to provide for using up of raw and half finished commodities and for the wearing out and depreciation of plant which is involved in production, all such waste must of Course be deducted from the gross produce before the true or net income can be formed. And net income due on account of foreign investment must be added in. This is the true net annual income or revenue of the country or the national dividend"

Pigou's Definition

"The national dividend is that part of the objective income of the community including of course, income derived from abroad, which can be measured in terms money."

Two points have been emphasized in this definition.

1. Income earned by the citizens on capital invested abroad has to be included in the National Income of the country.

2. Only that income can be included in the National Income of the country which can be measured in terms of money.

Fisher's Definition

"The national dividend or income consists solely of services as received by ultimate consumers, whether from their material or from their human environment. Thus, a piano or an overcoat made for me this year is not a part of this year's income but an addition to capital. Only the services rendered to me during that year by these things are income."

Thus according to Fisher, the National Income of a country is determined not by the annual production, but by its annual consumption.

FACTORS DETERMINING NATIONAL INCOME

1. Quantity and quality of factors of production

The quantity and quality of a country' stock of the factors of production is one of the most important influences on its national Income. The quantity and quality of land, the climate, the rainfall etc, determine the quantity and quality of agricultural production and hence the size of national Income. The quantity of labour has a double influence since labour is at the same time both a factor of production as well as the consumer of what is produced. The quality of labour depending upon inborn intelligence education and training also influence the volume of industrial production. Capital may comprise simple. primitive tools or the most modern type of industrial equipment. The quantity and quality of capital is one of the greatest influences on total output. Likewise, the quantity and quality of entrepreneurial ability is also an important element in the determination of the size of National Income of a country.

2. The State of technical know-how

Another influence on output and national income in the state of technical knowhow in the country. A country with a poor technical knowledge cannot have a large sized national income, because it will not be in a position to make the best possible use of its resources.

3. Political stability

Political stability is an essential prerequisite for maintaining production at the highest level. The economic development of several countries particularly the South American. Republic has been hindered in the past by political instability.

CONCEPTS OF NATIONAL INCOME

Gross National Product: (GNP)

It is nations total production of goods and services (Usually for one year) evaluated in terms of the market prices of goods and services produced. GNP Part-A is the money value of the total national production for any given period.

Two points need attention in calculating the GNP of a country.

1. We must take in to account the money value of the final goods and services produced in the economy to avoid double or multiple counting. Final goods and ar services are those which are finally consumed by the consumers. Such goods and services do not enter into the manufacture of other goods. Intermediate goods and services are those goods and services which do enter into the production of other goods and services (Bread for eg is a final good: but flour in a intermediate good Intermediate products are to be excluded from the GNP.

2. We must take into account money value of only currently produced goods and services while estimating the GNP of the country. This is due to the fact that GNP is a measure of the economy's productivity during a particular period of time. Thus, if certain goods and services are produced in 1968, but are not sold in 1969, they would be part of the GNP for 1968, and should not be counted as part of the GNP of 1969.

The use of the word gross should be particularly noted in relation to the term GNP. It refers to the inclusion in National Income, of that part of the total output which represents what is called depreciation or replacement. In producing goods and services, there is some depreciation or wear and tear of fixed assets. The depreciation or replacement is one of the items in the cost of production of the commodity. Every year an economy has to bear the loss on account of depreciation and replacement. But in computing the GNP, we do not deduct t total depreciation of the fixed assets.

There are two methods of estimating the GNP of a country. They are

1. Expenditure or Output Approach to GNP.
2. Income or Allocation Approach to GNP.

Illustration

1. **Expenditure Approach:**
    a) Personal Consumption Expenditure plus.
    b) Gross Domestic Private Investment plus
    c) Government purchases of goods and services plus
    d) Net foreign investment.

    Total = GNP.

2. **Income Approach:**
    a) Wages and salaries of employees plus
    b) Incomes of non-company businesses plus
    c) Rental incomes of persons plus
    d) Corporate profits plus
    e) Incomes from net interest plus
    f) Indirect taxes plus
    g) Depreciation of capital goods.

    Total = GNP

MERITS AND DEMERITS

Merits

It is a better index than any other concept of the actual conditions of production and employment in a country during a specified period. It is also statistically a simple concept as it takes no account of depreciation and replacement problems.

It is not a net measure of the nations' economic performance, for it is as the term states, a gross measure. Just as a business firm's profits give only a rough idea of the firm's performance, in the same manner, the GNP provides us with a general idea of the economy's accomplishment during the year. Just as to get a true picture

of the business firms, it is necessary to find out its net profits. Similarly to get an accurate idea of the achievement of an economy, we have to find out its net national product No doubt. GNP is a useful concept for analysis over a short period of time when changes in capital are not so important.

Net National Product (NNP)

It is the net production of goods and services in a country during the year. It is GNP minus the value of capital consumed or depreciated during the year.

NNP = GNP - Depreciation

NNP then is simply GNP adjusted for depreciation charges. NNP is also sometimes referred to as National Income at market prices. NNP is a better concept that GNP because it makes proper allowance for the depreciation suffered hy machinery, equipment, buildings etc during the year. This concept in also highly useful as it.

1. Gives an idea of **net income** in the total production of the country.
2. It also proves helpful in the analysis of the long run problem of maintaining and increasing the supply of physical capital in the country.
3. NNP is a highly useful concept for the study of Growth Economics.

Demerits

But the concept of NNP has also one serious drawback. It involves difficult and complex problem of fixing appropriate rates of depreciation for plants equipment and buildings etc.

Personal Income (P.I)

Personal Income is that income which is actually received by the individuals or households in a country during the year from all sources. It should be remembered that the whole of the National Income, earned by the factors of production in one year is not available to them. Several deductions are made out of it.

For e.g. corporate income taxes have to be paid out of corporate profits before they are distributed among the share holders. Likewise, a part of the corporate profits may be retained by the corporation (i.e. it may not be distributed among the

share holders. To that extent the corporate profits available for distribution among share holders are reduced. Similarly, the workers and the salaried employees have to make certain social security contribution out of their wages and salaries for funds, such as provident or pension funds. To the extent of these deductions, the amount available to the workers and the employees is reduced. As against this, the government may give social security benefits, such as unemployment, allowances, old age pension and widow pension. Such allowances are not given for any productive work. They are known as transfer payments.

In order to derive PI from National Income, we have to deduct from National Income, those amounts which are not available for distribution among the factors of production. At the same time, we have to add to NY, the transfer payments made by the govt. to certain categories of people.

Thus, Personal Income = National Income - Corporate Income Taxes – Undistributed corporate profits - Social security contribution + Transfer Payments.

The concept of P.1 is a useful concept. It helps in estimating the potential purchasing power of the households in an economy. It also enables us to measure the welfare of the general body of consumers in the country. The weakness of the concept is that it does not clearly tell us the actual amount of money that is available to the households for spending and saving. To know this, we shall have to find out the disposable income of the households.

Disposable Personal Income: (DPI)

The whole of the personal income (P.I) accruing to individuals or households is not available for being spent on consumption. The reason is that a part of the PI has to be paid by individuals or households to the govt. by way of Part personal direct taxes. That part of PI which is left behind after payment of personal direct taxes is called Disposable Personal Income which is spent by the -for individuals or the household for consumption. Therefore,

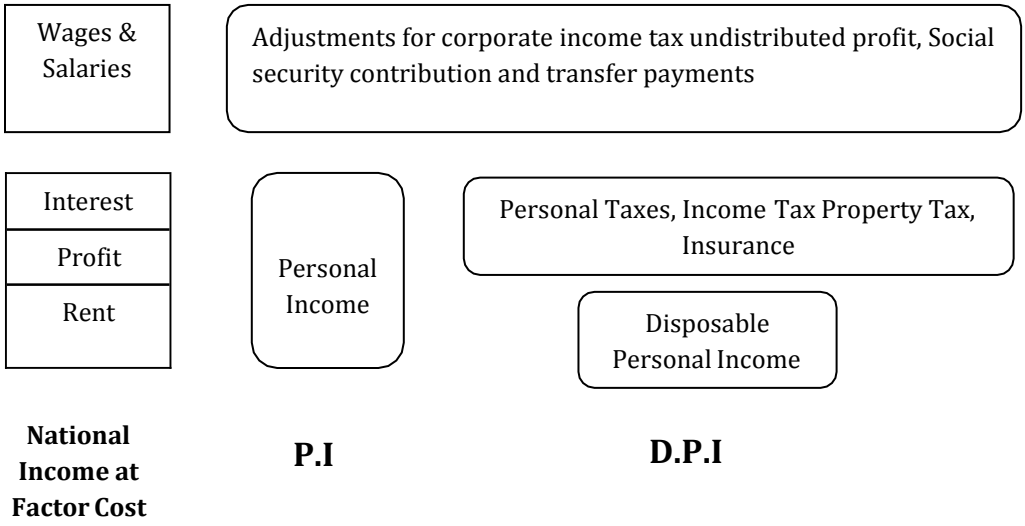
DPI= PI - Personal Direct Taxes.

But it is not essential that the whole of the DPI is spent a consumption alone. Generally, individuals spend a major portion of DPI on consumption, reserving the remainder for saving. Therefore,

DPI = Consumption + Savings

By comparing DPI with Pl, we can find out the money burden of personal direct taxation. DPI is a useful concept.

From National Income to Disposable Income



National Income and Real Income

The National Income of a country is expressed in terms of money. But the value of money often changes over a period of time. Hence a problem is created in comparing the national income of the country for different years. To get over the difficulty the concept of real income has been evolved when we express the national income of a country during a particular year in terms of current prices is known as **National Income at current prices.** The national income of particular year when compared with the national income of the base year with includes the effect of two changes namely,

1. Change in the production of goods and service.
2. Change in the price level or value of money.

Comparing the income of a particular year with that of the base year will not be meaningful due to the change in the value of money. To make it meaningful, the national income of the year should be converted into real income by making proper adjustments either by deflating or inflating it depending upon the change in the price level. For instance 1970 is the base year and we have to compare the national income of 1977 with 1970. Then we have to deflate the nominal income of 1977 and make it a real income, as the price has gone up during the period. For this, we take

the real output of goods and services in 1977 and evaluate it at the price level of the base year 1970 and not at current prices prevailing in 1977. Having done this, we shall compare the national income of 1977 with the national income of 1970 and find out the changes that have taken place during that period when national income is expressed in terms of **current prices**, it is called **national income**, but when it is expressed in terms of **constant prices prevailing in the base year it is called Real Income.**

Based on this, we have to find out the per capita income to indicate the change.

$$\text{Per capita real income} = \frac{\text{Real National Income}}{\text{Size of Population}}$$

Per Capita Income

The average income of the people of a country in a particular year is called per capita income for that year. This concept also refers to the measurement of income at current prices and at constant prices. For instance, in order to find out the per capita income for 1981, at current prices, the national income of a country is divided by the population of the country in that year.

$$\text{Per capita income for 1981} = \frac{\text{National income for 1981}}{\text{Population in 1981}}$$

Similarly, for the purpose of arriving at the Real per capita income also, this very formula is employed.

$$\text{Real Per capita income for 1981} = \frac{\text{Real National income for 1981}}{\text{Population in 1981}}$$

This concept enables us to know the average income and the standard of living of the people. But it is not very reliable because in every country due to unequal distribution of national income a major portion of it goes to the richer sections of the society and thus income received by the common man is lower than the per capita income.

Methods of Measuring National Income

There are four methods of measuring National Income

i. Production Method

ii. Expenditure Method

iii. Earning or Income Method

iv. Value added

1. Production Method

In this method, we have to make use of production or output statistics to estimate the GNP by industrial origin. The total products produced in the economy are calculated for the year and the value of this flow is equated to market price avoiding double counting. The economy is classified conveniently into different sectors, viz., agriculture, industry, direct services and foreign transactions. In each sector we make an inventory of goods produced and find o the end product making an addition to the value of goods. The data comes mainly from the census of production supplemented by various surveys, company report market reports, trade statistics and other information. The census of production shows, the value added of each industry or economic activity. The value-added of a firm is its output less whatever it purchases from other firms, such as materials, accessories and parts and other inputs. Value-added thus include wages, profits, interest, rent and business tax. In the direct service sector, the value of services of such professions like doctor, dramatists, soldiers, shoe-shiners, professors and politicians etc., are taken by equating their salaries to the service. In the international transaction, the value of goods imported is subtracted from that of the goods exported; the claim of foreigners is deduced from the balances created abroad by nationals to arrive at the net addition.

2. Expenditure Method

In this method, the estimate of the GNP is made from the expenditure side. How much is spend on consumption and capital investment? How do the private and the public sector incur expenditure on every item? One man's Income is another man's expenditure. In practice, the production approach and expenditure approach are

complementary to each other. The GNP at market prices, prices is equal to the gross national expenditure which includes the following:

a. Expenditure by consumers on goods and services.

b. Expenditure by private manufacturers on capital or investment goods and

c. Expenditure by government on consumption as well as capital goods. To this we should add.

d. Money's received from export of goods and services and incomes received on foreign investments.

3. Earning or Income Method

This method refers to the gross national income (which is equivalent to gross national product) obtained by adding together wages and salaries, interests, profits and rents of persons and institutions including government. Incomes are earned either from property or through work. To arrive at the totality of income of a nation, the following procedure will be adopted.

a. First, about net rents including the rental value of owner occupied houses. This information is processed in the income tax department;

b. Next about wages, salaries and all such earnings of persons employed. This is a straight and simple issue. Pensions, however, are excluded;

c. Earnings by way of interest come next;

d. The incomes of joint stock companies;

e. The incomes of unregistered business units; and

f. Finally, incomes from overseas investments

In theory, the net national product should be conceptually equal to the net national income. The equations connected with these are as follows:

On the earning side:

Net National product = Wages + Profits + Interest + Rent
= National Income

On the spending side:

National Income = Consumption + savings

= Consumption + Net Investment

= Net National Product.

4. Value added Method

Under this method, the difference between the value of input and the value of output at different levels of employment would be found out for each industry. Then the difference obtained for various industries would be added up to get national income by value added method.

Conclusion

It is very difficult to arrive at national income by adopting any one method. So one or two methods are combined together to collect the national income data.

DIFFICULTIES IN THE MEASUREMENT OF NATIONAL INCOME

1. The difficulty of defining 'nation'

There is the difficulty in defining 'nation' in national income. Every nation has its political boundaries but in the national income is also included the income earned by the nationals of a country in a foreign country beyond the territorial boundaries of that country.

2. Difficulty in assessing goods and services in terms of money

National income is always measured in money, but there are a number of goods and services which are difficult to be assessed in terms of money that is painting as a hobby by an individual the bringing up of children by the mother. By excluding all such services from it, the national income will work out to be less than what it actually is.

3. Double Counting

The greatest difficulty in calculating the national income is of double counting, which arises from the failure to distinguish properly between a final and a

intermediate product. There always exists the fear of a good or a service being included more than once. If it so happens, the national income would work out to be many times the actual. Flour used by a bakery is an intermediate product and that by a household the final product. To solve this difficulty, only the final goods and services are taken into account, and that is not so easy a task.

4. Income earned though illegal activities

Such as gambling, or illicit extraction of wine, is not included in national income. Such goods and services do have value and meet the needs of the consumers. But by leaving them out, the national income works out to be less than the actual.

5. Transfer payments

Then there arises the difficulty of including transfer payments in the national income. Individuals get pension, unemployment allowance and interest on public loans, but whether these should be included in national income is a difficult problem. On the one hand, these earnings are a part of an individual income and on the other, they are government expenditure. To avoid this difficulty, these are deducted from national income.

6. Capital Gains or Losses

Which accrue to property owners by increases or decreases in the market value of their capital assets or changes in demand are excluded from the GNP because such changes do not result from current economic activities.

7. Problem of estimating depreciation charges

When we deduct capital depreciation from GNP, the resulting measure is NNP. Depreciation is a charge on profits which lowers national income. But the problem of estimating the current depreciated value of a piece of capital whose expected life is 50 years is very difficult.

8. Changes in price level

Another difficulty in calculating national income is that of price changes which fail to keep stable the measuring rod of money for national income. When the price level in the country rises, the national income also shows an increase even though the production might have fallen. On the other hand, with a fall in price level,

the national income shows a decline even though the production might have gone up. Thus due to price changes the national income cannot be adequately measured.

9. Moreover, the calculation of national income in terms of money is under estimation of real national income.

It does not include the leisure foregone the process of production of a commodity. Thus incomes earned by two individuals may be equal, but if one of them works for longer hours than the other would be correct to some extent to say that the real income of the former has been understated.

10. In calculating national income, a good **number of public services** are also taken which cannot be estimated correctly. How should the police and military services be estimated? In the days of war, the forces are active, but during pea they rest in cantonments. Similarly, to estimate the contribution made to nation income by profits earned on irrigation and power projects in terms of money also a difficult problem.

PROBLEMS OF MEASUREMENT IN A DEVELOPING ECONOMY

1. Non-monetized sector

There is a large non-monetized sector in a developing economy. There is: the subsistence sector in rural areas in which a large portion of production is partly exchanged for the other goods and is partly kept for personal consumption. Such production and consumption cannot be calculated in national income.

2. Lack of occupational specialization

There is the lack of occupational specialization in such a country which makes the calculation of national income by product method difficult. Besides the crop.. farmers in a developing country are engaged in supplementary occupation like dairying. poultry, cloth making etc. But, income from such productive activities is not included in the national income estimates.

3. Non-market transactions

People living in rural areas in a developing country are able to avoid expenses by building their own huts, tools, implements, garments and other essential commodities. Similarly people in urban areas having kitchen gardens produce vegetables which they consume themselves. All such productive activities do not

enter the market transactions and hence are not included in the national income estimates.

4. Illiteracy

The majority of people in such a country are illiterate and they do not keep any accounts about the production and sales of their products. Under the circumstances the estimates of production and earned incomes are simply guesses.
5. Non-availability of adequate data

5. Non- availability of adequate data

Adequate and correct production and cost data are not available in developing country. Such data relate to crops, forestry, fisheries, animal husbandry and the activities of petty shopkeeper's small enterprises, construction workers etc. For estimating national income by the income method, data on unearned incomes and on persons employed in the service sector are not available; Moreover, data on consumption and investment expenditure of the rural and urban population are not available for the estimation of national income by the expenditure method. Moreover there is no machinery for the collection of data in such countries.

IMPORTANCE OF NATIONAL INCOME ESTIMATES

The national income accounts have multiple uses

1. A barometer of the functioning and growth of the economy

National income accounting provides a barometer of the functioning and growth of the economy. It indicates how the economy is working in terms of income and output. It points out the rising and falling growth rates. A country's competitive strength in weapons development, space exploration and other projects is revealed by the national income statistics.

2. A sectoral analysis

National income accounting is anatomical in studying the structure of the economy. In a society where the influence of the Government on economic activities is of high order, it is very helpful in achieving the goals of stability and growth. National income accounts include such statistics as industrial production, changes in inventories, consumer and wholesale prices, employment, average weekly hours worked, wage rates, personal income, consumer spending, money supply and interest rates, government receipts and expenditures, exports and imports and so

on. By analyzing these statistics we can diagnose and even forecast the working of the economy.

3. A guide to policy makers

National income accounting helps the policy makers in making correct policies towards the objectives of achieving and maintaining full employment and economic growth. It enables them to take correction action. If for example, investment spending is inadequate to maintain full employment and growth, government can increase investment by offering tax concession. If consumption spending is slackening government can lower income taxes or increase transfer payments.

4. A weapon in economic planning

The importance of national income accounting in highly significant in the field of economic planning. For embarking on economic planning we need a prior knowledge of the trends in national income. The sector wise distribution of outlay and the determination of targets for each sector in economic planning are based on figures relating to distributive shares. Further, the national income statistics are of greater need in determination of growth rates.

5. A tool in correcting the disequilibrium in the economy

With the help of national income data we are able to watch the working of the economy and check the economic upheavals like inflation and deflation. If for example, consumption and investment expenditure are high enough to cause G_1 inflation or low enough to cause increased unemployment, Government can offset these effects by changing its budgetary or fiscal policies.

6. A guide to business executives

The business executives are much benefitted by the national income statistics in planning their sales. For example, the business executive trying to forecast sales of a consumer product for the next year is most likely to be interested in the past behaviour of estimates of disposable income.

7. A guide to treasury department treasury makers

The Finance Minister is able to estimate the Government revenues on the basis of the figures related to factor payments. The statistics relating to corporate

profits and personal income help the officials estimate the revenues from corporate profits taxes and income taxes.

8. A measure of economic progress

Whether the economy of a nation is progressive or stagnant can be judged by studying the trends in the GNP over time. GNP is frequently used as a measure of economic progress, for it is a measure of total production of goods and services.

9. A guide to giant corporations

National income studies are more important to giant corporations than to small businesses. If a corporation is thinking of erecting another steel mill or automobile assembling plant, it has to forecast growth in population, growth in income, growth in demand for its product, population shifts within the country, prospects of exporting its product and of facing rival products and so on.

10. International Comparisons

National income estimates enable us to make international comparisons and the standard of living of the people.

11. National income figures show the capacity of each country to bear somecommon burden of international institutions like the UNO

In short, national income figures help Governments in planning, policy making preparation of budgets and forecasting the level of economic activity.

UNIT – III

THEORIES OF EMPLOYMENT

MEANING OF FULL EMPLOYMENT

Economists define full employment as a condition in which all those who are able and are willing to work for a wage are provided with wage-employment. On the other hand, if a part of those able and willing to work are not provided with wage employment (or could not be provided with wage employment) then it is said that the condition of unemployment prevails in the country.

DEFINITION

Beveridge defined full employment in a broad sense that it "means having always more vacant jobs than unemployed men. It means that the jobs are at fair wages of such a kind and so located that the unemployed men can reasonably be expected to take them".

A.P.Lerner defined full employment as "that level of employment at which any further increase in spending would result in an inflationary spiral of wages and prices".

The **old classical economists** define full employment as the absence of involuntary unemployment.

According to **J.M.Keynes,** “full employment is that particular situation in the economy in which an expansion of effective demand fails to bring about an expansion of output and employment".

TYPES OF UNEMPLOYMENT

The term "unemployment" is well understood in ordinary parlance. But in Economics, it is difficult to define it precisely. Generally this means a state of economy in which people who are fit and willing to work cannot find a suitable work. The nature of unemployment in a developed country is different from the unemployment in an underdeveloped country. In the former unemployment arises mostly due to business cycles and recessions. This will be more so in capitalist economies. In underdeveloped countries, unemployment is primarily due to excessive manpower in relation to other factors of production. Lack of technology and lack of flexibility in

substituting different factors of production will result in unemployment. The different categories of unemployment are as follows.

1. Seasonal Unemployment
2. Frictional Unemployment
3. Technological Unemployment
4. Structural Unemployment
5. Voluntary Unemployment
6. Involuntary Unemployment
7. Cyclical Unemployment
8. Social Unemployment
9. Educated Unemployment and
10. Disguised Unemployment

1. Seasonal Unemployment

In some industries production does not take place at the same level throughout the year. Production may be discontinuous as the demand for the products of these industries is seasonal. For example, brick making will take place only during the summer months and will be discontinued during the rainy season Preparation of fruit juices from natural fruits is done only during the harvesting season for fruits. Even in the case of agricultural activities raising certain crops in restricted to particular seasons. Therefore, workers engaged in such seasonal industries or occupation will have employment only during the production seasons. During the rest of the year they will have to remain unemployed. Hence this type of unemployment is known as seasonal unemployment.

