



S.Y.B.A.
SEMESTER - III (CBCS)

ECONOMICS PAPER - III
MACRO ECONOMICS - I

SUBJECT CODE - UAECO301

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Syllabus S.Y.B.A. Macro Economics - I

Semester III, Paper III

Preamble : This course is designed to provide an introduction to the students about the basic building blocks of Macro Economics which will serve as a foundation throughout their career.

Module I : Introduction to Macro Economics and National Income

Introduction Meaning and Scope of Macro Economics; Concepts of National Income; GNP, NNP, NDP, Per Capita Income, Personal Income and Disposal Income; Methods and Difficulties in Measurement of National Income; Circular flow of National Income; Closed Economy (Two and Three Sector) and Open Economy Models (Four Sector Model)

Module II : Consumption and Investment

Consumption and Investment; Says Law of Market; Theory of Effective Demand;
Consumption Function; Investment Function; Marginal Efficiency of Capital and Rate of Interest - Investment Multiplier

Module III : Supply of Money and Demand for Money

Supply of Money; Determinants of Money Supply; Velocity of Circulation of Money; RBI's Approach to Measurement of Money Supply; Demand for Money; Classical, Keynesian and Friedman's Approaches.

Module IV : Banking

Banking Commercial Bank, Functions of Commercial Banks, Multiple Credit Creation, Balance Sheet of Commercial Bank, Development in Commercial Banking Sector Since 1990-91; Central Bank; Functions of Central Bank - Traditional, Development, Promotional

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1. N. Gregory Mankiw, (2015), Principle of Macro Economics, 7th Edition, Cengage Learning.
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Module I

1

INTRODUCTION TO MACRO ECONOMICS

Unit Structure:

- 1.0 Objectives
- 1.1 Introduction
- 1.2 Meaning of Macro Economics
- 1.3 Scope of Macro Economics
- 1.4 Summary
- 1.5 Questions

1.0 OBJECTIVES

- To study the introduction and meaning of macro economics.
- To study the scope of macro economics.
- To study the importance of macro economics.

1.1 INTRODUCTION

Macroeconomics is that part of economic theory which studies the economy in its totality or as a whole. It studies not individual economic units like a household, a firm or an industry but the whole economic system. Macroeconomics is the study of aggregates and averages of the entire economy. Such aggregates are national income, total employment, aggregate savings and investment, aggregate demand, aggregate supply, general price level, etc.

Here, we study how these aggregates and averages of the economy as a whole are determined and what causes fluctuations in them. Having understood the determinants, the aim is how to ensure the maximum level of income and employment in a country. In short, macroeconomics is the study of national aggregates or economy-wide aggregates. In a way it is like study of economic forest as distinguished from trees that comprise the forest. Main tools of its analysis are aggregate demand and aggregate supply.

Since the subject matter of macroeconomics revolves around determination of the level of income and employment, therefore, it is also known as 'Theory of Income and Employment'. These days when the study of lakhs of individual units has become almost impossible and when government's participation through monetary and fiscal measures in the

economy has increased very much, use of macro analysis has become indispensable. Correct economic policies formulated at macro level have made it possible to control business cycles (inflation and deflation) and as a result violent booms and depressions have become things of the past. In a suitably modified form, macroeconomics is the basis of all plans of economic development of underdeveloped economies. Economists are now confidently exploring the possibilities and ways of maintaining economic growth and full employment. More than anything else, macroeconomic thought has enabled us to properly organise, collect and analyse the data about national income and coordinate international economic policies.

The scope of macroeconomics includes the following parts:

1. Theory of national Income
2. Theory of employment
3. Theory of money
4. Theory of general price level
5. Theory of economic growth

Clearly, the study of the problem of unemployment in India or general price level or problem of balance of payment is macroeconomic study because these relate to the economy as a whole.

1.2 MEANING OF MACRO ECONOMICS

The word Macro Economics is derived from Greek word 'Makros' meaning large or aggregate (Ragner Frisch). Macroeconomics analyses the behaviour of the economy as a whole, for e.g. study of National Income, General Price Level, National output, Business cycle etc. The credit for the development of Macroeconomic approach goes to J. M. Keynes.