2. Frictional Unemployment

In any country, at any particular time, a certain number of people will be leaving the present jobs and going in search for new jobs. It is likely that those people who are shifting from one industry to another may have to wait for sometime before they are absorbed in their new jobs. In some cases, they may be required to take re-training for the new jobs. Unemployment of such people till they are absorbed in their new jobs is known as frictional unemployment.

Those who complete their school or college courses and go in search of jobs in our country have necessarily to wait for a few months or years before they secure their jobs. Such unemployment of these graduates is also frictional unemployment.

Unemployment caused by strikes by workers or by lock outs declared by the employers will fall under frictional unemployment.

3. **Technological unemployment**

Sometimes, employers may introduce capital intensive methods of production and use more and more machines which will displace labour. This will cause unemployment of labour. This type of unemployment is known as technological unemployment. For example, if a business or industrial unit installs a computer to process its accounts, many accounts clerks in that unit may lose their jobs.

4. **Structural unemployment**

It is that type of unemployment which arises due to the structural changes in the economy of the country. For example, if there is a long-term decline in the export trade of a country. This may be considered as structural change in the economy of that country. The resultant unemployment in the export industries of that country shall be referred to as structural unemployment.

5. **Voluntary unemployment**

Workers may refuse to accept the prevailing wage rate and want to remain unemployed. Similarly when people get regular source of income from unearned income, they may refuse to do any work. Sometimes, there may not be relationship between the employer and the employees. Workers may therefore, wish to remain unemployed. This type of unemployment is not a serious one.

6. **Involuntary Unemployment**

Opposite to voluntary unemployment is involuntary unemployment Workers are willing to do jobs and are able to do work. But there are no opportunities for them.

7. **Cyclical unemployment**

Unemployment in the Keynesian sense is called cyclical unemployment when it occurs due to business fluctuations causing depression at regular intervals. Hence, the unemployment caused by depression will also be cyclical in character. During depression, the business activity becomes dull and reaches a low level creating unemployment. This type of unemployment will arise in advanced capitalistic countries. Here in the country, unemployment arises not because of "too little capital" but because of "too much capital" for a short while in relation to demand for goods. This class of unemployment can be removed by boosting the level of effective demand, which can be done by raising the rate of investment.

8. Social unemployment

If the labour is unemployed because of it's age, sex, religion etc., the resultant unemployment may be called social unemployment.

9. Educated unemployed

Unemployment prevailing among educated youth is called educated unemployment. Many who have completed schooling and many doctors ever remain unemployed. Lack of increase in employment opportunities compare with increase in educational facilities is responsible for educated unemployment.

10. Disguised unemployment

This is what is called concealed unemployment much prevalent in underdeveloped economics depending on agriculture and other connected occupations. Though, superficially the labourers may be employed in the physical sense, they will be unemployed in the economic sense ie., their marginal productivity may be zero. Disguised unemployment may take two forms,

1. Employment of people in less productive occupations than they are capable of doing ie., Under utilization of skills and capacity possessed by the people.

2. Employment of a large number of people for doing a job that could be done. With a lesser number. For instance, the removal of a part of labour from the agricultural sector of backward economics would not affect total production. Such type of unemployment may also result due to structural defects, if the capital and technical resources of the country have not been developed. Disguised unemployment can also be called under - employment.

This type of unemployment arises due to under-utilization of existing skill and de-skilling of labour during the period of employment. The main reason for disguised unemployment in under-developed countries is that the capital resources of the countries have not developed along with the growth of population. This exits not only in agriculture, but also in other vocations.

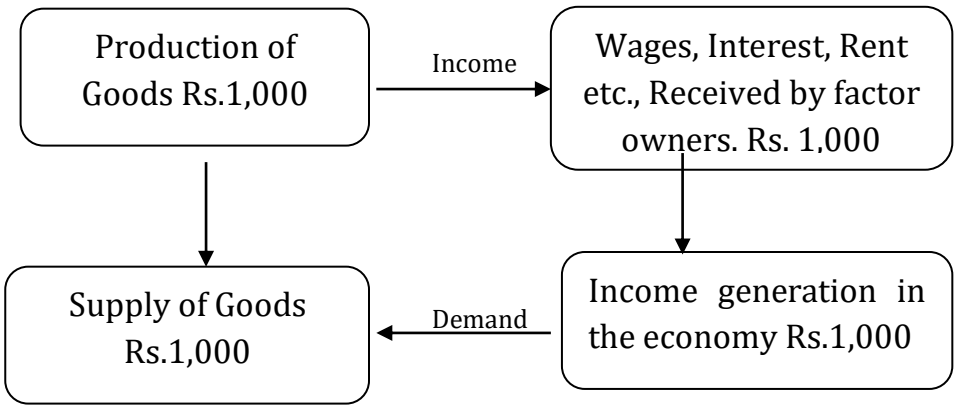
CONCLUSION

Thus the nature of unemployment differs in under developed countries from advanced countries. Unemployment involves a great wastage of productive resource. All Government particularly of under developed countries tries to combat unemployment by many methods. The main task behind development is creating additional employment opportunities to absorb the extra human force.

J.B.SAY'S LAW OF MARKETS

The classical economists had immense faith in the law of markets enunciated by J.B.Say, the French economist. The law states, **Supply creates own demand**. According to Says' law of markets, general over production and unemployment are logically impossible and cannot exist in an economy under normal conditions, as the supply creates its own demand.

Supply creates its own demand is explained in the following manner. In the process of production and supply of goods, incomes are created and distributed to consumers to enable them to demand goods produced. The source of demand for produced goods comes from incomes earned by factors of production. This can be illustrated as follows.



According to Says' Law of markets, the production of goods worth Rs. 1,000 creates income of Rs.1,000 which will become the source of demand for the supply of goods worth Rs.1,000. Thus any quantity produced and sold in market will be demanded and lifted, as for every production there is a generation of income to an equal amount to demand the extra goods. In this sense, there can be no over production or shortage of demand. If this be the case, all unemployment factors will be automatically employed as their production would create income necessary to lift the goods from the market. Ultimately all the factor units will be fully utilized ie., a condition of full employment will be reached.

ASSUMPTIONS OF THE LAW

1. The law assumes that there is no Government or artificial intervention in economic activities hindering the automatic and self-adjusting mechanism of the economy.

2. In a free enterprise economy working on price mechanism there is unlimited scope for the growing population and an increase of capital.
3. The size of the market is capable of expansion and the expanding markets permit new firms and workers who make their way into the productive processes without displacing the existing labour force and
4. All savings are automatically invested and the equality between savings and investment is brought about by interest flexibility.

Implication of Says' Law

1. Says law of markets is a denial of general over production and unemployment in the economy.
2. So long as there exist unemployed resources in the economy, it is profitable to employ them to the point of full employment, subject to the limitation that the contributors of resource are willing to accept reward on a par with their physical productivity.
3. Since there is an automatic price mechanism working in the economy there is no need for Government intervention in the functioning the economy.
4. Interest flexibility brings about equality between savings and investment.
5. Since whatever is produced can be sold out, money-has no role to perform in the economy except as the medium of exchange to obviate the difficulties of barter.

Criticism of the Law of Markets

Says' Law of markets in altogether rejected and discrete now.

1. It is true that production in the economy generates income to factor owners who make use of the extra income in demanding more. But there is no reason why the entire income is used to lift the goods produced and offered in the market. In short, the assumptions that all incomes are made use of without leakage and all savings are invested are altogether wrong. The circular flow of income would not be maintained. If households do not spend all they earn then there will be deficiency in demand. In Keynes language, it is called deficiency in aggregate, demand. Deficient demand would result in unsold stock and over-production. This would be followed by unemployment and falling incomes.
2. The assumption that all savings are automatically invested cannot hold well in practice. Investments depend on opportunities in the economy and these opportunities will not be unlimited. All the money saved cannot be invested; it

will be hoarded for future use. Money acts as a store of value as well. This function of money was neglected in Says' law.

3. The fundamental defect of Says' law is the extension of micro-economic principles to macro economics. The Classical economists had attempted to extend partial equilibrium analysis to general equilibrium applicable to the entire economy.
4. Finally, Says' law of markets is primitive in concept applicable to a barter economy and not to the money economy of modern days. This law pieces markets was literally blown to prices during the period of the Great Depression (1929-1933) when there was overproduction unemployment. This proved that supply cannot create its own demand.

CLASSICAL THEORY OF EMPLOYMENT

The classical theory assumes the existence of full employment without inflation. Given wage-price flexibility there are automatic forces in the economic systems that tend to maintain full employment, and produce output at that level. Thus full employment is regarded as a normal situation and any deviation from: this level is something abnormal which automatically tends toward full employment. The classical theory of output and employment is based on the following assumptions.

ASSUMPTIONS

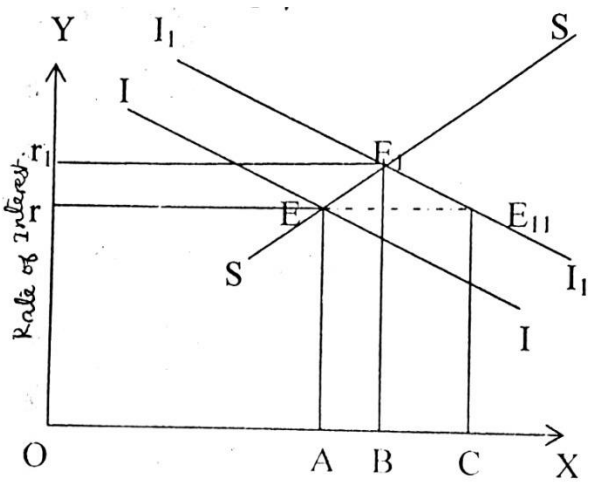
1. There is the existence of full employment without inflation.
2. There is a closed laissez faire capitalist economy without foreign trade.
3. There is perfect competition in labour and product markets.
4. Labour is homogeneous.
5. Total output of the economy is divided between consumption and investment expenditures.
6. The quantity of money is given.
7. Wages and prices are flexible.
8. Money wages and real wages are directly related and proportional.
9. Capital stock and technological knowledge are given in the short run.

Says law of markets is the core of the classical theory of employment, **Supply creates its own demand.**

This reasoning is based on the assumption that all income earned by the factors owners is spent in buying commodities which they help to produce. What is not spent is saved which is automatically invested. Thus saving must equal investment of there is any divergence between the two, the equality is maintained through the mechanism of the rate of interest. To the classists, interest is a reward for saving. The higher the rate of interest, the higher the saving and vice versa. On the contrary, the lower the rate of interest, the higher the demand for investment funds and vice versa.

If at a given period, investment exceeds saving, the rate of interest will rise. Saving will increase and investment will decline till the two are equal at the full employment level. This is because saving is regarded as an increasing function of the interest rate and investment as a decreasing function of interest rate.

The mechanism of the equality between saving and investment is shown in the following figure.



Saving and Investment

The saving and investment curves cut each other at point E, when the rat of interest is or and both saving and investment are equal to OA. If there is an increase in investment, the investment curve shifts to the right as I_1, I_1 curve and the interest rate or investment OC is greater than OA saving. According to the classical economists the saving curve SS remains at its original level when there is any increase in investment. To maintain the equality between saving and investment, the rate of interest will rise. This is shown to rise to Or_1, in the figure. At this interest rate, the saving curve SS intersects the investment curve I_1, I_1, at E_1, consequently both saving and investment are equal at OB.

The validity of Says law in a money economy also depends on the classical quantity theory of money which states that price level is a function of the supply of money.

Algebraically $MV=PT$

M = Supply of money

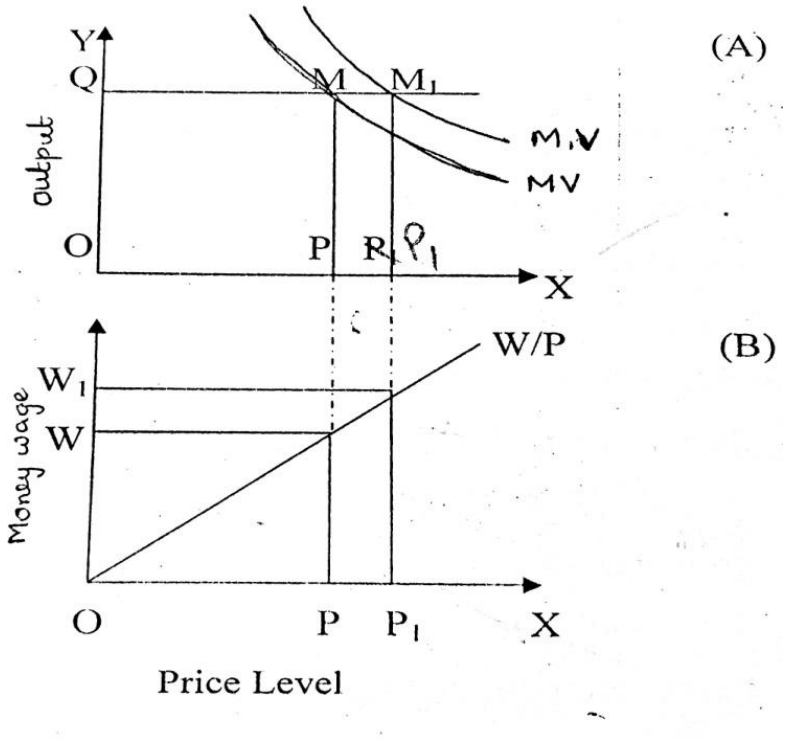
V = Velocity of circulation of money

P = Price level

T = Volume of transactions

The equation tells that the total money supply. MV equals the total value of output PT in the economy. Assuming V and T to be constant, a change in the supply of many causes (M) a proportional change in the price level (P). This is based on the assumption that money acts a medium of exchange.

The relation between quantity of money, total output and price level is depicted in the following figure.



Price level is taken along horizontal axis and the total output on the vertical axis. MV is the money supply curve which is a rectangular hyperbola. This is because the equation MV = PT holds on all points of this curve. Given the out level OQ, there would be only one price level OP consistent with the quantity of money as shown by point m on the MV curve.

If the quantity of money increases the MV curve will shift to the right M_1V curve. As a result, the price level would rise from OP to OPI given the same level of output OQ.

The rise in the price level is exactly proportional to the rise in the quant of money i.e. $PP_1 = mm_1$

Having determined the price level with the help of the total quantity money MV and the total output OQ, it is possible to determine the money wage consistent with a given real wage. This is explained is (B) part of the diagram where w/p is the real wage line or wage - price line. When the price level OP, the money wage is OW, when the price level rises to OP_1, the money wage a rises to OW_1.

Pigous' Version

The classical theory of employment received its final version at the hands of Pigou who formulated Say's Law in terms of labour market. According to Pigou, under free competition, the tendency of the economic system is to automatically provide full employment in the labour market. Unemployment results from rigidity in the wage structure and interferences in the working free market economy. When the state intervenes by recognizing trade unions, passing minimum wage laws etc, and labour adopts monopolistic behaviours, wages re-pushed up and unemployment ensues. If all government interferences are removed and forces of competition are allowed to work freely, the manipulation wage rates will lead to full employment.

The Pigovian equation N=qy/w explains the entire proposition.

In this equation

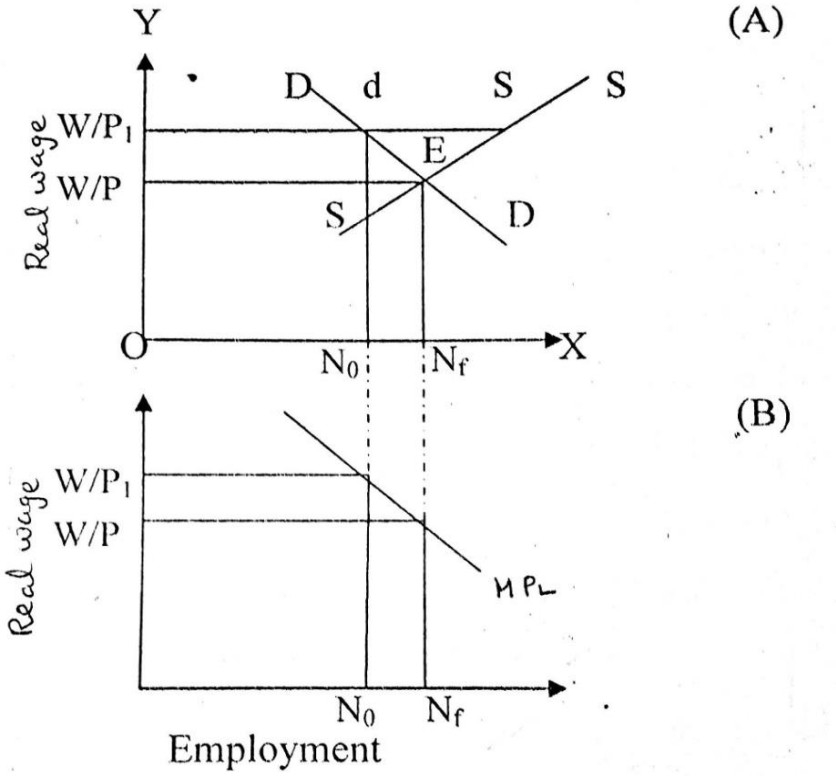
N-Number of workers employed

q- Fraction of income earned as wages and salaries

y - National income

w- Money wage

N can be increased by a reduction in w. Thus the key to full employment is a reduction in many wage. This is explained in the adjoining figure.



In Panel A, SS is the supply curve of labour and DD is the demand curve for labour. The intersection of the two curves at E shows the point of full employment, N_f, and the real wage w/p at which full employment is secured. If the real wage is maintained at a higher level (w/pi) supply exceeds the demand for labour by Sd. N_0, N_f, labour is unemployed. It is only when the wage is reduced to w/p that unemployment disappears and the level of full employment is attained.

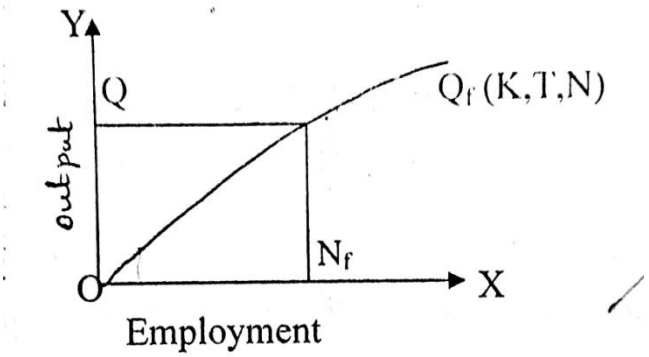
This is shown in Panel (B) where MPL is the marginal product of labour curve which slopes downward as more labour is employed. Since each worker is paid wages equal to his marginal product. Therefore the full employment level N_f is reached when the wage rate from w/p.

In classical model of employment changes in money wages and real wage are directly related and are proportional. When there is cut in the money wage, the real

wage also reduced same extent which reduces unemployment and ultimately brings full employment.

The relationship based on the assumption that prices are proportional to the quantity of money. It is argued that competitive economy a reduction the money wage reduces the cost of production and prices products there by raising their demand. In order to meet increased demand for the products more workers are employed to produce them.

As employment increases total output also increase till full employment reached. But when economy is at full employment level, total output becomes stable. Thus given the stock of capital, technological knowledge and resources, a precise relation exists between total and amount employment. Total output is an increasing function of the number of workers. This is shown in following figure.



Q=f(K, T, N) that is total output. Q is a function of 'f' of the capital stock K of technological knowledge T and the number of workers N. This production function shows that in the short run, the total output is an increasing function the number of workers given the capital stock and technological knowledge the figure, the total output OQ, corresponds to the full employment level N_f. The classists believed that under normal competitive condition full employment will be maintained without inflation.

CRITICISMS

1. Possibility of over production and unemployment

Say assumes that the entire income of the factors is spent. But it is not so. Those

who receive income may save and hoard a part of it. A part of current production may, thus remain unsold. Thus, savings constitute a leakage and every supply may not create its own demand. The net result is that there may be unemployment.

2. Savings are not automatically invested

Keynes challenges the assumption that saving is automatically invested. Savings may behoarded for future contingencies.

3. Wrong assumption of interest elasticity

Keynes states that the process of income generation and not the rate of interest provide the equilibrium mechanism between savings and investment.

4. Underemployment equilibrium

As against the full employment equilibrium assumed by Say, the economy may be in underemployment equilibrium.

5. State intervention

According to Say, state intervention brings about unemployment. On the other hand, in reality state intervention is desired to avoid unemployment.

6. Effect of wage cut

According to Say, wage cut is a solution to eliminate unemployment. But, in reality, wage cut is neither possible nor desirable. The effective role of trade unions will prevent wage cut. Besides, when wages are reduced purchasing power is seriously hampered. This worsens the situation. Unemployment according to Keynes, is not due to rigid or high wages but due to deficiency in effective demand.

7. The classical economists believed that money was demanded for transactions and precautionary purposes. They did not recognize the speculative demand for money because money held for speculative purposes related to idle balances.

8. Keynes refuted the Pigovian formulation that a cut in money wage could achieve full employment in the economy. The greatest fallacy in Pigou's analysis was that he extended the argument to the economy which was applicable to a particular industry.

9. This theory assumes closed economy. But no economy is a closed economy today. Every country today is having trade relations with other countries.

10. This theory assumes perfect competition what is existing in practice is imperfect competition and not perfect competition

11. This theory assumes that labour is homogeneous. But labour heterogeneous.

12. The classicists believed in the long-run full employment equilibrium through a self-adjusting process. Keynes had no patience to wait for the long period for believed that "in the long run we are all dead".

CONCLUSION

Thus the classical theory of employment is unrealistic and is incapable solving the present dayeconomic problems of the capitalist world.

IN KEYNESIAN THEORY OF INCOME OUTPUT AND EMPLOYMENT

In Keynesian theory, employment depends upon effective demand. Effective demand results in output. Output creates income. Income provides employment. Since Keynes assumes all these quantities viz. effective demand (ED) output (O) income (Y) and employment (N) equal to each other, he regards employment as function of income.

Effective demand determined by two factors, the aggregate supply function (Z) and the aggregate demand function (D). The supply function depends on physical or technical conditions production which not changes in the short run. Since Keynes assumes aggregate supply function to be stable, he concentrates his entire attention upon the aggregate demand function to fight depression and unemployment. Thus employment depends on aggregate demand which in turn is determined by consumption demand and investment demand.

According to Keynes, employment can be increased by increasing consumption/and/ or investment. Consumption depends on income C (Y) and when income rise, consumption also rises but not as much as income. In other words, as income rises, saving rises. Consumption can be increased by raising the propensity to consume in order to increase income and employment. But the propensity to consume depends upon the psychology the people, their tastes, habits, wants and the social structure which determines the distribution of income. All these

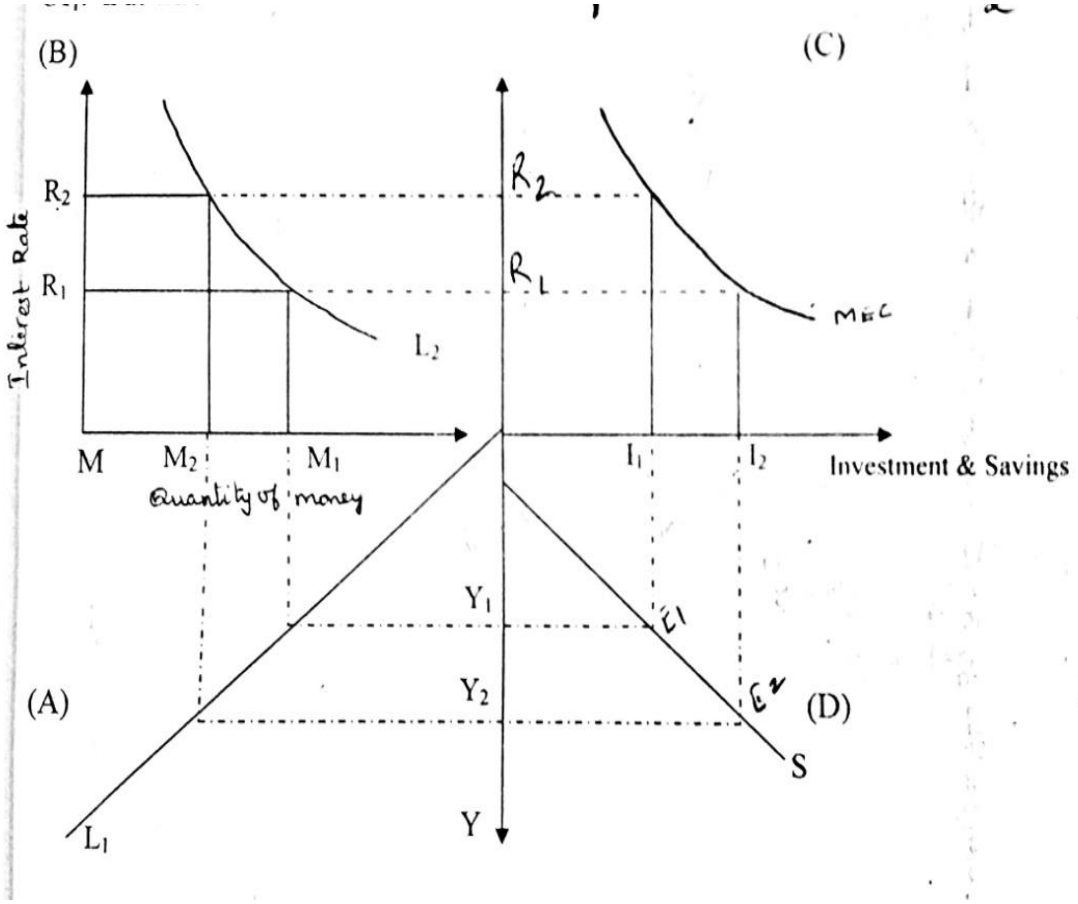
elements remain constant during the short-run. Therefore, the propensity to consume is stable. Employment thus depends on investment and it varies in the same duration as the volume of investment.

Investment, in turn depends on the rate of interest and the marginal efficiency of capital I= f (i.e). Investment can be increased by fall the rate of interest and / or a rise in the MEC. The MEC depends on the supply price of capital assets and their prospective yield. It can be raised when the supply price of capital assets falls or their prospective yield increase. Since the supply price of capital assets is stable in the short-run, it is difficult to lower it. The second determinant of MEC is the prospective yield of capital assets which depends on the expectations of yield on the part of businessmen. It is again a psychological factor which cannot be depended upon to increase the MEC to raise investment. Thus is little scope for increasing investment by raising the MEC.

The other determinant of investment is the rate of interest. Investment and employment can be increased by lowering the rate of interest. The rate of interest in determined by the demand for money and the supply of money. On the demand side is the liquidity preference schedule. The higher the liquidity preference, the higher is the rate of interest that will have to be paid to cash holders to induce them to part with their liquid assets and vice versa. People hold money (M) in cash for 3 motives: transactions, precautionary and speculative. The transactions and precautionary motives are income elastic. Thus the amount held under these two motives (M_1) is a function (L_1) of the level of income (Y) ie., $M_1 = L_1 (Y)$. But the money held for speculative motive (M_2) is a function of the rate of interest (r) ie., $M_2 = L_2 (r)$. The higher the rate of interest, the lower the demand for money, and vice versa. Since LP depends on the psychological attitude to liquidity on the part of speculators with regard to future interest rates, it is not possible to lower the liquidity preference in order to bring down the rate of interest. The other determinant of interest rate is the supply of money which is assumed to be fixed by the monetary, authorities during the short-run.

The relation between interest rate MEC and investment is shown in the following figure; where in Panels A and B the total demand for money is measured along the horizontal axis from M onwards. The transaction (and precautionary) demand is given by the L1 curve at OY_1, and OY_2, level of income in Panel A of the figure. Thus at OY income level, the transactions demand is given by OM_1 and at OY_2 level of income it is OM_2. In Panel B. the L_2 curve represents speculative demand for money as a function of the rate of interest. When the rateof interest MR_2 the speculative demand for money is MM_2. With the fall in the of interest to MR_1 the speculative demand for money increases a MM_1. Panel C shows investment as a function of the rate of interest and the MEC. Given the MEC, when the rate of interest is OR_2, the level of

investment is OI_1. But when the rate of interest falls to OR_1 investment increases to OI_2 .



In the Keynesian analysis, the equilibrium level of employment and income is determined at the point of equality between saving and investment. Saving is a function of income ie., S =f (Y). It is defined as the excess of income over consumption. S = Y-C. And income is equal to consumption plus investment.

Thus Y-C+1

or Y-C = I

Y-C = S

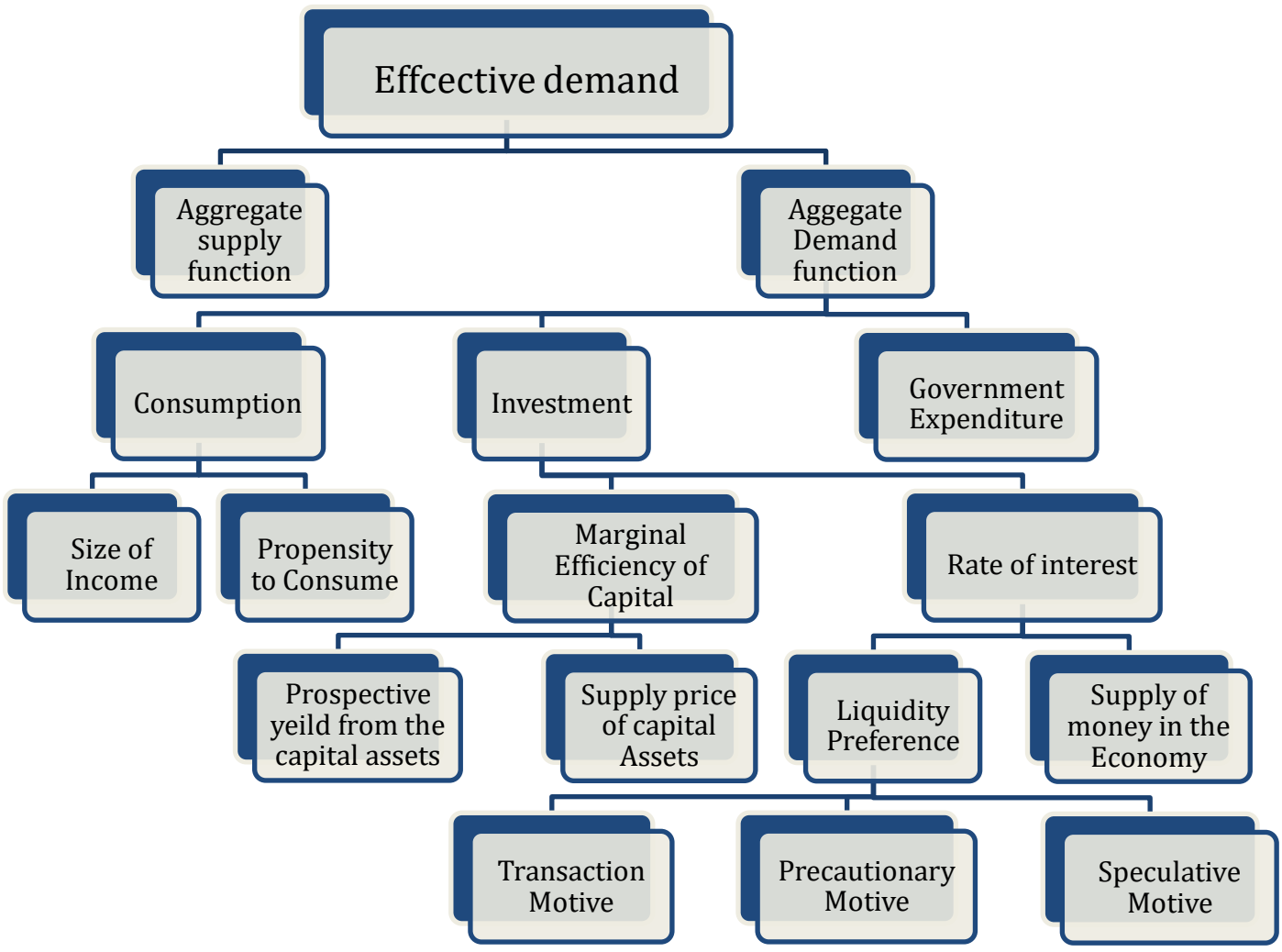
I = S

So the equilibrium level of income is established where saving equals investment. This is shown in Panel D where the horizontal axis from O towards the right represents investment and saving and OY axis represents income. S is the saving curve. The line 1_1,E_1, is the investment curve which touches the S curve at E_1. Thus OY_1,

is the equilibrium level of employment and income. This is the level of underemployment equilibrium, according to Keynes. If OY_2, is assumed to be the full employment level of income then the equality between saving and investment will take place at E_2, where I_2 E_2, investment equals Y_2E_2, saving.

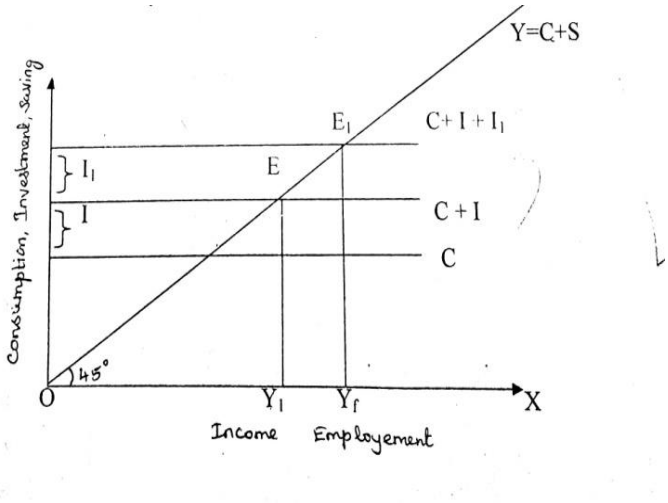
The essence of Keynesian theory of income, output and employment can be shown in the following chart.

Effective Demand = Total output = Total Income = Employment



The Keynesian theory of employment and income is also explained in terms of the equality of aggregate supply (C+S) and aggregate demand C+I. Since unemployment results from the deficiency of aggregate demand, employment and income can be increased by increasing aggregate demand. Assuming the propensity to consume to be stable during the short-run, aggregate demand can be increased by increasing investment. Once investment increases, employment and income increase. Increased income leads to a rise in the demand for consumption goods which leads to further increase in employment and income. Once set in motion, employment and income tend to rise in a cumulative manner through the multiplier process till they reach the equilibrium level. According to Keynes, the equilibrium level of employment will be one of under-employment equilibrium because where income increases consumption also increases but by less than the increase in income. This behavior of the consumption function widens the gap between income and consumption which ordinarily cannot be filled up due to the lack of required investment. The full employment income level can only be established if the volume of investment is increased to fill the income - consumption gap corresponding to full employment.

The Keynesian model of under-employment equilibrium is explained in the following figure.



Income and employment are taken along the horizontal axis and consumption and investmenton the vertical axis. Autonomous investment is taken as a first approximation. C+I is the aggregate demand curve plotted by adding to consumption function C an equal amount of investment at all levels of income. The 45° line is the aggregate supply curve. The economy is inequilibrium at point E where the aggregate demand curve C + 1 intersects the 45° line. This is the point of effective

demand where the equilibrium level of income and employment OY, is determined. This is the level of under-employment equilibrium and not of full employment.
There are no automatic forces that can make the two curves cross at a full employment income level. If it happens to be a full employment level, it will be accidental. Keynes regarded the underemployment equilibrium level as a normal case and the full employment income level as a special case.

Suppose OY is the full employment income level. To reach this level autonomous investment is increased by I_1, so that the C+ I curve shifts upward as C+I+I_1, curve. This is the new aggregate demand curve which intersects the 45° line (the aggregate supply curve) at E_1, the higher point ofeffective demand corresponding to the full employment income level OY_f This also reveals that to get a desired increase in employment and income of Y_1Y_f, it is the multiplier effect of an increase in investment by I_1 (I_2 in Panel C) which leads to an increase in employment and income by Y_1Y_f = (Y_1Y_2 in Panel D) through successive rounds of consumption.

Significance

Keynesian theory of employment is of great practical importance.

1. **State intervention**

The old laissez faire theory of classical economists received the fatal blow from Keynesian concepts which indicated the need for state intervention in need for state intervention in times of unemployment and depression.

2. **Unbalanced budget**

Keynes proved with the help of his theory that a balanced budget was not alwaysthe best policy to adopt on the part of the Government. The budgetary policy of the government according to him should be decided in the light of the economic situation prevailing in the country. He pointed out how in certain circumstances the policy of deficit budgeting was the best and the most appropriate for stepping up the volume of income, output and employment in the economy.

3. **Public works Programme**

Keynes has given a significant place for public works programme in history. All governments of present day take up public works programme to fight depression and unemployment.

4. **Full Employment Policy**

The present day popularity of full employment policy is also to be attributed to Keynes. Todaythere is hardly any Government which does not surer by the objective of full employment. All economies, whether planned or unplanned have come to accept full employment as the final goal of their economic policies.

5. **Monetary and fiscal policies**

Present day monetary policies to control cyclical fluctuations are the denied outcome of the Keynesian theory. To check inflation, he suggested the suppressing of consumption and investment both through monetary and fiscal measures. For this he made a revolutionary suggestion called Deferred Payment or Compulsory savings The scheme was that a compulsory deduction should made from current wages and salaries and deposited in a blocked Saving Account which could not be withdrawn during war. The idea was to cut down purchasing power inthe hands of public to reduce national consumption. The scheme was adopted by the British Government though only to a limited extent and was quite successful In India too, the Government adopted a scheme of compulsory saving with the object of mobilizing resources for development.

6. **National income accounting**

With the popularity of the Keynesian theory, the study of national income received greater significance and added dimension in all countries of the Western world. Social accounting has been given a lot of attention in order to implement the economic policies of the state more efficiently.

Failures and weaknesses of Keynesian Theory (Criticisms)

1. **Keynes does not furnish of a comprehensive treatment of unemployment**

Keynesian system of thought was comprehensive in the sense that it could and coped up with inflationary and deflationary situation both. But it was not comprehensive in the sense that it fails to provide us with an overall solution of the problem of unemployment. Unemployment was not merely cyclical. There were other varieties of unemployment such as technological or even frictional unemployment. Prof.Paul Sweezy has pointed out, Keynes failed to tackle the technological unemployment.

2. Keynesian Economics is based on the assumption of perfect competition

Like the old classical economics, the Keynesian theory is based on the assumption of perfect competition which is a highly unrealistic assumption.

3. **There is no genuine and determinable functional relationship between effective demand and the volume of employment**

Critics pointed out that although Keynes assumed the existence of a functional relationship between effective demand and the volume of employment. Yet he never attempted to prove it byoffering the statistical evidence in support of his contention. Prof Hazlitt remarks that there is no good reason to assume that functional relationship exists between effective demand and the volume employment.

4. The wholly aggregative character of Keynesian Economics is open objection

One of the characteristicsof Keynesian Economics is that it is aggregative in character. Some economists have severely criticized Keynes on the ground that his theory is concluded entirely in aggregative concepts such as total consumption, total investment, total income and total output. These aggregative concepts misleading in the sense that they fail to deal with the fundamental economic problems of the individual.

5. **Excessive emphasis on inducement to invest**

The theory emphasizes much on investment and factors related inducement to invest. It has failed to consider the importance of consumption the theory taken it as stable over the short period. Keynes falls back inducement to invest as a determinant of employment.

6. Keynes concept of consumption function has been subjected to scathing criticism

Hazlitt's criticizes on the following grounds.

1. The dictionary meaning of the word propensity is "a natural or habitual inclination or tendency". But Keynes does not deal with an inclination tendency but with a mathematical relationship. He deals with the fraction or percentage of the income that the community in fact spends o consumption goods.
2. It is cast purely in quantitative terms, whereas every civilized human being conceives his actual consumption as much in qualitative terms.

3. The actual experience and statistical evidence fail to support Keynes consumption function.

7. **Keynes theory ignores the long period**

Keynes theory is short period in character. Keynes himself once remarked "In the long run, we are all dead".

8. **Keynes theory is not general**

Keynes theory is not applicable anywhere and everywhere. Its application is limited at best to industrially developed and relatively rich countries like the U.K. and the USA.

9. Keynes omitted to deal with Accelerator

Accelerator and multiplier are parallel concepts. He emphasized multiplier to study the impact of investment on income, but failed to note the impact of consumption an investment through the acceleration principle.

10. **It is only a depressionary Economics**

Keynes created his new theory on the depressionary period to offer something as solution to relieve the economics from the morass of depression

11. It assumes closed economy

Keynes theory assumes a closed economy without any external relationship. Imports and exports are presumed to be non-existent. Perhaps this assumption would have been made to simplify the analysis. But the impact of international trade and the consequent favourable balance on the employment and income of the economy cannot be neglected.

12. The theory is comparatively static

The theory is criticized as static and not dynamic in character. It does not take into consideration the time lag which has a significant role to play in all economic activities.

Keynes theory of employment contrasted with classical theory of employment

Firstly as opposed to the classical insistence upon long-term equilibrium, Keynes attached greater importance to the short term equilibrium.

Secondly, as opposed to the lavish praises bestowed by the classists on saving thrift and frugality, Keynes advocated **spending** and thriftlessness during depressions. For Keynes, spending was a virtue and **saving** was an unmitigated evil. Keynes launched a vigorous attack on thriftiness and saving both Treatise as well as in his General theory on the ground that they result curtailment of effective aggregate demand and hence of employment.

Thirdly, the classical economists were convinced of the favourable effects of **wage cutting** on the volume of employment and in actual practice advocated wage cutting as a **curative for unemployment**. Keynesian Economics has however, brought about a transformation in this context Economic theorists economic practioners are not now so easily convinced of the favourable effects of wage-cutting on employment.

Fourthly, as against the classical assumption of the existence of **full employment.** Keynes agreed that in actual society there could never be employment but something **less than full employment**. He called it underemployment equilibrium.

Fifthly, another sense in which Keynes diverged from the classicists his inclusion of dynamic elements in his theory particularly in the for expectations which play such an important role inthe determination of marginal efficiency of capital.

Sixthly, Keynes deviated from classicism by giving or imparting **macro tinge** to the economic theory. The old traditional classical analysis had been cast purely in **micro terms**.

Seventhly, Keynes theory was **general theory** not a **special theory**. In other words Keynes theory was applicable to all sorts of situations full employment less than full employment more than full employment. As against this, the classical theory was applicable **only to the full employment situation.**

Eighthly, against the classicists succeeded linking the **general theory with theory of money**.

Ninthly, according classical economists interest was reward for **waiting, abstinence or time preference** rate of interest determined the interaction of saving and

investment. As against this , Keynes believed that the rate of interest was determined by the interaction **liquidity preference** and the supply of money.

Tenthly, classical economists favoured **balanced budget**. As against Keynes believed that budgeting **should be adjusted to the requirements** of the economy. For eg. If the level output and employment was low and it was necessary to raise it , the government should adopt a deficient budget (not a balanced budget).

Eleventh, the classical economists believed that whenever **supply of money was increased**, the general **price level would go up**. As against this view, Keynes believed that so long as there was **no full employment** in the economy. Any increase in money supply would **go to increase output alone** and hence there would be no effect on the price level.

Lastly, unlike the classists, Keynes tried to make his theory serve as **guide to the government** in the execution of economic policies.

It can be conclude that the General theory is simply classical economics further developed or embroidered and not a genuine break with the past.

Equilibrium of the economy in terms of Aggregate Demand Function and Aggregate Supply Function
(or)
Determination of Effective Demand

MEANING

In ordinary parlance demand means desire. It becomes effective when income is spent in buying consumption goods and investment goods. Keynes used the term effective demand to denote, the total demand for goods and services a various levels of employment. Different levels of employment represent different levels of aggregate demand. But there can be a level of employment where aggregate demand equals aggregate supply. This is the point of effective demand Thus according to Keynes, the level of employment is determined by effective demand which in turn is determined by aggregate demand price and aggregate supply price.

Aggregate demand price is the amount of money which the entrepreneurs expect to get by selling the output produced by the number of men employed.In other words, it refers to the expected revenue from the sale of output produced as a

particular level of employment. Different aggregate demand price relate different levels of employment in the economy.

Aggregate Demand Function

A statement showing the various aggregate demand prices at differ levels of employment is called the aggregate demand price schedule or aggregate demand function.

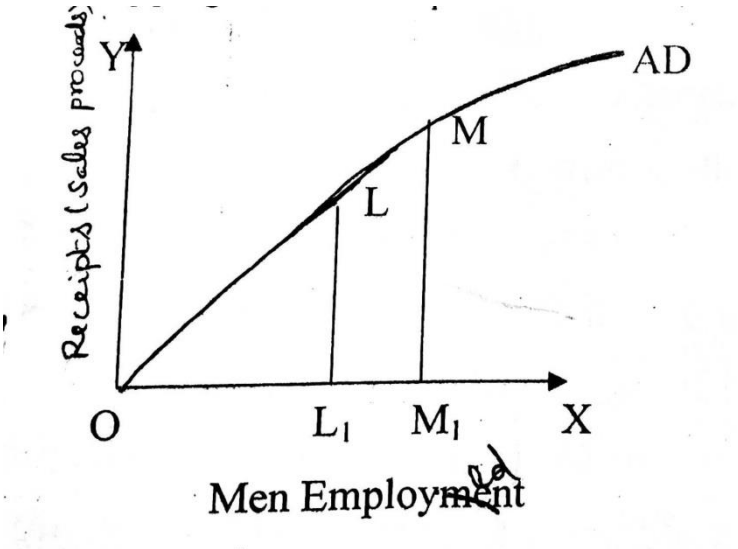
The following table shows the aggregate demand schedule.