Macroeconomics deals with economic affairs 'in the large'; it concerns the overall dimensions of economic life. It studies the character of the forest and not only a tree like Micro economics.

Uses of Macro Economics

- Macro economic analysis helps us to get an idea of how a complex economic system functions
- It is of great significance in formulating suitable economic policies for eg. Control of inflation, promotion of economic growth etc.
- It helps us in understanding the functioning of an economy as a whole.
- It helps us in studying phenomenon of trade cycle or business cycle.
- It helps us to evaluate the resources and capabilities of an economy. It will help us to increase NI, output etc.

- Macro economics helps us to study the problems related to the measurement of NI and related concepts
- It helps us to analyse the problems arising from frequent changes in the value of money. It helps us to understand the effects of inflation and deflation.
- It helps us to use monetary, fiscal policies for the economy as a whole.

1.3 SCOPE OF MACRO ECONOMICS

Macro Economics is of much theoretical and practical importance. Let us see what are the importance and the scope where macro economics are being used.

1. To Understand the working of the Economy

The study of macro economics variables is requisite for considerate the operation of the financial system. Our main economic complexities are associated with the performance of total income, irredundant and the normal price scale in the fiscal. These variables are geometrically measurable in this manner facilitating the probabilities of analysing the effects on the functioning of the economy.

2. In Economic Policies

Macro Economics is extremely useful from the view point of the fiscal policy. Modern Governments, particularly, the underdeveloped economies are confronted with innumerable national problems. They are the problems of over population, inflation, balance of payments, general under production etc. The main conscientiousness of these governments rests in the regulation and control of over population, general prices, general volume of commerce, general productivity etc.

3. In General Unemployment

Redundancy is caused by deficiency of effectual demand. In order eradicate it, effective demand should be raised by increasing total investment, total productivity, total income and consumption. Thus, macro economics has special significance in studying the causes, effects and antidotes of general redundancy.

4. In National Income

The study of macro economics is very significant for evaluating the overall performance of the economy in terms of national income. This led to the construction of the data on national income. National income data help in anticipating the level of fiscal activity and to comprehend the distribution of income among different groups of people in the economy.

5. In Economic Growth

The economics of growth is also a study in macro economics. It is on the basis of macro economics that the resources and capabilities of an

economy are evaluated. Plans for the overall increase in national income, productivity, employment are framed and executed so as to raise the level of fiscal development of the economy as a whole.

6. In Monetary Problems

It is in terms of macro economics that monetary problems can be analysed and understood properly. Frequent changes in the value of money, inflation or deflation, affect the economy adversely. They can be counteracted by adopting monetary, fiscal and direct control measures for the economy as a whole.

7. In Business Cycle

Moreover, macro economics as an approach to fiscal problems started after the great Depression, thus its significance falls in analysing the grounds of fiscal variations and in providing remedies.

8. For Understanding the Behaviour of Individual Units

For understanding the performance of individual units, the study of macro economics is imperative. Demand for individual products depends upon aggregate demand in the economy. Unless the causes of deficiency in aggregate demand are analysed it is not feasible to understand fully the grounds for a fall in the demand of individual products. The reasons for increase in costs of a specific firm or industry cannot be analysed without knowing the average cost conditions of the whole economy. Thus, the study of individual units is not possible without macro economics.

1.4 SUMMARY

We may conclude that macro economics enriches our knowledge of the functioning of an economy by studying the behaviour of national income, productivity, investment, savings and consumption. Further more, it throws much light in solving the problems of redundancy, inflation, economic instability and economic growth. The concept of stock and flow are mainly used in the macro economics or in the theory of income, productivity and employment. Lastly, both the concepts of stock and flow variables are very significant in modern theories of income, interest rate, business cycles etc.

1.5 QUESTIONS

1. What is Macro economics? Explain Nature of macroeconomics.
2. Explain the Scope & importance of macroeconomics.
3. Describe the limitations or drawbacks of macroeconomics.
4. Distinguish between Micro and Macro Economics.