Aggregate Demand Schedule

Level of Employment (N) in (lakhs)	Aggregate Demand Price (D) Rs. Crore
20	230
25	240
30	250
35	260
40	270
45	280
50	290

The table reveals that with the increase in the level of employment, proceeds expected (ADP) rise and at lower levels of employment decline. When 45 lakh people are provided employment, the aggregate demand price is Rs.280 crores and when 25 lakh people are provided jobs, it is Rs.240 crores. According to Keynes, the aggregate demand function is an increasing function of the level of employment and is expressed as D=f(N) where D is the proceeds which entrepreneurs expect from the employment of N workers.

The aggregate demand curve can be drawn on the basis of the above schedule. It slopes upward from left to right because as the level of employment increases, aggregate demand price also rises, as shown as AD curve in the figure.



When employment is increased from OL_1, to OM_1, the expected sale proceeds increase from LL_1, to MM_1.

Aggregate supply price

The minimum expected proceeds arising from the sale of the output resulting from a given amount of employment are called aggregate supply price of that output.

Aggregate supply function or Aggregate supply price schedule

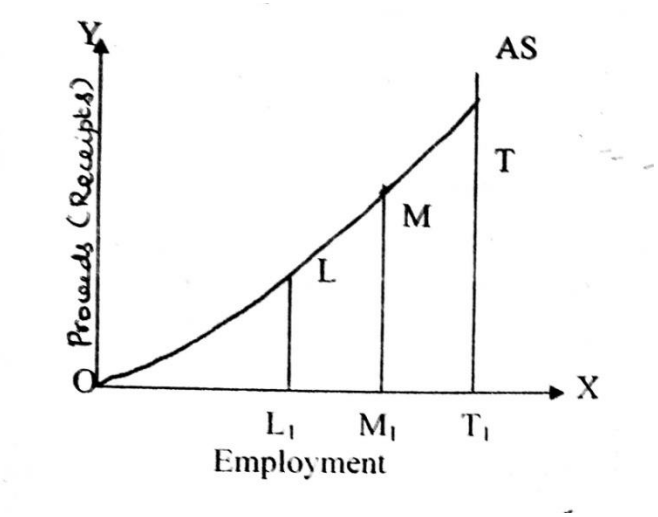
It refers to various minimum amounts of proceeds which the entrepreneurs must receive at various levels of employment.

The following table shows the aggregate supply schedule

Aggregate supply schedule

Level of Employment (N) in (lakhs)	Aggregate supply Price (Z) Rs.crore
20	215
25	230
30	245
35	260
40	275
40	290
40	305

The above table reveals that the aggregate supply price rises with increase in the level of employment. If the entrepreneurs are to provide employment to 20 lakh workers, they must receive Rs.215 crores from the sale of the output produced by them. It is only when they expect to receive the minimum amounts of proceeds (Rs.230, Rs.245 and Rs.260 crores) that they will provide employment to more workers (25 lakhs, 30 lakhs and 35 lakhs respectively). But when the economy reaches the level of full employment (at 40 lakh workers) & aggregate supply price (Rs.275, Rs.290 and Rs.305 crores) continues to increase but there is no further increase in employment. According to Keynes, aggregate supply price is an increasing function of the level of employment. As the amount of proceeds increases, greater size of employment will be offered which will be shown in the following diagram



When the sale-proceeds increase form LL_1, To MM_1, the size of employment offered increases from OL_1, to OM_1, Aggregate supply curve rises gently in the early stages only. In the later stages, it rises steeply. In other words in the initial stages as the cost of production does not increase fast, employment increases at a faster rate. But later on, as the cost of production increases fast, employment increases slowly. After a particular point, since the cost of production will be very high, any increase aggregate demand will not increase aggregate supply. In other words, any increase in aggregate demand will not result in increase in output and employment. Therefore, after reaching a particular point, aggregate supply curve becomes a vertical straight line parallel to Y axis. When the sale-proceeds increase to TT_1, employment offered is

OT_1, beyond this, any increase in aggregate demand will not increase employment.

Determination of effective demand

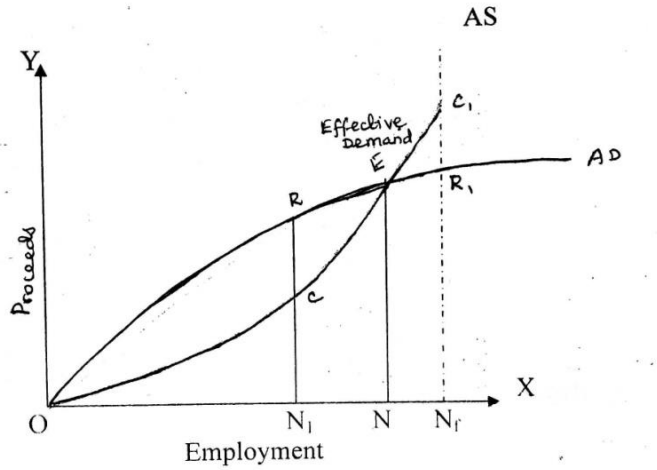
The level of employment is determined at the point when the **aggregate demand price equals aggregate supply price.** In other words, it is the point where what the entrepreneurs expect to receive equals what they must receive and thus profits are maximized This point is called the effective demand and here the entrepreneurs each normal profits. The following table explains the determination of the point of effective demand

Schedule of Aggregate Demand and Aggregate Supply Prices

Level of Employment (N) (in lakhs)	Aggregate supply price (Rs. Crores)	Aggregate demand price (D) (Rs.crores)	
		Old	New
20	215	230	235
25	230	240	245
30	245	250	255
35	260	260	265
40	275	270	275
40	290	280	285
40	305	290	295

The above table shows that so long as the aggregate demand price is higher than the aggregate supply price. It is profitable for the entrepreneurs to employ more workers when the entrepreneurs expect to receive Rs.230 crores, Rs. crores and Rs.250 crores than the proceeds necessary (ASP) amounting to Rs. 215 crores, Rs 230 crores and Rs.245 crores, they will provide increasing employment to 20 lakh, 25 lakh and 30 lakh workers respectively. But when the proceeds necessary and proceeds expected equal to Rs 260 crores, the level of employment rises to 35 lakh. This is the point of effective demand. If they assume the level of full employment to be 40 lakh workers in the economy, it will necessitate drawing up of a new aggregate demand price schedule as shown in the last column of the above table As a result the new point of effective demand is 40 lakh workers because both the ADP and ASP equal to Rs.275 cores. Beyond this point there is no charge in the level of employment which is steady at 40 lakh workers.

The following figure illustrates the determination of effective demand where AD is the aggregate demand function and AS is the aggregate supply function.

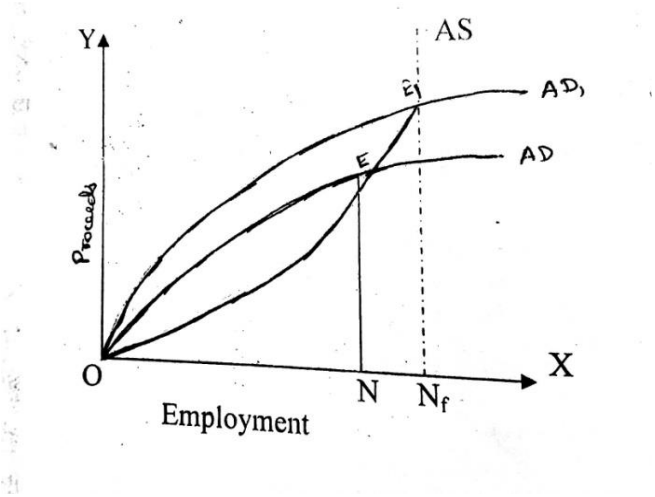


The horizontal axis measures the level of employment in the economy and the vertical axis; the proceeds (expected) revenue and the proceeds necessary (cost). The two curves AD and AS interest each other at point E. This is effective demand where ON workers are employed. At this point the entrepreneur's expectations of profits are maximized. At any point other than this, the entrepreneurs will either incur losses or even subnormal profits. At ON_1, level of employment the proceeds expected (Revenue) are more than the proceeds necessary (Costs) ie., $RN_1 > CN_1$. This indicates that it is profitable for the entrepreneurs to provide increasing employment to workers till ON level is reached where the proceeds expected (ADP) and proceeds necessary (ASP) equal at point E. It would not be however profitable for the entrepreneurs to increase employment beyond this to N_f level because the proceeds necessary (Costs) exceed the proceeds expected (Revenue) is $C_1 N_f > R_1 N_f$, and they incur losses. Thus E the point of effective demand determines the actual level of employment in the economy which is of under employment equilibrium.

Of the two determinants of effective demand, Keynes regards the ASF to be given because it depends on the technical condition of production, the availability of raw materials, machines etc., which do not change in the short run its therefore, the aggregate demand function which plays a vital role in determining the level employment in the economy. According to Keynes, the aggregate function depends on the Consumption function and investment function . The cause of unemployment may be a fall in either consumption expenditure or investment expenditure or both.

The level of employment can be raised increasing either consumption expenditure or investment expenditure or both. Thus, it is the aggregate demand function which is the **"effective element in the principle of effective demand".**

It follows that to raise the economy to the level of full employment requires the raising of the point of effective demand by increasing the aggregate demand. This is illustrated in the following figure



In the above figure, 'E is the point of effective demand which determines ON level of employment. If ON_f is the level of full employment for the economy, it requires the raising of the point of effective demand. This is possible by raising the aggregate demand curve to AD_1 where it intersects the aggregate supple curve AS at E_1. This is the optimum level of employment ON_f to the economy. If the aggregate demand function is raised beyond this point the economy will experience inflation because all the existing resources are fully employed and their supply cannot be increased during the short run as is apparent from the vertical portion of the AS curve in the above figure.

Importance of the Concept effective demand

1. **Important factor that determines employment**

Effective demand determines the level of employment. By raising effective demand employment level can be increased.

2. **Reason, solution for unemployment**

Effective demand concept provides the explanation and solution for unemployment Deficiency in effective demand is the cause and raising the point of effective demand is the solution for solving unemployment problem.

3. **To falsify Says' Law of Market**

To J.B Say every supply creates its own demand; there is no overproduction and unemployment. This is based on the assumption that all income is spent on consumption. But Keynes believed that there is a gap between income and consumption leading to deficiency in effective demand resulting in overproduction and unemployment in the economy .

4. **Importance of investment**

Keynes emphasized the importance of investment. He believed that whatever income received by the individuals is not spent on consumption. Thus a gap arises between income and consumption leading to deficiency in effective demand. This gap must be filled up only by investment

5. **Wage cut -not a remedy for unemployment**

When wages are reduced purchasing power will be reduced which will reduce the demand for the commodities, leading to reduction in investment and employment. Hence wage cut will aggravate the problem of unemployment.

The theory of effective demand may be regarded as a systematic explanation of how and why it is that the level of output and employment often fluctuates in a capitalist economy.

UNIT IV

CONSUMPTION FUNCTION

The propensity of consume or the consumption function expresses a relationship between two quantities income and consumption. Actually it is called the schedule of the propensity to consume and taken in the schedule sense, it indicates the proportion of the aggregate income that shall be spent on consumption at the various levels of income.

The following table may be considered to be the schedule of the propensity to consume at different levels of aggregate income.

Income (Y) In Crore Of Rs.	Consumption (C) Crore of Rs.
100	70
120	80
140	90
160	100
180	105
200	110

In short, propensity to consume or the consumption function shows how the consumption expenditure change as the income varies. If consumption is represented by C and income by Y then the propensity to consume C f(Y). In other words, it can be said that consumption is a function indicates a functional relationship between the two aggregates viz., total consumption expenditure and national income.

Difference between consumption and the propensity to consume or consumption function.

Consumption means the total expenditure on consumption that is being incurred out of the total income of a community. For if a country, for e.g with a total income of Rs.1000 Crores spends out of if Rs. 750 Crores represents its consumption.

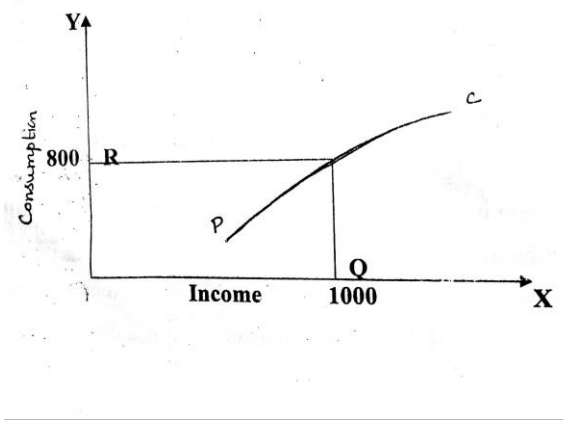
If we draw up a consumption schedule indicating the changes in consumption consequent upon the changes in income, then that schedule is called the propensity

to consume or the consumption function. Thus consumption means the amount spent on consumption at a given level of income while consumption function or the propensity to consume implies the whole of the schedule showing consumption expenditure at various levels of income.

Average propensity to consume: (APC)

The concept of APC indicates the ratio of aggregate consumption expenditure to aggregate income, i.e., it is the ratio of consumption to income, and is expressed as APC= C/Y.

Example: If the aggregate income of a community is Rs 1000 Crores, and the expenditure on consumption is Rs.800 Crores, then the APC is 800/1000 or 8/10 or 80 percent. It implies that the community spent 80 percent of its income on consumption. Thus the value of the APC for any level of income can be found by dividing consumption expenditure by the aggregate income



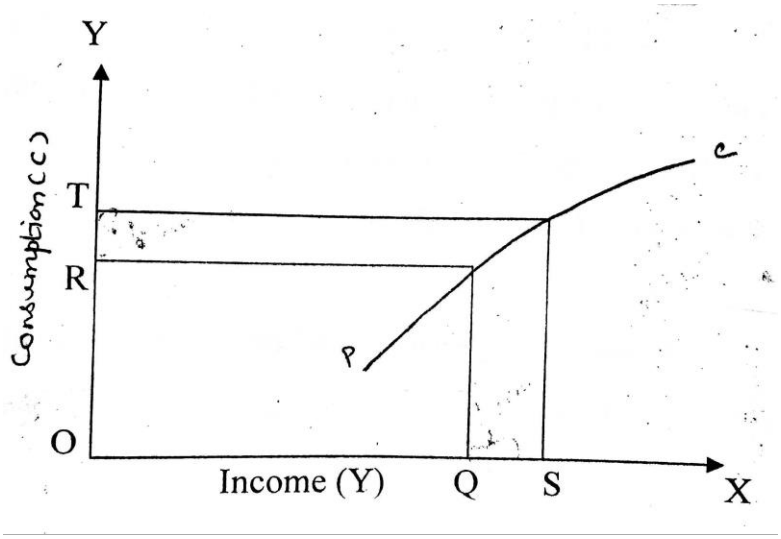
OX represents income (Y) and OY represents consumption (C). The curve PC represents the propensity to consume. OQ= Rs. 1000 Crores and OR=Rs. 800 Crores.

At the aggregate income of Rs 1000 Crores the consumption expenditure is Rs 800 Crores. The APC is: 800/1000 (or) 8/10 (or) 80%.

Any other point may be taken on the curve PC. It will indicate income on the OX axis and consumption on the OY axis and the APC can be easily ascertained.

Marginal Propensity to consume

It may be defined as the ratio of the change in consumption to the change in income or the rate of change in the APC as income changes. MPC can be found by dividing an increment (or decrement) in income. Thus, the formula is ΔC / ΔY. The symbol Δ indicates the change in income or consumption. If for eg.the aggregate income increases by Rs.10 Crores and the consumption expenditure by Rs.6 Crores, then the MPC according to this formula is 6 /10=0.6.



In this diagram, while income increases by Rs.10 Crores, the expenditures on consumption increase by Rs. 6 Crores. In other words, an increase of Rs.10 Crores in income (Y) is followed by an increase of Rs.6 Crores in consumption expenditure (C). Hence the MPC is 6/10=0.6.

Characteristic of MPC

1. The MPC is less than the APC .
2. The MPC is usually positive but it is less than one.
3. The MPC goes on diminishing as the level of income increase.

MPC and MPS

Income = Consumption + Saving

MPC + MPS = 1

MPS = 1-MPC

MPS =1-ΔC/ΔY

APC and MPC

With the increase in income the APC and MPC decline. But, the declines MPC is more than that of the APC.

MPC in rich and poor communities.

MPC is higher in the case of poor communities and lower in rich communities. The reason for low MPC in rich communities is that in their case most of their basic needs would have already been fulfilled. But in the case poor economies, when income increases they tend to spend more of the incremental income on basic needs.

Keynes Psychological law of Consumption

Keynes psychological law of consumption is a statement of psychological tendencies of the consumers of the community with respect to changes in income and the resultant changes in consumption. It is the basis of modern analysis of income and consumption. Therefore, it is regarded as the **Fundamental law of consumption.**

Three related propositions

1. Increase in Consumption

When the aggregate income increases, aggregate consumption expenditure also increases but by a somewhat smaller amount. The reason is that as income increases, consumers wants get more and more satisfied with the result that it is no longer necessary to spend the additional increase in income on consumption. The

expenditure on consumption will definitely increase but not in the same proportion in which the income increases.

2. Increase in Savings

This proportion flows from the first proposition. It is evident that when the entire increase in income is not spent on consumption, a part of that increased income is saved. It is a common phenomenon that when the income of a person increases, he uses a part of the increased income for the better satisfaction of his older wants and part of it is devoted for the satisfaction of new wants. The balance of the increased income is saved. Normally, everyone likes to save because that saving will help him to tide over his difficulties in the future. Moreover, he can add to his income by investing his saving in some securities. As such, saving and spending go side by side.

3. Comparison with the Previous level

When income increases both consumption and savings increase, compared to the previous level. It is not possible for the person to spend less when his income goes up. Unless he happens to be a confirmed miser. A normal person will certainly increase his consumption expenditure, when his income goes up. The reason is that he would like to enjoy greater amenities and comforts of life when his income increases. Consequently, his spending and saving both go up when his income increases.

The first proposition is the most important and may be considered to be the core of Keynes Psychological law of consumption, what the law stresses is the **tendency of the people to fail to spend on consumption items the full amount of an increment of income.**

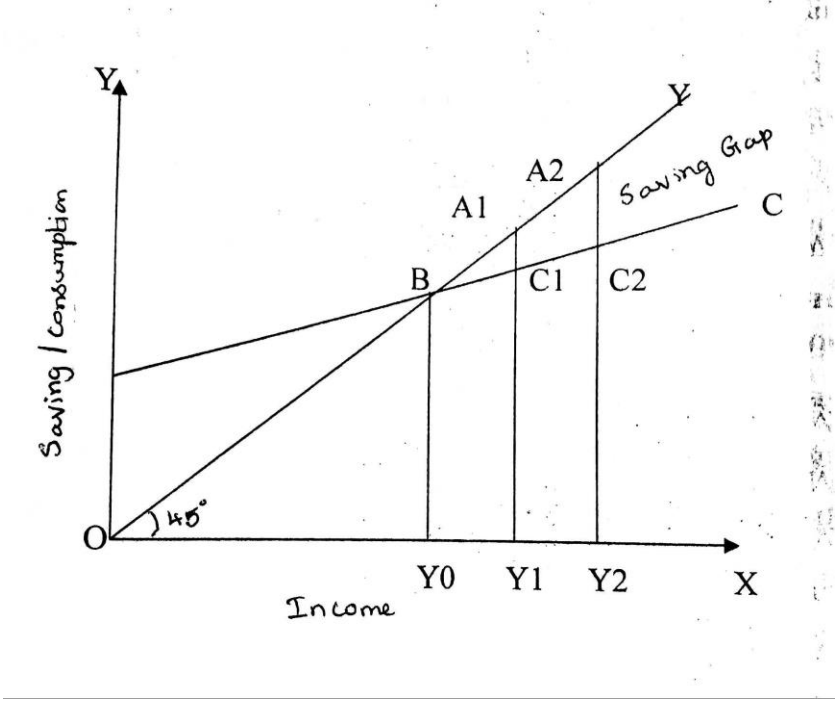
An illustration of the law would be found in the table below.

in crores of Rs.

Income (Y)	Consumption (C)
100	**70**
120	**80**
140	**90**
160	**100**
180	**105**
200	**110**

It is clear from the above table that consumption expenditure does not increase in the same proportion in which the income increases. To start with, the income increases by Rs. 20 crores (from Rs.100 crores to Rs.120 crores) but the consumption expenditure increases by Rs. 10 crores (i.e from Rs 70 crores to Rs.80 crores). Again when the income increases from Rs.160 crores to Rs.180 crores (i.e by Rs. 20 crores) the consumption expenditure increases only from Rs.100 crores to Rs. 105 crores (i.e by Rs.5 crores). Thus, the increase in consumption expenditure fails to keep pace with the increase in aggregate income. This tendency is so deep-rooted in peoples' habits, customs, traditions and psychological set up that it is difficult to change or alter it without effecting structural changes in society.

Diagrammatically, the three propositions are explained in the following figure.



Here, income is measured horizontally and consumption and saving are measured on the vertical axis, C is the consumption function curve and 45° lines represents income (OY).

Proposition 1:

When income increases from OY_0 to OY_1 consumption also increases form BY_0 to C_1Y_1 but the increase in consumption is less than the increase in income i.e $C_1Y_1 < A_1Y_1 = OY_1$ by A_1C_1.

Proposition 2:

When income increases to OY_1 and OY_2, it is divided in some proposition between consumption $C_1\ Y_1$ and C_2Y_2 and saving A_1C_1 and A_2C_2 respectively.

Proposition 3:

Increased income to OY_1 and OY_2 lead to increased consumption $C_2\ Y_2 > C_1\ Y_1$ and increased saving $A_2\ C_2 > A_1\ C_1$ than previous levels.

Assumption of Keynes Psychological law of consumption

1. The present psychological - institutional complex remains constant

Keynes assumes that the existing psychological - institutional complex does not undergo any change. In other words, the assumption is that consumption depends upon income alone and that the institutional and psychological factors such as income distribution, price level, rate of population growth, tastes, fashion, habits etc., of the people remain constant

2. The circumstances should remain normal

The second assumption of this law is that there exist normal circumstances in the country and that there are no abnormal conditions prevalent in the economy. Such as war, revolution, political upheavals, hyper-inflation etc., under abnormal condition, even the most fundamental laws of Economics undergo changes. Thus this law will hold good only when normal conditions prevail in the economy

3. The country is having rich prosperous capitalistic economy based upon laissez faire

The third assumption is that the country is rich, prosperous and follow policy of laissez-faire. The law shall have little or no value in a poor community. The reason is obvious. In a poor community, there is no question of making choice between consumption and saving. In such a community, the people have several unsatisfied wants which they would like to satisfy whenever they come across any increment in their income. Sometimes, the entire increase in income may be spent on consumption, thereby impairing Keynes psychological law of consumption. Keynes law is fully applicable to the low consumption and high saving economies of Great Britain and the USA.

Implications of Keynes law or importance of the consumption function

1. **Invalidates Say's law:**

Say's law states that supply creates its own demand. Therefore, there cannot be general overproduction and general unemployment. Keynes's psychological law validates Say's law because as income increases consumption also increases but smaller amount. In other words, all that is produced (Income) is not taken off the market (spent) as income increases. Thus supply fails to create its own demand. Rather it exceeds demand and leads to general overproduction and glut of commodities in the market. As a result, producers stop production and there is mass unemployment

2. **Need for state intervention:**

The Psychological law highlights the need for state intervention. Say's law is based on the existence of laissez faire policy. Consumption does not increase by the full increment of income and consequently there is general overproduction and mass unemployment. The necessity of state intervention arises in the economy to avert general overproduction and unemployment through public policy.

3. **Crucial importance of investment:**

Keynes Psychological law stresses the vital point that people fail to spend on consumption the full increment of income. This tendency creates a gap between income and consumption which can only be filled by either increased investment or consumption. If either of them fails to rise, output and employment will fail. Since the consumption function is stable in the short run, the gap between income and consumption can only be filled by an increase in investment. Thus the Psychological law emphasizes the crucial role of investment in Keynes's theory.

4. **Existence of underemployment equilibrium:**

The point of effective demand which determines the equilibrium level of employment is not of full employment but of under employment because Consumers do not spend the full increment of their income on consumption and

there remains a deficiency in aggregate demand. Full employment equlibrium level can be reached it the state increases investment to match the gap between income and consumption.

5. **Declining tendency of the marginal efficiency of capital.**

When income increases and consumption does not increases to the same level. There a fall in demand for consumer goods. This results in glut of commodities in the market. The producer will reduce the production which will in turn bring a decline in the demand for capital goods and hence in the expected of profit and business expectations. It implies a decline in the marginal efficiency of capital.

6. **Danger of permanent over saving or under investment gap:**

Keynes's Psychological law points out that there is always a danger of an over saving or under investment gap appearing in the capitalist economy because as people become rich, the gap between income and consumption widens. This long run tendency of increase in saving and fall in investment as characterized as secular stagnation. When people are rich, the propensity to consume is low and they save more. This implies low demand which leads to decline in investment. Thus the tendency is for secular stagnation in the economy.

7. **Unique nature of income propagation:**

The fact that the entire increased income is not spent on consumption explains the multiplier theory. The multiplier theory or the process of income propagation tells that when an initial injection of investment is made in the economy, it leads to smaller successive increments of income. This is due to the fact that people do not spend their full increment of income on consumption. In fact, the value of multiplier is derived from MPC i.e.,

Multiplier = 1-1/MPC.

The higher the MPC, the higher the value of multiplier and vice versa.

8. Explanation of the turning points of the business cycles

Before the economy reaches the full employment level, the down turn starts because people fail to spend the full increment of this income on consumption. This leads to full in demand, overproduction, unemployment and decline in the marginal efficiency of capital.

The upturn in the economy starts before it reaches the stage of complete depression because when income falls, consumption also falls but by less than the fall in income. People continue to buy consumer goods even when their income falls, because fall in consumption is less than the fall in income.

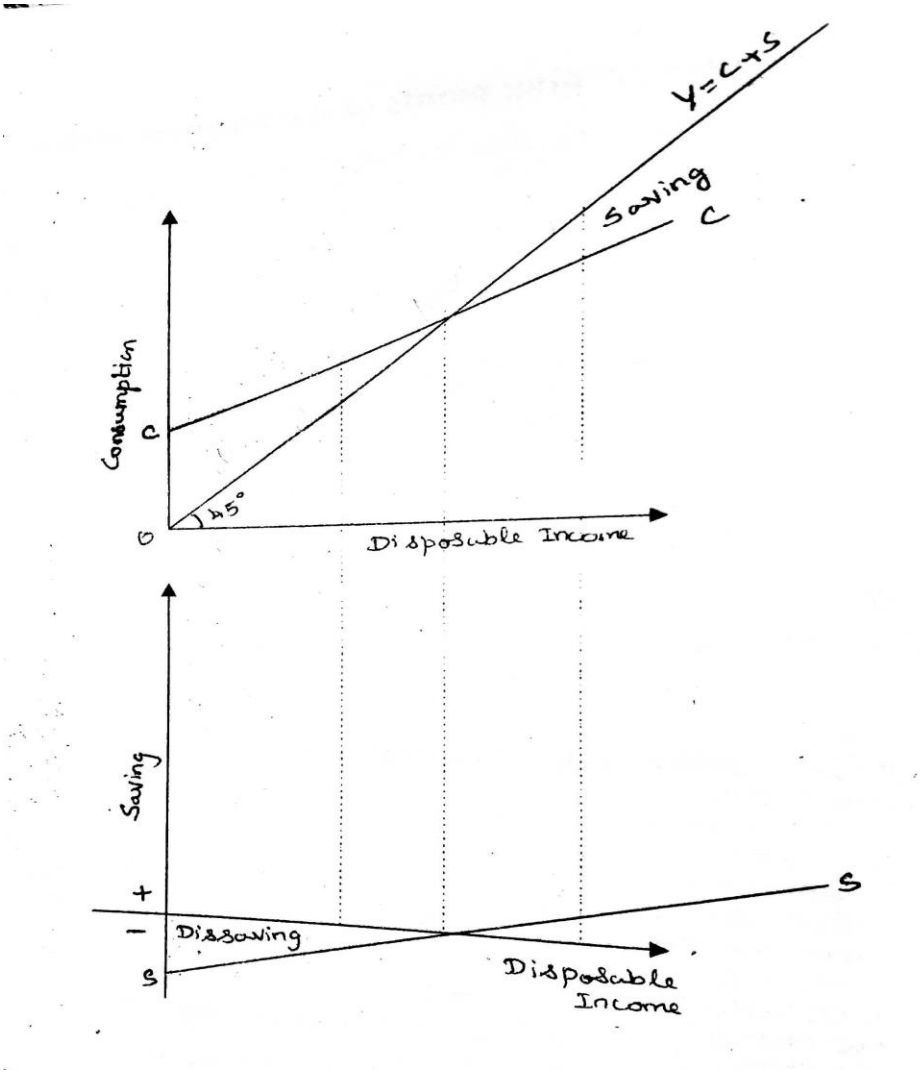
Practical utility and theoretical importance of the concept, consumption function:

Practical utility (or) Practical importance (or) Significance refers importance of consumption function (or) implications of Keynes Psychological Law of consumption.

Theoretical importance of the consumption function may be explained by its use in deriving saving function,

Saving takes place only when and after people have attained what they consider as satisfactory standard of living. Until then they will probably raise this standards by borrowing or by disposing their properties. Their capacity to make saving is decided by their income levels. The proportion of their income saved tends to rise as income rises.

The saving function is the twin of the consumption function. This is evident from the fact that what remains after consumption, at a given level of income, is saving. Thus the saving function can be derived from the consumption function, as shown in the following figure.



The upper part of the figure illustrates the consumption function. At zero income, consumption is OC and it increases as income increases, but at a more rapid rate. That is, the consumption expenditure is greater than the income created. Thus there is dissaving. After the breakeven point consumption is less than income. Thus there is saving. The difference between consumption and income refers to the state of dissaving, if consumption is higher than income and that of saving if consumption is less than income. By marking these differences, we may draw the saving function curve. This is illustrated in the lower part of the figure.

Criticisms

Consumption function is a significant contribution of Keynes with practical and theoretical significance. Yet there have been several criticisms as stated below.

1. **A simple truism:**

According to Hazlitt this is a simple truism. He says that Keynes has committed a double error viz.,

a) Giving it a precision that it does not have and

b) Making a false theory on its basis

2. **Unrealistic concept:**

Hazlitt has called it an unrealistic concept, an illusion, and a fraud which has been given undue importance in economic analysis

3. **Vagueness:**

Propensity is a tendency which can not be stated precisely

4. **Historically wrong:**

Hazlitt has shown that during the post war period, consumption has increased more than income and during the period of 1944 - 1955 the savings declined inspite of increase in income.

5. **Consumption function remains constant in the long run:**

Prof. Kuznets has shown that consumption function changes in the same proportion as the change in income. Critics point out that there has been no distinction between short run and long run consumption function. Thus, the validity of the concept of consumption function becomes questionable.

Measure to raise the propensity to consume:

The propensity to consume or the consumption function is stable in the short period on account of certain psychological and institutional factors. But, in the long

run it is quite possible to alter the propensity to consume in the upward direction for the purpose of promoting full employment. The following measures have been suggested for raising the propensity to consume in the long period

1. **Income redistribution:**

Redistribution of income in favour of the poor have been suggested of the methods for raising propensity to consume. The propensity to consume of the poorer classes is higher than that of the richer classes and if the national income is distributed in their favour, the propensity to consume, as a whole can register a rise. The richer classes generally have a higher propensity to save and a smaller propensity to consume. Any transference of purchasing power from them would surely raise the propensity to consume.

2. **Wage policy:**

As an instrument of rising the propensity to consume may be considered in two periods.

1. Short period and

2. Long period.

In the short period wage policy may not be able to raise the consumption function itself although there may be an increase in the amount of consumption expenditure, through higher money wages. But raising the money wages without an accompanying increase in labour productivity may harm the workers more than benefit them. Any such attempt would lead directly to unemployment of workers. Since labour productivity cannot increase in the short period, therefore any attempt to push up money, wages in the short period would be followed by disastrous consequences for the workers. In the long period, the object of wage policy should be to raise the consumption schedule itself by effecting a transfer of income from non wage groups to wage group through such fiscal measures as progressive taxation etc.,

3. Social Security:

A well **desisted** system at social security can also be an instrument for raising the propensity to consume. At a time of depression, when investment decline the consumption expenditure also decreases, thereby lowering the propensity to consume. If however there is a comprehensive system of social security in force in the country, it shall help to check the decline in consumption expenditure.

The giving of doles and unemployment allowances to the unemployed workers during the Great Depression in some Western Countries, helped to sustain consumption expenditure and checked the further depending of the depression.

4. Credit facilities

Cheap and easy credit facilities help in shifting the consumption function upward. When loans are easily and cheaply available to the people, they buy more durable consumer goods like Scooters, Television, Refrigerators, etc., This tends to raise the propensity to consume. To purchase these things on installment basis or on hire- purchase system produces the same effect. Thus credit facilities in various ways help raise the propensity consume of durable consumer goods.

5. Advertisement:

It is one of the most significant ways to raise the propensity to consume in modern times. Advertisement and propaganda through the various media of radio television, cinema, newspaper etc., make the consumers familiar with the uses of products. The consumers are attracted toward them and they tend to buy them. This raises the propensity to consume.

6. Development of the means of transport:

Well developed means of transport also tend to shift the consumption function upward. The movement of goods from the manufacturing centres to the different part of the country becomes easy. The size of the market expands. The price may also fall due to the reduction of transport costs. Things are available to the people in their respective towns. All this has the tendency to raise the consumption function.

7. Urbanization

Urbanization helps raise the propensity to consume. When urbanization takes place, people move from the rural to the urban areas. They are examoured by new articles and influenced by the demonstration effect. This tends to shift the consumption function upward. Thus the state should follow the policy of deliberate urbanization for the purpose of raising the consumption function.

Factors determining consumption function

The factors determining consumption function are classified as,

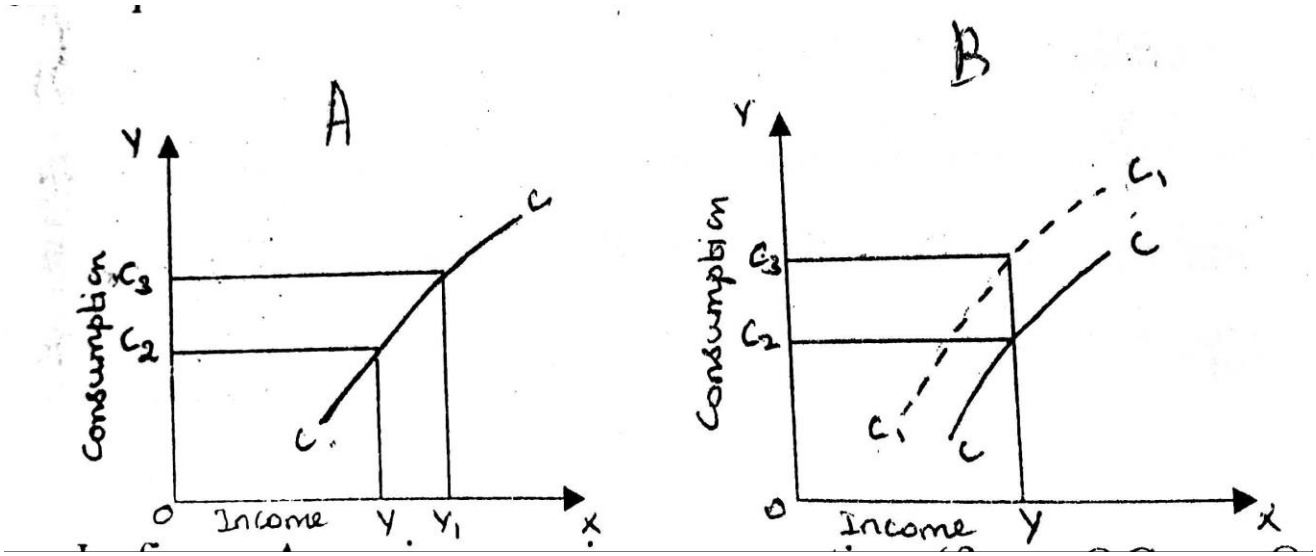
a) Objective factors or Exogenous factors

b) Subjective factors or Endogenous factors

a) Objective factors or Exogenous factors

1. **Money income**

The income level is a major determinant of consumption level. Generally both income and consumption go together. As income increases, consumption also increases and vice versa. The following figures distinguish between increase in consumption due to increase in income and increase in consumption function.



In figure A, an increase in consumption (from OC_2 to OC_3) is caused by increase in income (from OY to OY_1) with no change in propensity to consume (CC). In figure B, an increase in consumption from (OC_2 to OC_3) is caused by increased propensity to consume (from CC to C_1 C_1) with no change in income (OY).

2. **Real income**

Fluctuations in prices affect real income. As real income increases, consumption also increases and vice versa.

3. Distribution of income

Consumption is low when there are big inequalities between the rich and the poor and vice versa. (However, some investigations using American cross section date failed to find any significant relationship between income distribution and aggregate consumption. These studies have led some economists to believe that reduction in inequalities of income will not increase consumption considerably).

4. Fiscal Policy

Fiscal policy of the Government considerably affects the consumption level. For example, heavy taxation reduces consumption level.

5. Financial policies of Corporations

If business companies and corporations want to retain a major share of income as reserve, less amount of income is issued in the form of dividends to share holders. The lesser the income, the lower is the consumption level.

6. **Wage level**

Wage cut, according to the classical economists, increases profits and thereby investments. But, according to Keynes, wage cut implies reduction in the purchasing power and thus, in consumption. When wage-cut effected major share of income goes to entrepreneurs in the form of profit, which intensifies inequality in income. This is also not useful to increase the consumption level.

7. Windfall gains and losses

Windfall gains and losses refer to sudden and unexpected gains and losses which affect consumption accordingly.

8. Changes in consumers' tastes and fashion.

Consumption pattern as well as level changes according to changes in the tastes and preferences of the consumers.

9. Changes in the rate of interest

The classical economists held the view that a rise in the rate of interest will increase savings. But Keynes states that the rate of interest has no significant effect on savings in the short run. According to him, “the short period influence of the rate of interest on individual spending out of a given income is secondary and relatively unimportant, except perhaps, where usually large changes are question". In the long run, it affects social habits which affect the consumption function.

10. Changes in expectations

If consumers expect shortage of a commodity and a consequent rise in price, the consumption increases. Such things happen during war or out of fear. If the expectation on future income is encouraging, consumption level will show an uptrend

11. Liquid assets and 'Pigou effect'

Changes in liquid assets affect consumption level. The larger the possession of liquid assets (cash balances, savings accounts, government bonds shares, securities etc.,) the greater is the consumption function.

Prof Pigou argues that a general wage-cut leads to a general fall in prices. This increases the real value of cash balances as well as other forms of savings. The higher the real income, the higher is the consumption level. Thus, by Pigou effect is meant that the real value of money assets rises as a result of a general wage-cut and decline in prices. The rise in the real value of money assets increases the consumption function .

The validity of Pigou effect is now being questioned.

12. Demonstration Effect

Prof Duesenbury holds the view that the consumption pattern in low income countries is so much influenced by the consumption standards of the high income countries. This affects, according to him, the level of savings adversely.

13. Duesenberry Hypotheses

Another contribution of Prof.Duesenberry is that once a person is accustomed to a high standard of living, the consumption expenditure does not fall to the full decrement in income when there is a fall in income due to some reason.

14. Social Security

Payment to provident fund, Life Insurance Corporation and similar premiums to provide for old age and to ensure social security etc., reduces the disposable income and thus the consumption level

15. **Selling effort and provision for installment buying**

More selling efforts as well as provisions for purchase of consumer durables and other products through installment buying on credit increase consumption and vice versa.

16. Stock and availability of consumer durable goods

The stock of durable goods with the consumers and the availability of such goods also affect the consumption level. If the stock with the consumers is more consumption will be lower

17. Demographic factors

Other things, remaining the same, the larger the family, the larger is the consumption. Similarly nation having over population tends to spend more on consumption.

b) Subjective factors or Endogenous factors

These factors are known as psychological factors Keynes lists eight motives "which lead individuals to refrain from spending out of their consumption income". These are,

1. **Motive of precaution**

   It refers to a preference to build up a reserve against unforeseen contingencies.

2. **Motive of foresight**

   It refers to a preference to provide for a anticipated future.

3. **Motive of Calculation**

   It refers to a preference to enjoy interest and appreciation

4. **Motive of improvement**

   It refers to a preference to enjoy a gradually increasing expenditure

5. **Motive of independence**

   It refers to a preference to enjoy a sense of independence and power to do things

6. **Motive of enterprise**

   It refers to a preference to carry out speculative business profit.

7. **Motive of pride**

   It refers to a preference to bequeath a fortune

8. **Motive of avarice**

   It refers to a preference to satisfy pure miserliness

MULTIPLIER

The concept of multiplier is an important tool of analysis in the Keynesian theory of income and employment. This was first introduced by R.F. Khan, a colleague of Keynes and this was used as Employment Multiplier i.e finding effect of an increase in Investment on employment. Keynes borrowed the concept and developed another type of multiplier called **the Income Multiplier or the Investment Multiplier**.

Definition

Multiplier is the ratio expressing the relationship between increase in income and the increase in investment.

The multiplier can be defined as **the ratio of change in income the change in investment.** Changes in investment will lead to changes in consumption which is turn will lead to changes in income The multiplier tries to measure the final change in income due to a certain change in investment $K = \Delta Y/\Delta I$.

The multiplier concept explains the cumulative effect of changes in investment on income via their effect on consumption expenditure.

Prof Samuelson defined the multiplier as the number by which the change in investment must be multiplier in order to present us with a resulting change in income.

To Keynes, the investment in the economy is a powerful leverage of the national income which will multiply due to multiplier effect. The final amplified effect of an increase in investment on income is called the multiplier.

The multiplier expresses the relationship between the initial increment in investment and the final increment in aggregate income.

Multiplier and MPC

The size of the 'K' depend upon the size of the MPC. The two are closely related to each other higher the MPC, higher shall be the size of the k; the lower the MPC, the lower shall be the size of k.

Formula

The value or the size of the multiplier in fact derived from the size of the MPC . Multiplier is equal to the reciprocal of 1 minus MPC .Keynes expresses the per symbolic term as K.

The formula for the multiplier is k = 1/ (1-MPC) in which 'K' stands for the multiplier and MPC stands for marginal propensity to consume.

Since the marginal propensity to save is 1-MPC, the multiplier formula can also be written as K=I/MPS.

Illustration

1. K= 1/(1-MPC)=1/(1-1/2)=1/1/2=2

   Or

   K=1/ MPS=1/ $1/_{1/2}$ = 2

2. MPC =¾ k=1/ (1-MPC) =1/(1-3/4)=1/1/4=4

   K= 1/MPS= 1/1/4= 4

Limiting cases or Rare cases

The table discloses the two limiting cases

MPC	K
0	1
1	**α** (infinity)

The MPC is very rarely zero. If it is 0, then K is 1, what this means is that nothing is spent by the consumers out of increased incomes. The whole of increased income is saved with the result that the multiplier is only one. Suppose there is a new investment of Rs. 10 crores in public works and MPC is 0;that means the whole of Rs. 10 crores is saved. The K The aggregate income increases only by Rs 10 cores.

The other limiting case is when MPC is 1. what this implies is that the consumer spend the whole of the increment of their income on consumption and

nothing is saved, MPS being zero. The result, in such a case shall be an explosive situation.

Suppose Rs.10 crores are invested in public works, the workers who received Rs 10 crores shall spend the whole of it on consumer goods. Other workers who receive increased incomes shall also spend. In this way Rs. 10 crores shall emerge and re-emerge and result in an infinite increase in income. Such a situation, though rare is quite conceivable during hyper inflation. Since consumption is increased by as much as income increases, K in such a case shall be infinity. Both these cases are very rare. Actually K can never be 1 are infinity. It generally varies between 1 and infinity.

Arithmetic example of Multiplier:

Let us suppose that an investment of Rs 10 Crores is made in road building and the MPC is 1/2, or k is 2. An investment of Rs.10 Crores will then lead to an aggregate income of Rs.20 Crores. This can be explained with the help of the following table

$1 \times 10 = 10$

$\frac{1}{2} \times 10 = 05$

$(1/2)^2 \times 10 = 2.5$

$(1/2)^3 \times 10 = 1.25$

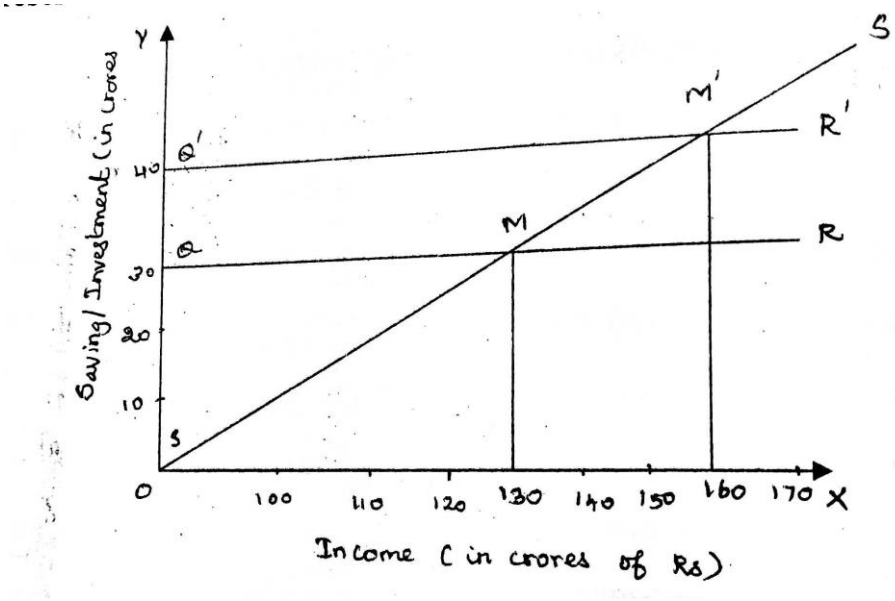
$(1/2)^4 \times 10 = 0.62$

19.37

Diagrammatic representation (Forward Operation)

The conception of k can be explained with the help of a diagram. Suppose that the MPC in a community in 2/3 or MPS is 1/3. It is obvious that k in that case would be 3. Further, suppose that the community which is already investing a sum of Rs 30

Crores now decides to increase this Investment by another Rs.10 Crores. Since the multiplier is 3; the income of the community shall increase by Rs.30 Crores consequent upon an additional investment of Rs.10 Crores. This is represented in the diagram given below



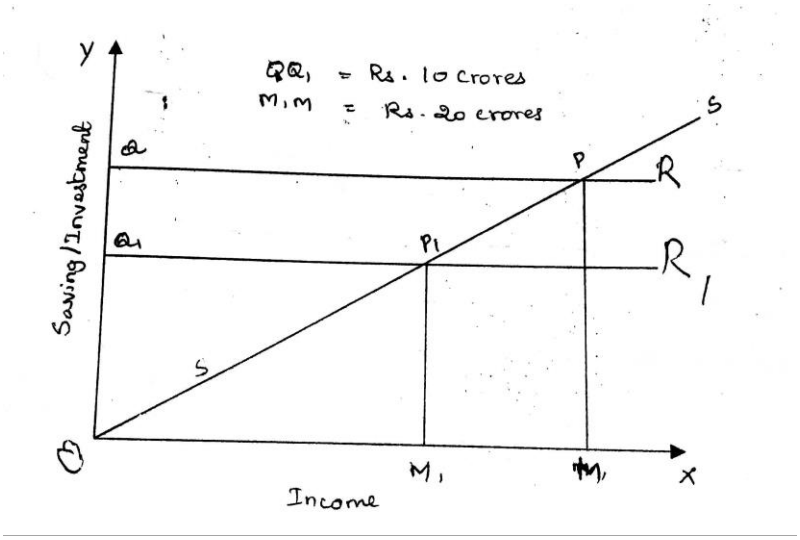
In this diagram QR represents the original investment of Rs. 30 crores. SS represents the saving curve. The additional investment of Rs 10 crores is represented by the curve Q'R' which is above the original investment curve QR. The distance between then two curves is equal to Rs.10 crores as shown in the diagram. M was the original point of equilibrium between saving and investment and at this equilibrium point of the income of the community was Rs 130 crores. But when an additional investment of Rs. 10 crores is made, the new investment curve intersects the SS curve at M'. At this point, the income of the community is Rs.160 crores. In other words, as a result of an additional investment of Rs 10 crores, the income has increased by Rs.30 crores (from Rs.130 crores to Rs 160 crores because the multiplier is 3)

Backward Operation (Or) Reverse working of the multiplier:

Multiplier may work in the backward or reverse direction. Now let us suppose that there is a net reduction in investment to the tune of Rs.10 Crores with the MPC being 1/2 and the multiplier 2, the total final decrease in income would be

Rs.20 Crores. As a result of the reduction in investment by Rs.10 Crores consumer goods industries would be affected adversely then the men engaged in investment industries who will the reduce their consumption expenditure by 50%.

The reverse working of the multiplier can be illustrated with the help of the diagram below.



In this diagram, the SS curve has been drawn on the assumption of MPS., being ½. The multiplier in this example is 2. The SS curve is intersected by the QR curve at the point P. This given us the equilibrium level of income M at PM. Then the investment declines from QO to Q_1O (i.e by Rs 10 Crores) the income also declines from OM to OM_1 and a new equilibrium P_1M_1 is established. The decline in income M_1M is double the decline in investment of QQ_1.

Assumption:

The concept of the multiplier is based on the following assumption

1. Availability of consumer goods:

The successful working of the multiplier depends upon the possibility of meeting the consumption demand continuously. This necessitates continuous availability of goods without any difficulty.

2. Maintenance of investment:

Investment should be maintained and repeated at regular intervals. In other words, as and when there is demand for investment, it should be fully met

3. Net increase in investment:

The act of investment in is sector should be offset by an act of disinvestment in some other sector. There is the possibility of **diminution** of private investment due to (1) increase in the rate of interest and (2) increase in the price of producer goods that may occur as a result of rise in public sector investment. This should not happen.

4. No accelerator effect:

By accelerator is meant the ratio of net change in investment to the net change in consumption. It is assumed that the accelerator does not operate and that the investment increases only by the original amount.

5. Constant marginal propensity to consume:

A change in marginal propensity to consume affects the multiplier effect. In the analysis of the multiplier, marginal propensity to consume is assumed to be constant.

6. Existence of a closed economy:

The economy should have no trade relation with other countries. The trade relation with other countries will alter the multiplier effect

7. No time lags between successive expenditure on consumption:

The concept of the multiplier developed by Keynes in simultaneous or logical multiplier. The basic assumption is that the consumers spend their income as and when they receive it. There is no gap between the receipt of income and spending of it.

8. Existence of less than full employment equilibrium:

Once full employment is reached increase in effective demand will have no favourable effect on increase in output and employment. Hence the assumption of less than full employment equilibrium

9. Existence of the following conditions:

For the successful operation of the multiplier the following conditions are assumed to exist

i. involuntary unemployment
ii. Industrialized economy
iii. Excess capacity in consumer goods industries.
iv. Elastic supply of capital

i) Existence of involuntary unemployment:

If it does not exist in the economy there can be no increase in the volume of employment, however high the volume of investment might be. The multiplier will fail to work because the increase in investment after the point of full employment will result in increasing the price level rather than the volume of expenditure.

ii) Existence of an industrialized economy:

The multiplier works more freely and fully in an industrialized than in an agricultural economy a) The demand for industrial consumer goods is higher in an industrialized than in an agricultural economy b) The agricultural output depends more on natural factors than industrial output. Adverse natural forces may actually reduce agricultural output despite the increase in investment.

iii) Existence of excess capacity in consumer goods industries:

To enable the multiplier is work itself out fully, it is essential that there exists excess, unutilized capacity in consumer goods industries. In case, excess capacity exists, an increase in investment would result in an increased demand for consumer goods which would be met by utilizing the surplus capacity in the consumer goods

industries. More work would be employed in such industries. The multiplier would come into operation.

iv) Existence of an elastic supply of capital:

An increase in investment would provide more employment to the workers (and thus activate the multipliers,) Only if there are no bottle - necks in the supply of capital, raw materials and other resources for the purpose of business expansion.

Leakages:

The multiplier is seldom one or infinity. If it is equal to one, it means that no part of investmental income is spent. If it is infinity it means that the entire incremental income in spent. Both situations are rare due to the operation of the fundamental psychological law of consumption. Therefore, the multiplier is generally between one and infinity. The size of the multiplier depends upon the extent of different types of leakages from the income stream. If these leakages are plugged the initial investment will have greater effect on income and employment generation

1. Savings

The higher the propensity to save the lower is the value of multiplier

2. Debt Cancellation.

A part of the increased income may be used to pay off old debts.

3. Purchase of old stocks and securities

People may purchase old stocks and securities with the newly created income and do not spend it on increased consumption

4. Imports

Money spent in the purchase of imported goods does not add to the domestic income and employment. This is an important leakage

5. Accumulation of idle cash deposits:

A part of income may be kept in the form of idle cash deposits with the banks. This has no effect on consumption function in the forward direction.

6. Price - inflation:

A considerable part of income is dissipated in the form of higher prices during inflation. If there has been a constant price this part would have favourable effect by way of increasing income and employment.

7. Taxes and corporative savings:

When disposable income decreases the amount of consumption as well as its effect on income and employment also is less Taxes and corporate savings directly affect the size of disposable income.

Significance of the concept of the multiplier:

1. It establishes the importance of investment in developing economics.
2. It indicates the way in which income and employment are generated.
3. It makes very clear the need for public sector investment and active interfence policy of the govt.
4. It provides better explanation of the course of business cycles. Knowledge of the multiplier is very essential during the course of trade cycle studies.
5. It is an excellent tool of analysis in finding out a suitable employment policy.
6. As S.E. Harris points out, “It sets a fresh wind blowing through the structure of economic thought”. This is considered a path breaking contribution of Keynes.
7. It enables us to understand equality between saving and investment, the phenomenon of inflation, deflation, deficit financing etc.

Criticism:

Economists like Haberler, Hart, Stigler, Klein and on had pointed out the defects in the concept of the multiplier in their critical study. For Prof Hart this concept is a useless **"fight wheel"**

Prof Hazlitt considers it as **"a strange concept "a myth and "a worthless toy"** Prof Hull considers it rubbish Prof. Stigler considers the multiplier to be the "the fuzziest part of his (Keynes) theory" The following are some of the criticisms.

1. It is based on extremely simplified assumptions
2. There are large number of conditions such as availability of plenty of consumer goods, existence of excess capacity in consumer goods industries etc., which may not be true in reality sometimes.
3. It takes no account of the effects of induced investment that is effects of increase in consumption on investment The criticism comes mainly from professors DH Robertson R M. Goodwin. A.P.Lerner and others.
4. The higher level of investment resulting from an increase in investment must be maintained. That is, the initial use of investment must be followed by similar increments in investment at regular intervals.
5. The multiplier works only under conditions of under employment. Once full employment is reached, increase in investment will have no effect on output and employment.
6. There must be net increase in investment in one sector may be offset by decrease in investment in another sector.
7. In the theory of multiplier, the effects of accelerator have not been considered.
8. In the process of income generation prices should remain unchanged.
9. It is static is character. It assumes a closed economy. Therefore, it is unsuited to the dynamic world.

10. Prof. L. K Klein questions the linear relationships between aggregate consumption and aggregate income.

11. Haberler states that Keynes has defined something as necessarily true.

12. According to Prof. A.G. Hart, it adds nothing to the ideas or results alreads implied in the use of consumption functions a useless "fifth wheel"

Kahn's employment multiplier:

Kahn's original multiplier was the employment multiplier Since Keynes is concerned primarily with employment, we shall do well to consider the multiplice not only in relation to income but also in terms of employment. The employment multiplier is the ratio of an increment in primary employment to the total employment primary as well as secondary. Thus if primary employment in N2, total employment N and multiplier K^1 then $N = K^1N_2$. In order to distinguish the employment multiplier from the investment multiplier the former is expressed as K^1 instead of mere k. To repeat, the employment multiplier shows the total (primary as well as secondary) increase in employment divided by the primary increase in employment. Assuming that 3 Lakhs workers are employed in road building as a result of an investment of Rs. 10 Crores, then Rs. 3 Lakhs represent primary employment, in road building. But this is not all. There shall be the secondary employment as well flowing from the primary employment because the men employed in road-building shall spend on consumption goods, thereby leading to an expansion of business activity in consumption goods industries. There shall then be an increase in employment in the consumption goods industries. Assuming that the secondary employment in the consumption goods industries is 6 Lakhs, then the total employment is primary plus secondary combined shall be 9 Lakhs. Dividing the total employment by the primary employment we arrive at the employment multiplier which is 3 in this case. The employment multiplier tells us the number of persons indirectly employed for everyone that is directly employed. When we mean is that every person newly employed in investment industries will cause two other persons to be employed in consumption goods industries.

THE ACCELERATOR

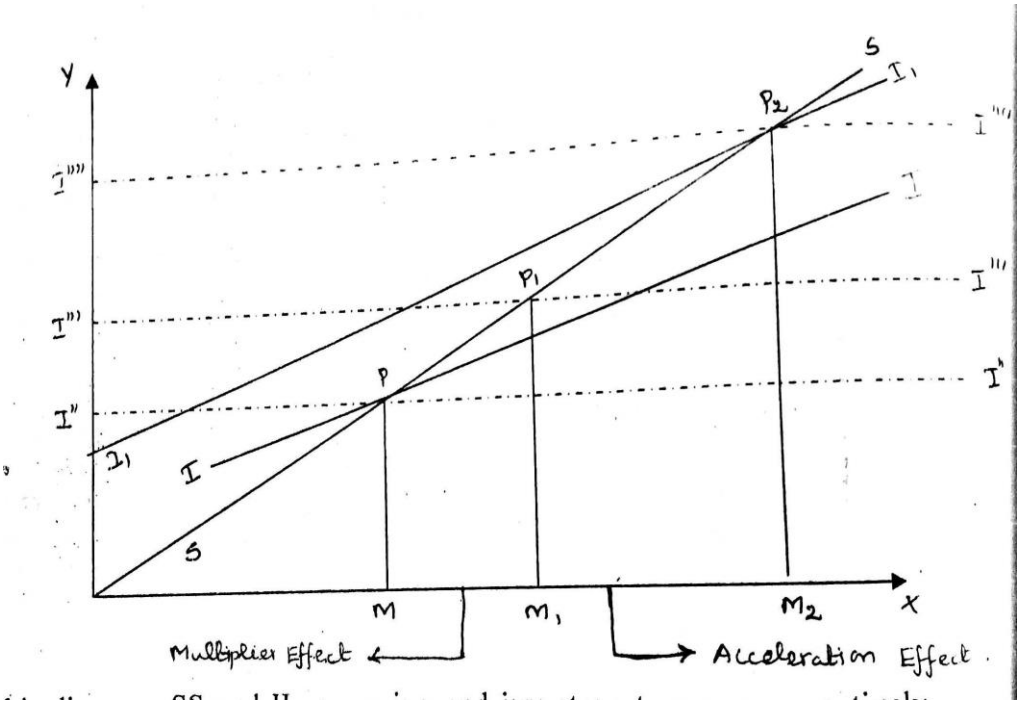
The principle of Acceleration of Derived Demand or briefly speaking, the Accelerator is another important tool of economic analysis. It is older than the multiplier and is generally associated with the name of an American economist J.M Clark though it seems to have been propounded first in an unrefined and unpolished form by a French economist. Albert Aftalion, at the turn of the century. It must be remembered that the accelerator is not at all a Keynesian concept. In fact, Keynes completely ignored it while writing out he General Theory. Yet the multiplier and the Accelerator are paralled concepts. While the multiplier shows the effect of investment on consumption (And an income and employment), the Accelerator shows the effect of a change in consumption on investment. The multiplier shows the dependence of consumption on investment. The Accelerator on the other hand shows the dependence of investment on consumption. It explains how changes in consumption affect the volume of investment. To be more accurate, the Accelerator measures the effect of an increment (or decrement) in the rate of consumption on the volume of investment. **It expresses the ratio of the net change in consumption to the net change in investment.** It is evident that changes in the consumption of certain commodities cannot but have their repercussions on the output of the machines used in the making of those commodities. In other words, the machine making (or investment) industries in the ultimate analysis depend on the consumption goods industries or the consumption goods industries constitute the basis of investment goods industries. The accelerator simply measures the changes in investment goods industries. consequent upon the changes in the consumption goods industries. The principle of acceleration (or acceleration effect) states that a given increase in the demand for consumption goods in the economy generally leads to an accelerated demand for investment goods simply stated, the accelerator is the numerical value of the relation between an increases in consumption and the resulting increase in investment. Assuming that an expenditure of Rs.5 crores on consumption goods industries leads to an investment of Rs 10 crores in investments goods industries, we can say that the Accelerator is 2. It can be me and even less than one. It can even be zero. If the production of consumption goods involses no investmens the investment goods industries then the accelerator is zero. Bus, generally the production of consumption goods does

require some amount of capital equipment. Hence the accelerator is generally more than unity.

Example:

The operation of the accelerator in actual practice may be illustrated by the following hypothetical example. Let us suppose that in order to produce 1000 consumer goods, 100 machines are required. Further suppose that the working life of a machines are 10 years and that after 10 years, the machine has to be replaced. What this means is that every year 10 machines have to be replaced in order to maintain the constant flow of 1000 consumer goods. Assuming that the demand for consumer goods remain stable, the annual demand for machines would be 10. This might be called the "replacement demand". So long as the demand for consumer goods remain unchanged the annual output of machines would continue to be 10. Complications will however ensure if the demand for consumer goods itself changes. Now let us suppose that the demand for consumer goods rises by 10%. Naturally therefore more machines will be required to cope with the increased demand for consumer goods. We shall need 10% or 10 more machines to increase the production of consumer goods The annual demand for machines shall not now be 10 as usual but 20 (10 for replacement and 10 for meeting the increased demand). The demand for machines will thus rise from 10 to 20 which represent an increase of 100%. The point to be noted here is that a comparatively small rise of 10% in the demand for consumer goods causes a rise of 100% in the demand for machines. The employment in the machine-making industry shall be doubled. There shall then be a greater fluctuation in employment in the machine-making industry than the consumer goods industries. Here we find the true significance of the accelerator which states that the changes in the investment goods industries are larger than the changes in the consumer goods industries. In this particular case, the Accelerator is to.

The principle of accelerator (or accelerator co-efficient) can be depicted with the help of a diagram given below.



In this diagram, SS and II are saving and investment curves respectively. At the point P the two curves intersect each other. The economy is in equilibrium with OM income. At this equilibrium level: the saving and investment are both equal to each other (i.e both are equal to Ol"). Then an increase in investment from Ol" to OI"" pushes up the income from OM to OM_2. In other words, the income increases by MM_2, if the increase in investment (i.e I"I"') had been purely exogenous investment, then the entire increase in income (i.e. MM_2) would have been due to the multiplier effect. But in this diagram, only I"I"' increase in investment in exogenous investment. so that only MM_1, portion of the increase in income is due to the multiplier effect. The remaining portion i.e M_1M_2 is due to the acceleration effect, because the I" I"' portion of the increase in investment due to induced investment. The total multiplier-accelerator effect on income measured by MM_2, (i.e MM_1, due to multiplier effect and MM_2, due to the acceleration effect. If the entire increase in investment I" I"" were due to exogenous investment, the entire increase in income (i.e MM_2) would have been due to the multiplier effect Formula Accelerator – $\Delta I/\Delta Y$

Determinants of acceleration coefficient

Acceleration coefficient depends upon

i. The capital-output ratio (K/O) and

ii. The durability of capital goods

Greater is the durability of capital goods, higher is the value of acceleration coefficient.

The Multiplier and the Accelerator

The multiplier shows the effect of a change in investment on income and employment. The accelerator shows the effect of a change in consumption on investment. In the case of the multiplier, the consumption is dependent on investment and in the case of the accelerator investment is dependent upon consumption.

The multiplier depends upon the marginal propensity to consume (i.e upon the psychological factors) and the accelerator durability of machines (i.e upon technological factors). The higher the marginal propensity to consume, the higher is the size of the multiplier. The lower the marginal propensity to consume, the lower is the size of the multiplier. Greater the durability (life time) of the machines, the greater is the value of the accelerator and higher is the acceleration effect. Smaller the durability of the machines lower is the value of the accelerator and lower is the acceleration effect.

Assumption

The concept of the accelerator depends upon several important assumptions. They are,

1. **No excess capacity in consumer goods industries**

Capital stock in the consumer goods industries must be fully utilized. The acceleration principle becomes inactive during depression period due to the presence of idle capacity

2. Surplus capacity in investment goods industries

If there is no surplus capacity in investment goods industries, an increase in the derived demand for machines would not induce an increased supply of machines.

Having no excess capacity in the consumer goods industries and at the same time having excess capacity in investment goods industries is really a tough condition.

3. Nature of demand

The increase in demand for consumption goods must be more or less permanent in nature. If the increase in demand is temporary, it may not lead to any addition to the capital goods.

4. Constant capital-output ratio

Capital output ratio remains constant.

5. Availability of resources

There is no restriction on the availability of resources and the ability of the machine making industry to produce more machines.

6. **Credit supply**

The credit supply is elastice i.e., there is no scarcity of credit supply.

7. **Fluidity**

The investment goods industry is in fluid condition. It assumes that "finished goods are turned out as fast as wanted and materials and means of production are instantly supplied as fast as the process of finishing requires them".

Limitations

The use value of the acceleration principle has been questioned by critics. They point out the following limitations of acceleration principle.

1. No excess capacity

An important assumption of the acceleration principle is the existence of no excess capacity in consumer goods industries. But it may not be a reality. If there is idle capacity a rise in demand for consumer goods will not increase induced investment.

2. Surplus Capacity

Another equally important assumption is that there exists surplus capacity in investment goods industries. If it were not so, an increase in the derived demand for machines will not increase the supply of machines.

3. Nature of demand

If the rise in demand for consumer goods is temporary in nature, the producers may hesitate to place order for capital goods. In other words, the acceleration principle is not only based on technological factors but also on profit expectations by the entrepreneurs.

4. Capital output ratio

The assumption is the existence of constant capital output ratio. But in reality the ratio does not remain constant. Capital output ratio varies in different phases of the business cycle, because of the following reasons.

First, it is quite possible that certain inventions and improvements may take place in the methods of production, leading to an increase in the output per unit of capital equipment This is bound to alter the capital output ratio

Second, the existing capital equipment may be utilized more intensively than before resulting in an increase in output per unit of capital equipment.

Third, with the changes in the expectations of the entrepreneurs regarding the future trends in interest rates wages etc. the proportions in which the various factors are combined together may undergo changes in course of time.

5. Availability of resources

There must be enough factors of production which could be readily pressed into service to meet the increased demand for consumer goods. This is possible only when there is widespread unemployment in the economy. When there is full employment this does not operate.

6. Availability of funds

Scarcity of funds will raise the rate of interest and increase the cost of investment.

7. Doesn't work during depression

It cannot work in the case of a fall in demand beyond certain level. Its working gets impaired during depression.

Importance

Despite criticism, the concept of the acceleration is useful in several ways. The following points clearly explain the significance of the acceleration principle.

1. It helps to understand the process of income generation
2. It helps to understand how small increases in one sector can be magnified and spread throughout the economy.
3. It explains an important aspect of economic fluctuations. It shows that the investment goods sector fluctuates more violently than the consumer goods sector. Even minor changes in the consumer goods sector create considerable changes in the investment goods sector.
4. Prof. Hicks, Harrod and others based their theories of business cycle on the acceleration principle.

Conclusion

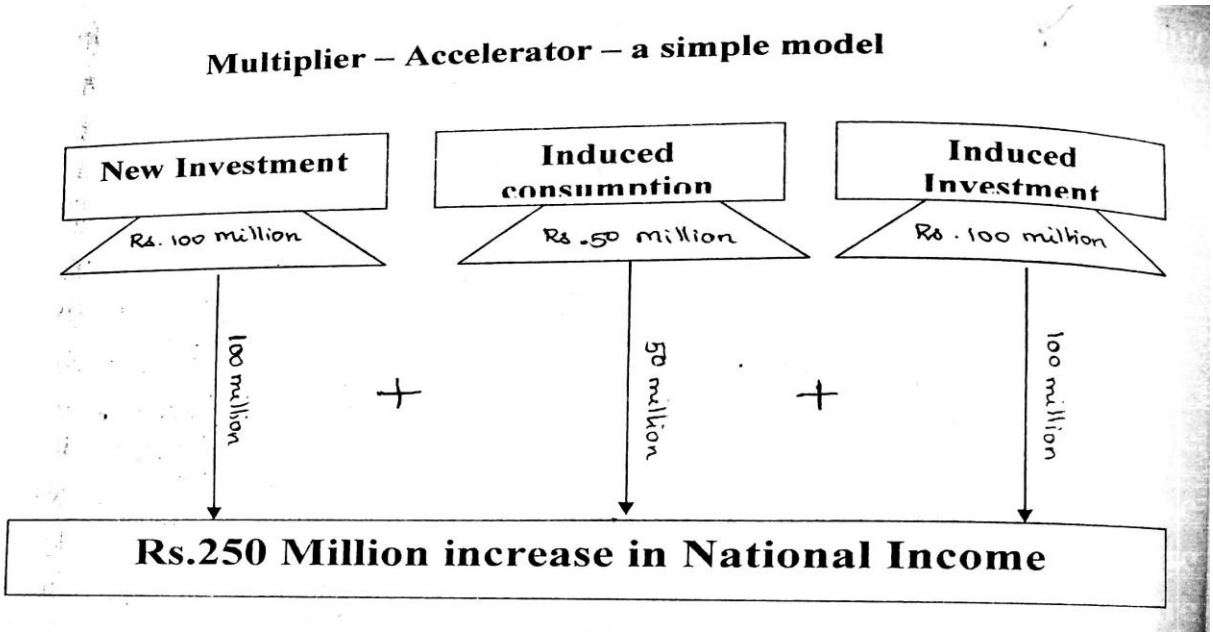
The principle of acceleration has several theoretical importance. But it is based on questionable assumptions. Keynes was conscious of this fact. He herefore, considered it a crude and highly unsuitable tool for analysis.

Multiplier - Accelerator Interaction

Prof. Hansen has combined Keynes multiplier with Aftation's Accelerator and explained the mutual relation between investment and consumption in the following way. The growth of primary or as he terms it, autonomous investment has a magnified effect on total employment and income and consequently a magnified effect on the demand for articles of personal consumption (the multiplier: This, in turn again leads to an increase in investment. since new means of production are necessary for the satisfaction of the increased demand for consumer goods (the Accelerator). There derivative investment again actuate the multiplier mechanism and magnify the increase in employment and income which leads to a new wave of capital investment etc. Prof. Hansen calls the effect of the combined action of multiplier and accelerator the **leverage effect**. Prof Hansen combined the multiplier and accelerator the because the concept of the multiplier provides only a one - sided picture of the mutual dependence of investment and consumption. The multiplier expresses the mutual relationship only by indicating that consumption grows as a consequence of investment. It completely disregards the fact that is the final analysis; investment itself depends upon personal consumption.

Multiplier Accelerator interaction called Super multiplier establishes as exact quantitative correlation between a rises in the demand for consume goods and a rise in the demand for investment goods. Other Keynesian like Harrod , Samuelson, Hicks and Kurihara have also made attempts to integrate these parallel concepts.

Let us take a simple model to illustrate the interaction of multiplier and acceleration Suppose is an economy an initial investment of Rs.100 million ha been made. It is assumed that the MPC is 0.5 and acceleration coefficient is 2. The result of the initial investment of Rs. 100 million will be as shown in the followin figure. This indicates the result of initial investment only in the first round, it is simple model for a single period.



The simple model given in the above figure shows how a new investment of Rs.100 million results in Rs.250 million increase in the national income. But actually there will be a chain of interaction. The induced investment of Rs.100 million will be making induced consumption of 50 million. which will accelerate further induced investment to 100 million etc.

An example shall illustrate how a combination of the Multiplier and accelerator (called the Super - Multiplier) brings about an accelerated increase in the national income. This is illustrated in the table below.

Multiplier - accelerator effects of income

In crores of Rs.

Multiplier period	Initial investment	Induced consumption	Induced investment	Aggregate increase in National income
1	20	0	0	20
2	20	10	20	50
3	20	25	30	75
4	20	37.50	35	82.50
5	20	41.25	7.50	68.75

The above table has been drawn upon the following two assumptions.

i. **MPC = 0.5 and**

ii. **Accelerator = 2**

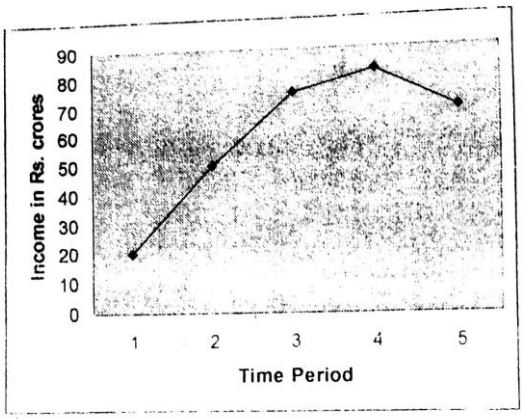
This table explains the process of income generation with the help of both at the multiplier and accelerator. As shown in the table, there is an initial investment of Rs 20 crores in the first period. Since during the first period neither the multiplier nor the accelerator operates, there is neither induced consumption nor any induced investment. The total income remains equal to Rs 20 crores which is also the initial investment.

In the second period the induced consumption is Rs. 10 crores because the MPC is 0.5. In other words half of the income received by the people is spent on consumer goods . The induced investment in the period is Rs 20 crores because the accelerator is 2 crores. The total income in the second period now rises to Rs 50 crores.

In the third period also both multiplier and accelerator operate. The induced consumption is Rs.25 crores i.e one half of the income in the proceeding period (because MPC is 0.5). The induced investment in the same period is Rs.30. crores (i.e double the difference between the induced consumption is periods 2nd and 3rd). That is to say Rs.25 - Rs .10 crores = 15x2=30 (Accelerator is 2) . The total income in the 3rd period is Rs 75 crores.

Again, in the 4th period, one half of the income in the preceding period i.e Rs. 37.50 is the induced consumption on the assumption of MPC being 0.5 and Rs.25 crores is the induced investment on the assumption that the accelerator is 2 (i.e. to say Rs.37.50 - Rs.25= Rs. 12.50 x 2= Rs.25 crores). The total income in the 4th period reaches Rs.82.50 crores has a result of the combinded multiplier and accelerator interaction.

In the 5th period, the induced consumption is Rs.41. 25 i.e., one half of the total income in the 4th period while the induced investment is Rs.750 crores (i.e say Rs 41.25 Rs 37.50- Rs 3.75 crores multiply it by 2 and the result is Rs 7.50 crores.) The total income, however falls down to Rs.68.75 crores in the 5th period because both the multiplier as well as the accelerator become weak now.



We represent the time period on the X axis and the increase in income on the Y axis.

The curve ABC represents the actual process of income generation in the total leverage effect as a consequence of multiplier acceleration interaction during the 5 periods as depicted in the above table. The national income rises from Rs.20 crores to the peak level of Rs.82.5 crores (from A to B) but later declines from Rs.82.50 crores to Rs.68. 75 crores in the 5th period (from B to C).

In this manner we combine the Multiplier effect - Accelerator to know the total effect of an initial of investment on national income.

Significance

The study of Multiplier- Accelerator interaction (the super Multiplier) furnishes us with a better and more scientific explanation of the business cycle . Further the Multiplier Accelerator interaction also furnishes an adequate explanation of the turning points of the business cycle. The upper and the lower turning points are due to the MPC being less than unity and the working of the accelerator in the economy.

The Super- Multiplier no doubt, furnishes an adequate explanation of the cyclical processes, yet it must be pointed out that there are several practical difficulties in the measurement of the total effect of the multiplier and the accelerator on national income.

UNIT V

INVESTMENT FUNCTION

Meaning of investment

Effective demand determines the level of income, output and employment in an economy. It depends upon 1. Consumption 2. Investment consumption level remains more or less stable in the short run. Therefore, investment is an essential requirement for full employment and the key to prosperity in a capitalistic economy.

Investment is a flow of expenditure over a given period of time on new fixed capital goods (e.g building, factories, machinery etc) or an addition to stocks (e.g. raw materials unsold consumer goods etc.). Thus investment means real investment and not financial investment.

Classification of investment

1. Real and Financial Investment

In the Keynesian view investment means real investment by financial investment is meant the purchase of shares, bonds, etc. These investments do not add to the capital stock. They are generally done by individuals. But by real investment is meant the flow of expenditure over a given period on new fixed capital goods. These investments add to the stock of capital wealth. These are generally done by institutions like firms and entrepreneurs for national benefit.

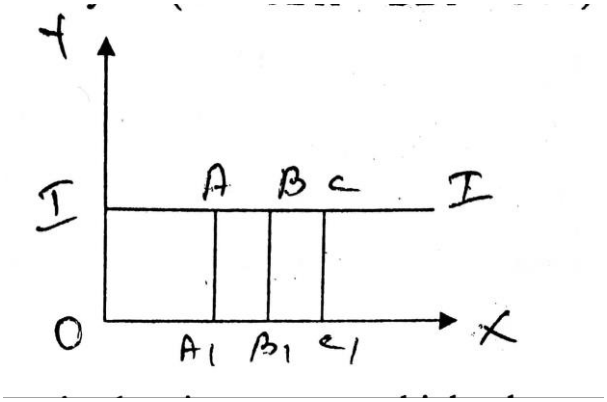
2. Autonomous and induced investment

Investments are classified as autonomous investment and induced. Investment. This is more or less the same as the classification of investment as public and private investment.

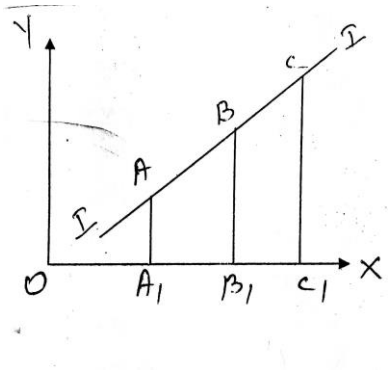
Autonomous investment is independent of variations in output and profit considerations. It is not sensitive to changes in income. According to Prof Hicks autonomous investment occurs as indirect response to inventions and is expected to pay for itself over a long period. According to WC Peterson, "the autonomous

investment is generally associated with such factors as the induction of new technique or products, the development of new resources or the growth of population or labour force". These investments are undertaken in war economics or in planned economics.

The curve of autonomous investment is represented by a straight line running from left to right and parallel to OX axis given above. This is shown in the figure Whatever be the income level (OA_1 or OB_1 or OC_1) the autonomous investment is only OI (OI= AA_1=BB_1=CC_1.



Induced investment is that investment which changes with a change in income. It is income-elastic and profit-motivated. It is done generally by the private sector. This varies directly with changes in income. The shape of the indused investment curve is upward sloping as shown in the diagram. When income is OA_1 investment is AA_1 .When income increases to OC_1 investment also increases to CC_1.

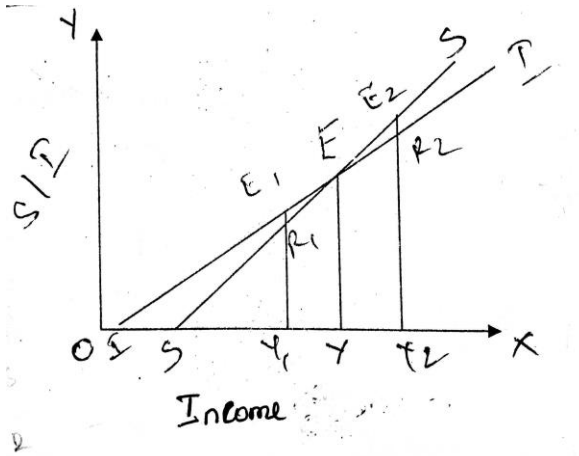


3. Ex-ante and Ex-post investment or planned and Realised investment

By ex-ante investment of planned investment is meant expected inveatment. By ex-post or realized investment is meant the actual investment undertaken. Ex-post or realized investment is necessarily equal to ex -post or realized saving. But ex-ante or planned investment may differ from ex-ante or planned savings. The main reason for this is that savings and investments are done separately by different sets of persons.

If planned savings is greater than planned investment the expenditure on consumptions decreases. As a result of it output of consumer goods will be reduced and the demand for capital goods will be affected reducing the output of capital goods. This is turn reduced the income. This process goes on until income falls to such a level when the reduced savings are once again equal to investment. If planned investment is greater than planned savings due to bank credit or government expenditure the demand for durable goods increases. This raises the income of the producers of durable goods which in turn increases the investment demand. As income increases the volume of savings also increases. Such increase in incomes and savings goes on continuously tire the resultant increase in savings becomes equal to investment once savings and investment become equal to each other the process comes to a halt .

The equilibrium level of income where savings and investments become equal to each other is shown in the figure at point E. at OY level of income S=I.



Measures to stimulate private investment

1. **Tax Concessions**

It is argued that a reduction in corporate profit taxes would stimulate investment during the depression period and would serve as a great incentive for new investment.

2. **Government spending**

It is regarded as compensatory public spending which fills the gap left by private investment during the period of depression. Public investment is a balancing factor which stimulates investment when private investment shies when the economy passes through a period of depression. Government has to undertake such socially useful works such as construction of dams, roads, public parks, school buildings, recreation houses etc., which are not undertaken by private investors since they do not yield any return to them.

3. **Pump Priming**

It refers to that type of Government expenditure which is designed to stimulate private investment and achieve full employment. This type of Government expenditure generally takes the form of socially useful projects, such as the construction of roads, railways, dams, canals, hydroelectric works etc., which provide the necessary infrastructure for private investment.

4. **Reduction of the rate of interest**

To some extent, the rate of interest influences investment. Before writing his book 'General Theory'. Keynes thought that a lower rate of interest would stimulate private investment. But later he dismissed his own view as irrelevant and he held interest rate is more or less an insignificant factor affecting investment activity.

5. **Reduction in wage rate**

As thought by the classical, a cut in wage rates could increase the marginal efficiency of capital or the expected rate of profitability. But this is doubtful A cut in

wages will reduce the income received by the workers. So their purchasing power or their effective demand will fall

6. **Price Policy**

Stability in price level will stimulate private investment. A price support policy with a ceiling as well as floor prices could ensure producers certain returns from their investment or there is an assured price for the product produced. This encourages private investors to promote investment.

7. **Other measures**

a. Abolition of monopoly privileges

Another stimulus to investment is the abolition of monopoly privileges. The grant of patent rights for certain innovations encourages new investors to enter the field. So the volume of investment is less that it would otherwise be.

b. Promotion of research

It has been suggested that new scientific research to conducted by nonprofit institutions, such as the universities and Government scientific institutions but not by private trusts, because the latter are not interested in genuine research. On the other hand, they tend to mould research to serve their own selfish ends. Scientific researches conducted by interested agencies will certainly open up new virtues of investment possibilities in the diverse fields of activity.

Thus, there are various ways by which private investment can be stimulated. However, it should be remembered that private investment is always guided by profit motive. Despite the above measures to induce private investment profit is therefore necessary. For this reason to maintain a certain level of investment, private investment must be supplemented by public investment .

Factors determining investment

There are 2 types of investment namely **public investment** and **private investment**. The private investment for various reasons is subject to violent fluctuations. Therefore Keynes laid greater significance to the role of public

investment, which is not profit-motivated and which does not depend upon income. It is both wealth-creating and employment generating just like private investment. Hence, the importance of public investment or autonomous investment.

The private investment depends upon several factors such as,

1. The marginal efficiency of capital.
2. The rate of interest
3. Growth of capital
4. Improvements of technology
5. Flexibility of wage rate
6. Changes in the tax structure
7. Growth of population etc...

Among them the most important factors are,

I. The marginal efficiency of capital and

II. The rate of interest.

I. The marginal efficiency of capital

Even between these two the MEC is widely fluctuating which makes the private investment highly unstable.

The **MEC** refers to the expected profitability of a capital asset. It may be defined as the highest rate of return over cost expected from the marginal or additional unit of a capital asset. It depends upon **2 factor**s,

1. The prospective yield from a capital asset and
2. The supply price of a capital asset

1. **Prospective yield**

It means the total net returns expected from the asset over its lifetime. In other words, it refers to the expected aggregate returns to be derived from a newly constructed asset during its lifetime.

2. **Supply price.**

Supply price of an asset the cost of producing a brand new asset of that kind not the supply price of an existing asset. It is sometimes referred to as replacement cost.

Supply price=Discounted prospective yield

The formula for its calculation is as follows,

Cr= Q1/(1+r) 1 + Q2 / (1+r) 2+ Q3/(1+r)3 +……..+ Qn/(1+r)n

Cr indicates the supply price or replacement cost of the new capital asset.

Q1, Q2, Q3,…….. Qn denote expected annual returns from the capital asset. (series of prospective yields)

R stands for the rate of discount which will make the present value of the series of annual returns just equal to the supply price or replacement cost of the capital asset.

Example Let us assume that the prospective annual yields from the use of the new capital asset having a life of only 3 years are as follows,

First year	Second year	Third year
Rs. 100	Rs. 150	Rs. 60

Further, let us assume that the current supply price of a capital asset is Rs 264.30 . Then 8% would be the unique rate of discount which will equate the sum of the discounted values of the prospective annual yields to the current supply price of the capital asset because,

Rs.264. 30= Rs. 150/(1.08)+ Rs.100/(1.08)2+ Rs.50/(1.08)3

(Rs 264.30=138.88+85.73 +39.69)

If the figures of prospective yields and the supply price are altered, the rate of discount would also change. If the yields are lower, the rate of discount which would equate the two sides of the equation would be lower. If the supply price is higher, the rate of discount would be lower. In actual practice, it is very difficult to correctly the estimate the expected return from a capital asset over its life time and it is very difficult to estimate even the life of a capital asset.

Factors determining MEC

Many factors influence the MEC. They may be classified as short run and long run factors.

Short run factors

1. **Expected demands.**

If the demand for the products is expected to be high in the future, the MEC will be high and consequently the investment will increase and vice versa.

2. **Costs and Prices**

The future behaviour of costs and prices also has a strong bearing on the MEC. If the costs are expected to decline and the prices are expected to rise in the future, the expectations of the entrepreneurs about the rate of return from investments will go up. If the costs are expected to amount up. While the prices are expected to decline in the future, the MEC will receive a setback. As a result, the volume of investment will decline.

3. **Propensity to consume**

An upward short run shift in the propensity to consume will cause a similar upward shift in the MEC.

4. **Change in income**

The MEC is affected favourably by a rise in income and unfavourably by a decline in income.

5. **Current state of expectations**

Current expectations exert an important influence on the volume of investment. The rates of return on current investments influence future business expectations. If the current rates of return are high. The MEC is bound to be high for new projects of investment.

6. **Taxation**

When taxes go up, costs go up. This reduces profitability and check up investment.

7. **Business optimum and pessimism**

The MEC is high when there is business optimism and vice versa.

8. **Changes in liquid assets**

With the absence of large amount of liquid assets, the ability to invest is limited and vice versa.

9. **Government expenditure**

When Government expenditure is increased MEC increases and private investment expands because of multiplier effect.

Long run factors

1. **Rate of the growth of population**

A fast growing population invariably raises the MEC in the private enterprise economy.

2. **Development of new areas**

The opening up of the new areas in a country to the development process necessitates heavy investment in all sorts of fields such as transport, electricity, irrigation, agriculture, industries, housing etc.

3. **Technique of Production.**

Changes in technique of production affect investment preferences. Introduction of capital intensive technique of production and those that reduces cost of production will boost up investment preferences.

4. **Productive capacity of existing capital equipment**

If the existing stock of capital is adequate to meet the increased demand that may occur as a result of population growth etc. no new investment will be forthcoming. If there exists no excess capacity, investments will be increased.

5. **The rate of current investment**

If the rate of current investment in an industry is already high there would be little scope for further investment in such an industry.

6. **Infrastructure**

Transport, banking development, power generation etc. increases MEC and thereby investment.

7. **Growth of trade**

Through protective policy imports are controlled and exports are encouraged, Investment is stimulated in export trade industries.

8. **Political situation**

Political stability and industrial peace will create confidence among the entrepreneurs stimulating private investment. On the other hand, unfavourable situation like political instability, war, revolution etc., reduces the enthusiasm of the entrepreneurs and thereby reduces private investment.

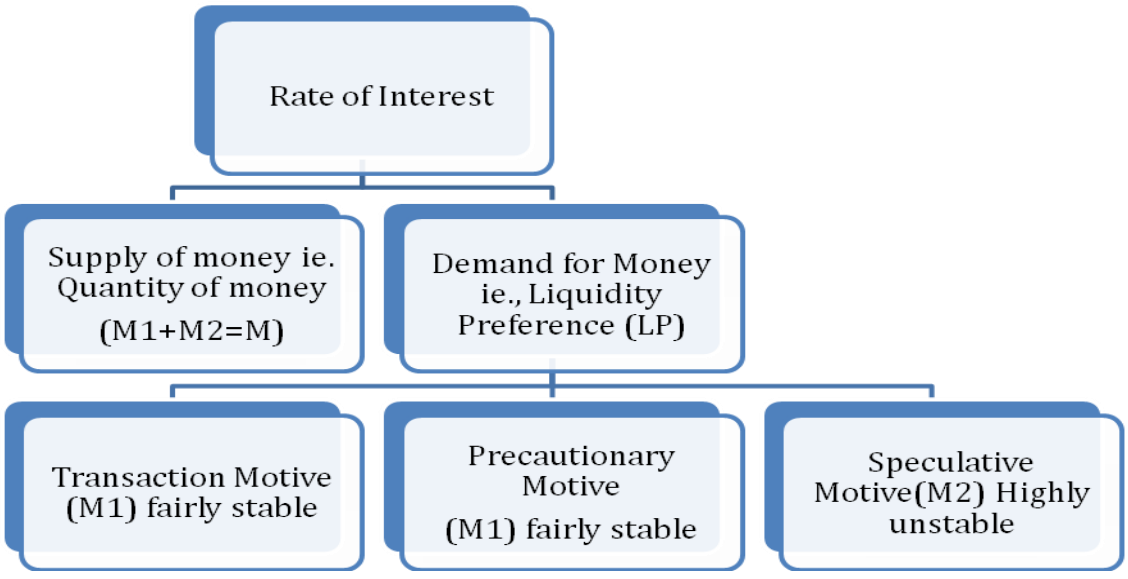
9. **Government policy**

Liberal policy that does not control the industrial development, followed by the government will stimulate private investment.

II. The Rate of Interest

The rate of interest is the second important factor in determining the volume of investment. Keynes propounded his 'liquidity preference theory' to explain rate of interest. To Keynes rate of interest is purely a monetary phenomenon. It is determined purely by the demand for and the supply of money. He called the demand for money as **liquidity preference**. Keynes expressed that every person who has saving has to decide about the method of saving in the form of income to get an interest. If a person keeps his savings in the form of idle cash, he can put it to any use. Thus he enjoys the advantage of liquidity. On the other hand if he purchases securities, he gets some income but he is not having liquid money. To Keynes interest is a reward for parting with liquidity for a specific period.

Interest Determination



According to Keynes rate of interest is a reward for accepting bonds and securities. In Keynes' liquidity preference theory the demand for and supply of money together determine the rate of interest. Given the supply of money at a particular time it is the liquidity preference of the people which determines the rate of interest. This is the essence of Keynes' theory.

The liquidity preference depends on three motives. They are the transaction motive, the precautionary motive and the speculative motive. The transaction motive is further classified into income motive and business motive. These three motives constitute the demand for money.

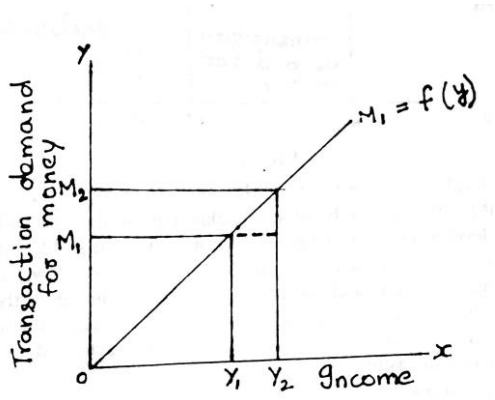
a) Transaction motive

It refers to the demand for money for current transactions by households and firms. The former needs cash to bridge the gap between the receipt of income and expenditure. Households have to keep cash for meeting their daily needs. People are paid wages weekly or monthly. But they spend every day a particular amount of cash. Hence they have to keep certain amount of money to carry on their day to day activities. This amount depends on the size of the income, method of expenditure and the time interval after which the income is received. This is called as income motive.

The business motive refers to the needs of the firm to keep cash in order to meet their current needs like payment of wages, purchase of raw materials, transport charges etc. The demand for money by firms also depends on income, level of business activity and so on. The transaction demand for money depends on income.

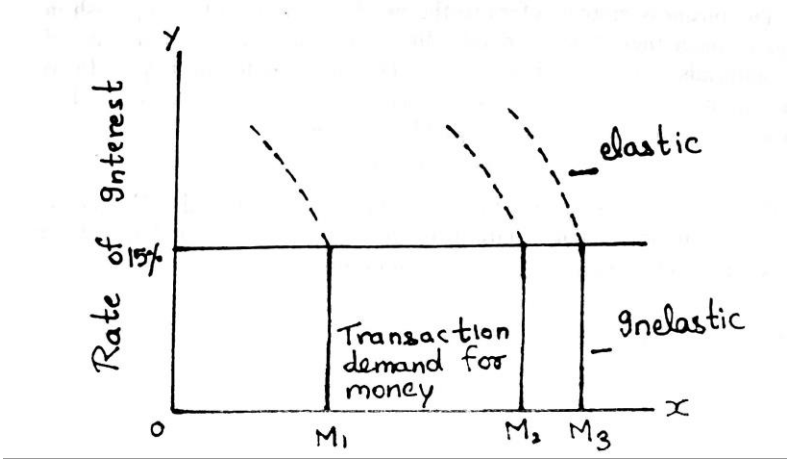
$$M_1 = f(Y)$$

Where M_1 is the transaction demand for money and f (Y) is the function of income. The relationship between transaction demand for money and level of income can be shown in the following figure.



Income is measured in the X axis and the transaction demand for money in the Y axis. The curve M_1 = f (Y) shows the relation between income and transaction demand for money. As income increases from. OY_1 to OY2 the total demand for money increases from OM_1 to OM2.

The transaction demand for money is interest inelastic. This is because unlike the idle money, the money needed to meet the transaction motive cannot be invested for a long period even if the rate of interest is high. In fact to meet the various needs people have to keep atleast half the amount of cash. If people are willing to invest the money it should be done for a very short period. Therefore, unless the interest is the highest, transaction demand for money will not be responsible to the changes in the rate of interest. In other words the transaction demand for money will be interest elastic at the highest rate of interest. But it is perfectly interest inclastic at medium and low rate of interest. The relation between the elasticity of rate of interest and transaction demand for money can be illustrated in the following figure.



At Y_1 level of income the total demand for money for transaction motive is OM_1. It is perfectly interest inelastic untill the rate of interest reaches the level of 15%. At Y_2 level of income, the demand for money is OM_2 and at Y_3 level of come the demand for money is OM_3 showing the same degree of interest elasticity. It is clear from the figure that even at a high rate of interest people want to keep cash for current transactions and hence we can say that the transaction demand for money is interest inelastic.

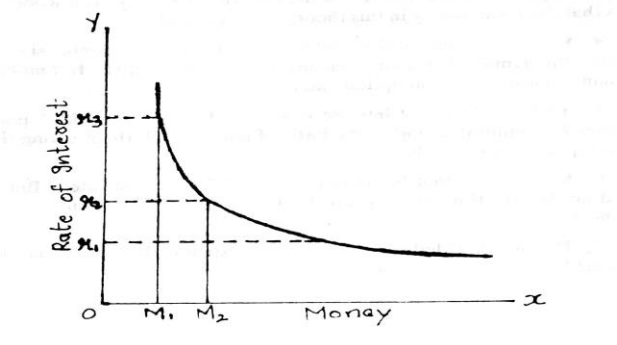
b) Precautionary Motive

Households and business concerns need more money because they have to take precautions against unforseen emergencies like sickness, accidents, fire, theft and unemployment. The amount of cash needed for this motive depends on the psychology of the individuals, his views about the future etc. Similarly businessmen hold cash to safeguard against uncertainties. Whether it is an individual or a firm the amount of cash needed to satisfy precautionary motive is a function of income, i.e., f(Y). Since both the transaction and precautionary motives for holding cash depend on income, Keynes put them together. Both these motives are the determinants of the demand for money. They are income elastic. Thus $M_1 + M_2 = L_1 = f(Y)$.

c) Speculative Motive

The third and the most important motive is the speculative demand for money. People keep cash because they want to take advantage of the changes in the prices of bonds and securities. If the people expect the price of the bonds and securities to rise, they like to purchase them with the money they have. On the other hand when people feel that the prices of bonds and securities are going to fall in the future they will keep more cash. The rate of interest is inversely related with the price of bonds and securities. That is when the rate of interest raises the price of bonds falls and viceversa. The amount of cash which the people wish to hold for speculative purpose depends on the expected change in the rate of interest.

$L_2 = f(r)$ where L_2 is the speculative demand for money and f (r) is the expected change in the rate of interest. The higher the rate of interest, the less shall be the demand for money in the form of idle cash balances and vice-versa. The speculative demand for money can be explained with the help of figure given below.



At a higher rate of interest r_3 people wish to hold OM_1 amount of money. Thus, at the maximum (highest) rate of interest liquidity preference declines and at a low rate of interest people wish to hold OM2 of money. Thus the liquidity preference increases at low rate of interest. If there is an increase in the liquidity preference, the liquidity preference curve will be shifted to the right.

Criticisms

1. Professor Hansen has pointed out that the Keynesian theory of interest is not free from criticisms. He pointed out that the liquidity preference theory is indeterminate. Rate of interest is determined by liquidity preference and supply of money. Liquidity preference itself is determined by the income level. Therefore, liquidity preference cannot be known unless income is known. Further rate of interest plays an important part in the determination of income level. Thus Prof. Hansen says that the Keynesian theory is in determinate.

2. To Prof. Hazlitt, Keynesian liquidity preference theory is only a monetary theory and it does not consider real factors like thrift, marginal productivity of capital and saving. Therefore, Keynes' theory of interest. is one sided. A full theory of interest should take note of the real factors like the supply of savings, marginal efficiency of capital and demand and supply of money. Keynes' theory of interest is not a real theory of interest.

3. Keynes says that interest is the reward for money. But Robertson says that the term money in this theory is too general.

4. Keynes concept of demand for money is not comprehensive. To Keynes the demand for money means liquidity preference. But money is demanded also for consumption and investment.

5. To Keynes rate of interest is a reward for parting liquidity. Keynes has omitted saving as the basis of liquidity. Without saving there is no liquidity to surrender.

6. Keynes says that liquidity is essential for interest rates. But this need not be so. If a person keeps his funds in the form of time deposits or short term treasury bills they will fetch him interest.

7. This is one sided theory because it explains the determination of interest by keeping the supply of money constant.

8. Keynes' theory of interest is applicable only to short period and not for long period.

9. To Keynes liquidity preference is the outcome of three motives. But there are other factors which are not stressed by Keynes.

10. Keynes' theory of interest is of limited value from the supply side. It is not only possible to reduce the rates of interest by increasing the supply of money. If the liquidity preference of the people also increases in the same proportion in which the supply of money increases then the rate of interest will remain unaffected.

Inspite of all these criticisms one should not lose sight of the fact that Keynesian liquidity preference theory has some distinct merits over other theories.

1. Firstly Keynes' theory is a monetary theory rather than a real theory. For it brought into light the role of money in the determination of the rate of interest.

2. Keynes' theory is applicable not only to full employment but also to a state of less than full employment level.

3. Keynes' theory has helped to interpret the theory of money with the general theory of output and employment.

4. The liquidity preference theory is dynamic and realistic because it gives importance to the store of value function of money.

5. The theory stresses the limitation of monetary and banking policy and its implications during the period of depression.

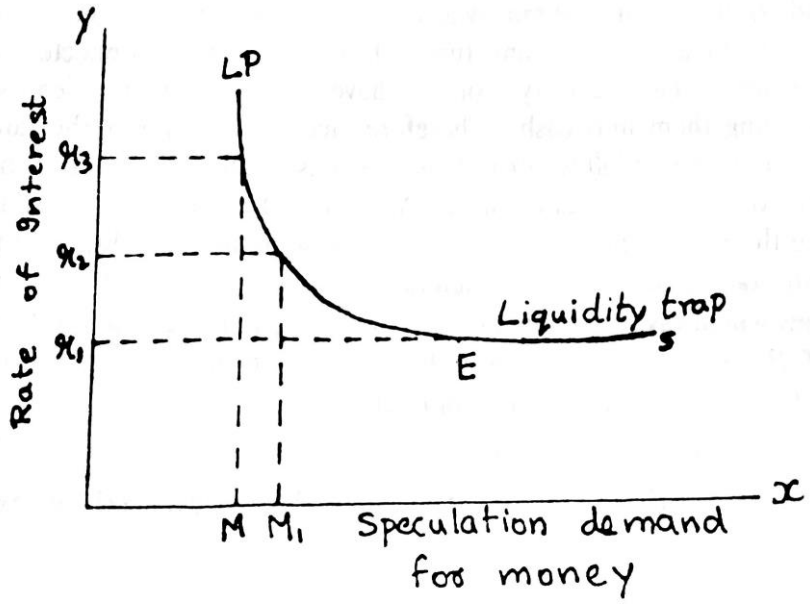
6. Keynes made it clear that interest determines the equilibrium between saving and investment.

Lord Keynes thus rendered a comprehensive analysis of the monetary sector. Though there are some limitations in his theory one cannot under-estimate the importance of Keynes' valuable contribution to the theory of interest.

The concept of Liquidity Trap

Keynes' liquidity theory explains the implication regarding the infinite interest-elasticity of the liquidity preference curve. The liquidity preference curve represents the demand for money arising out of transaction, precautionary and speculative motives. Liquidity trap is a situation at which the economy is trapped. Even though money income is reduced the rate of interest will not fall below a certain level.

The liquidity trap can be illustrated with the help of the figure given below .



When the rate of interest is r_3 percent the demand for money is also OM. The demand for money is shown by the LP curve. If the rate of interest falls, money income increases to OM_1. When the rate of interest increases the demand for cash

declines. This is shown by the downward sloping LP curve. The liquidity preference declines very rapidly at first but later it slopes down and finally it becomes horizontal. In the figure the liquidity preference declines rapidly at first because of high rate of interest. At the moderate rate of interest the demand for money is high and the LP curve slopes downwards to the right. In the figure the ES path of the LP curve shows the infinite elasticity of the demand for money. In other words the demand for money becomes perfectly elastic between E and S. The infinite interest elasticity of the LP curve is called as liquidity trap. The liquidity preference curve becomes flat at r_1. This implies that at r_1 percent rate of interest, even if the supply of money is increased people will keep that money in the form of cash. People would expect the rate of interest to go up in the future.

At low rate of interest people's liquidity preference increases so much that even an appreciable increase in the supply of money does not result in the further reduction of rate of interest. An important inference from liquidity trap is that the rate of interest cannot be reduced below a certain level even though such a reduction is essential. It is because of this liquidity preference we would find that the rate of interest would not fall to zero.

Prof. Hicks has criticized the liquidity preference analysis. He says that it is not the expectation regarding the rate of interest in people's mind but the quantity of money as it is more liquid. Money can be put to any use, in any way at any time. Liquidity is not connected with securities. The security holders have to face, inconveniences in converting them into cash. Therefore, according to Hicks the rate of interest can never fall to zero. This is because money is better than other assets, on account of its liquidity. An excess of money supply can never make the rate of interest fall to zero because money can always be used to buy goods and services. Again rate of interest can never fall to zero as money will always be demanded at a price, i.e., at a rate of interest. Thus Prof. Hicks explanation seems to be more convincing than that of Keynes who has explained that the rate of interest cannot fall to zero.

The MEC and Investment demand curve

The MEC of an asset will fall as more and more units of that asset are produced. To quote Keynes "*If there is an increased investment in any given type of capital during any period of time, the marginal efficiency of that type of capital will diminish as the investment in it is increased, partly because the prospective yield will fall as the supply of that type of capital is increased and partly because, as a rule pressure on the facilities for producing that type of capital will cause its supply price to increase.....".*

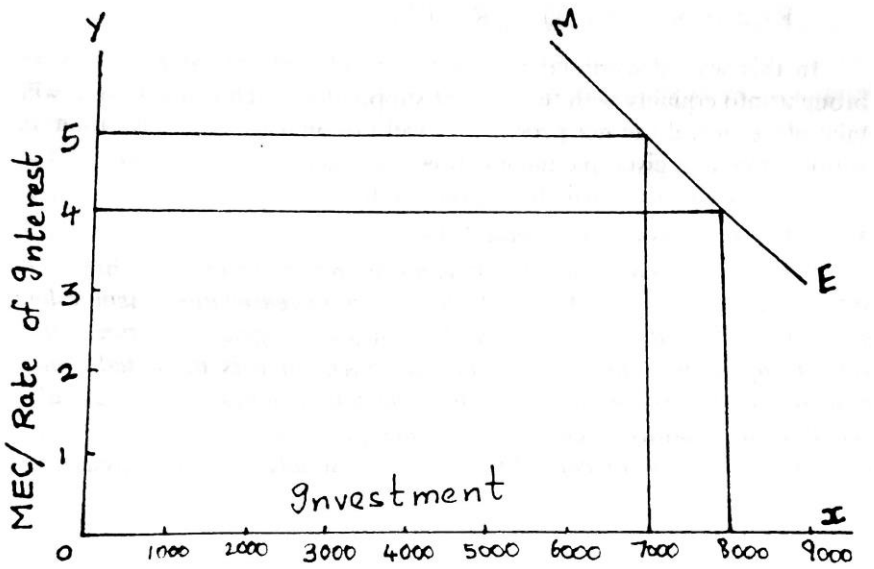
Two conclusions can be drawn from Keynes' statement.

1. The MEC of an asset will decrease progressively as investment in that asset increases.
2. The negative relationship between MEC and asset value is due to the prospective yield from the asset falling as the supply of that asset is increasing and is also due to the pressure on the facilities for producing that asset leading to an increase in its supply price.

Thus the decline in the prospective yield and the increase in the supply price of an asset will make for a lower MEC with an increased investment as shown in Table and figure given below.

Diminishing Marginal Productivity of Capital

Investment Rs.	**Marginal Efficiency of Capital Percentage**
1000	11
3000	9
5000	7
7000	5
9000	3
11000	1



In the above schedule when the investment is Rs. 1000/- the MEC is 11 percent. When investment increases to Rs. 3000 the MEC falls to 9 percent. Thus as investment increases MEC goes on declining. Finally when the investment increases to Rs.11,000 the MEC falls down to mere 1 percent. If the current rate of interest is 5 percent, then at this rate only Rs. 7000/- shall be invested because the investment results in an MEC of 5 percent. If the rate of interest falls to 3 percent then Rs. 9000 shall be invested. This is because at this investment MEC is also equal to 3 percent. Thus MEC and rate of interest are closely related.

In the above figure , ox represents investment and oy the marginal efficiency of capital and the rate of interest. When capital investment increases, marginal efficiency of capital decreases. Hence MEC curve slopes downwards. At 5 percent interest rate the capital investment is Rs. 7000 and at 3 percent it is Rs. 9000.

Marginal efficiency of capital and rate of interest

The volume of private investment depends on two factors MEC and rate of interest. The rate of interest like any other price is determined by demand and supply. On the demand side it is determined by liquidity preference and on the supply side the money available in the economy. As long as the MEC is greater than

the rate of interest the investor will invest till the MEC and rate of interest get equalised.

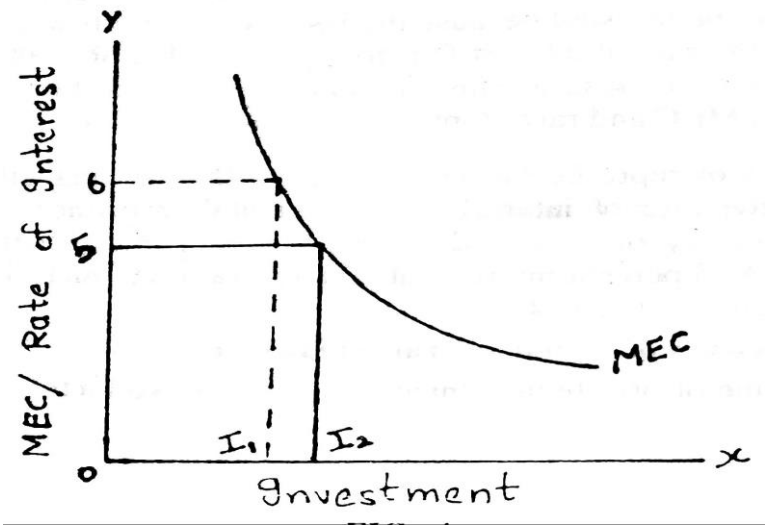
Supply Price (Rs.)	Annual Returns (Rs.)	MEC	Rate of interest	Effect on investment
50000	2000	4%	4%	Neutral
40000	2000	5%	4%	Favourable
50000	2000	4%	5%	Unfavourable

In the first case since MEC and the rate of interest are equal at 4% the effect of investment would be neutral. In such a case the investors will not go for new investment.

In the second case MEC is 5% and rate of interest is 4 %. The effect of investment will be favourable and the investors will go for new investment.

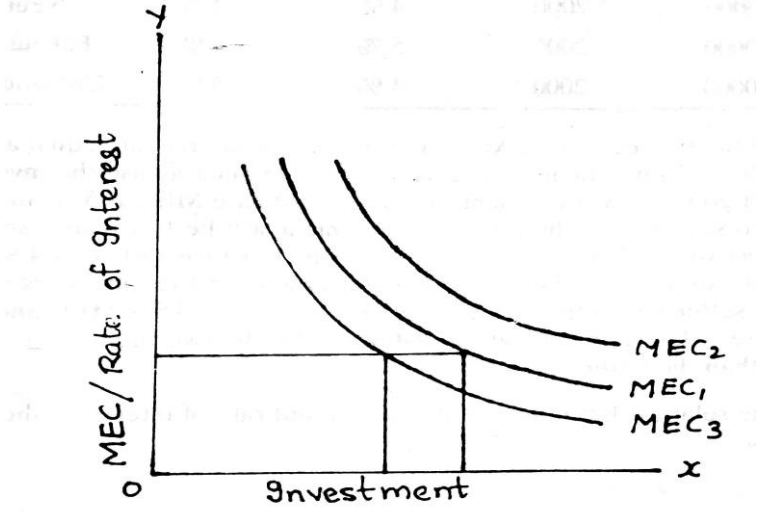
In the third case MEC is 4 % and interest rate is 5%. The effect is unfavourable and the investors would clearly suffer loss if they proceed with investment. Thus MEC and rate of interest determine private investment. Of the two the former is less stable than the latter.

The relationship between investment and rate of interest is shown in figure given below.

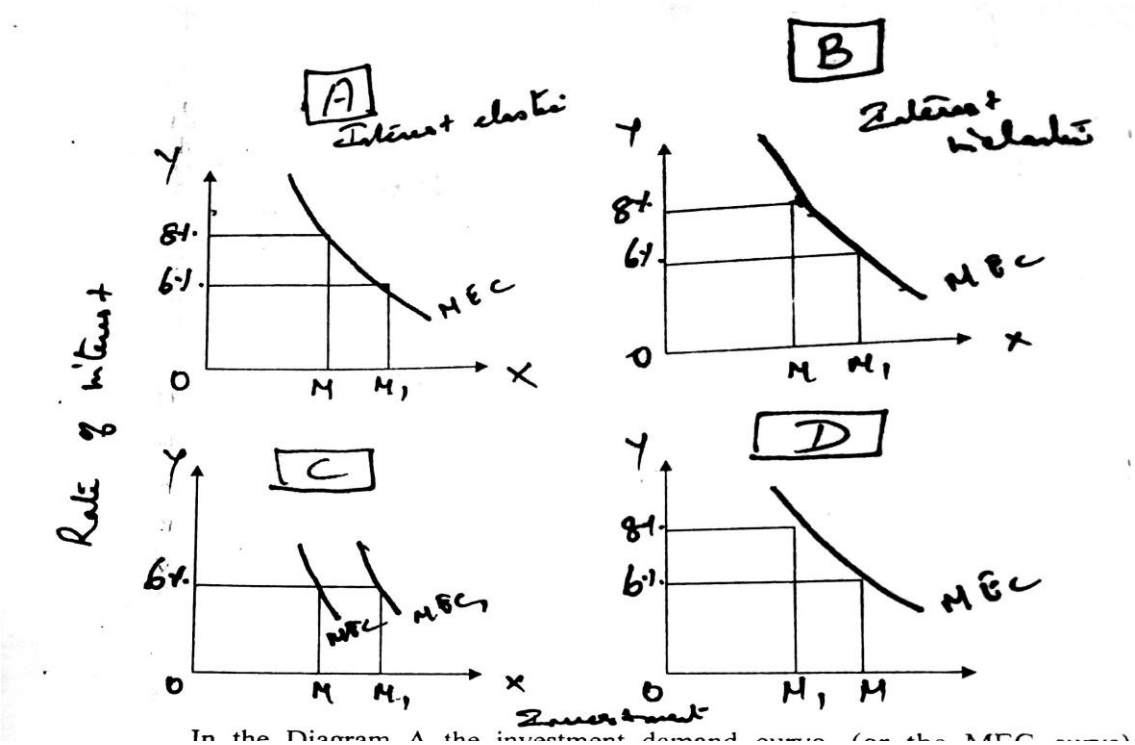


In the above figure shows that given the MEC, a fall in the rate of interest will increase the investment demand and a rise in the rate of interest will decrease the investment demand.

The shift in MEC schedule is shown in the figure given below.



In the Diagram A the investment demand curve, (or the MEC curve) happens to be interest-elastic. At 8% interest rate, the volume of I is OM. A fall in the rate of interest from 8% to 6% results is a large increase in the volume of I from OM to M1.



In the diagram B. the investment demand curve is interest inelastic. At 8% rate the volume of investment is OM. A fall in the rate of interest from 8% to 6% results only in a smaller increase in the volume of I from OM to OM1.

In the diagram C. the rate of interest remains constant at 6% but there is an increase in the MEC which is indicates by the curve MEC1. This result is an increase in the volume of I from OM to OM1.

In the Diagram D, there is no change in the MEC, but the rate of interest increases from 6% to 8% leading to a decline in the volume of investment from OM to OM1.

Criticism of the Marginal Efficiency of Capital

Keynes used the term marginal efficiency of capital in a vague manner. Secondly Keynes failed to recognize that interest rates are also governed by expectations like the marginal efficiency of capital. He considered marginal efficiency of capital in the field of dynamic economics and rate of interest in the field of static economics.