INTRODUCTION TO NATIONAL INCOME

Unit Structure:

- 2.0 Objectives
- 2.1 Introduction
- 2.2 Concepts of National Income: GNP, NNP, NDP, Per Capita Income, Personal Income and Disposal Income
- 2.3 Methods of Measurement of National Income
- 2.4 Difficulties in Measurement of National Income
- 2.5 Circular Flow of Income
 - 2.5.1 Circular Flow of Income in Two Sector Economy
 - 2.5.2 Circular Flow of Income in Three Sector Economy
 - 2.5.3 Circular Flow of Income in Four Sector Economy
- 2.6 Summary
- 2.7 Questions

2.0 OBJECTIVES

- To study the various concepts national income.
- To study the measurement of National Income and difficulties in measurement of National Income.
- To study the circular flows of income in two, three & four sector economy.

2.1 INTRODUCTION

Macroeconomics deals with study of aggregates. The macro variables are aggregate demand, Aggregate Supply, National Income, national output, National expenditure, Inflation, unemployment, international trade, balance of payment, fiscal and monetary policy etc.

As from above it is clear that national income is macro Variable and it determines total income of nation. National income can be defined as total money value of final goods and services produced in a country over a period of one year including income from abroad without duplication.

In India since 1955, Central Statistical organization took the responsibility of calculation of national income in closed economy basically when we consider two sector model the three factors are expressed as:

National Expenditure = National Product = National income or Dividend.

- a. National Expenditure is total spending on the goods and services produced during a given year.
- b. National product is total goods and services produced during one year and measured in money terms.
- c. National income or dividend is total income earned by factors of production during given period of one year.

Definition:

- **According to A.C. Pigou**, “National income is that part of objective income of the community, including of course income derived from abroad which can be measured in money.”
- **According to Fisher**, “The National dividend or income consists solely of services as received by ultimate consumers, whether from their material or from the human environments. Thus, a piano, or an overcoat made for me this year is not a part of this year’s income, but an addition to the capital. Only the services rendered to me during this year by these things are income.”
- **According to Marshall**, “The labour and capital of a country, acting on its natural resources, produce annually a certain net aggregate of commodities, material and immaterial, including services of all kinds and net income due on account of foreign investments must be added in. This is the true net annual income or revenue of the country, or the national dividend.”
- **As per national income committee the national income is defined as**, "the value of commodities and services produced in an economy during a given period, counted without duplication."

2.2 CONCEPTS OF NATIONAL INCOME

2.2.1 Gross National Product (GNP):

GDP refers to the value of final goods and services produced within the country in a, particular year. GDP is different from GNP. A part of GNP may be produced outside the country For example the money earned by the Indians working in USA is a part of India's GNP But it is not a part of GDP since they are earned abroad. Therefore the boundaries of GNP are determined by the citizens of a country whereas the boundaries of GDP are determined by the geographical limits of a country. It is also clear that the difference between GDP and GNP is due to the "net revenue from abroad." If the citizens of a country are earning more from abroad than foreigners are earning in that country, GNP exceeds GDP If the foreigners in the country are earning more than its citizens are earning abroad, GNP is less than GDP.

2.2.2 Net National Product :

This is a very important concept of national income. In the production of gross national product, during a year, some capital is used up or consumed i.e. equipment, machinery etc. the capital goods wear out or undergo depreciation. Capital goods fall in value due to its use in production process. By deducting the charges for depreciation from the gross national product, we get the net national product. It means the market value of all the final goods and services after providing for depreciation. It is called national income at market prices. In other words, net national product is the total value of final goods and services produced in the country during a year after deducting the depreciation, plus net income from abroad.

2.2.3 Net Domestic Product (NDP):

NDP is obtained by subtracting the depreciation from the GDP. NDP differs from MNP due to the net income from abroad. If the net income from abroad is positive, NDP will be less than NNP. If the net income from abroad is negative, NDP will be greater than NNP. NDP is also calculated either at market price or at factor cost.

National Income at Factor Cost:- means sum total of all income earned by resource suppliers for their contribution of land, labour, capital and entrepreneurial ability which go into the year's net production. National income at factor cost shows how much it costs society in terms of economic resources to produce the net output. We use the term national income for the national income at factor prices.

National Income at factor cost = Net national product (National Income at market prices) - (indirect taxes +Subsidies)

2.2.4 Per Capita Income (PCI):

Per Capita Income is obtained by dividing National Income by the population.

$$\text{Per Capita Income} = \frac{\text{National Income}}{\text{Population}}$$

Per Capita Income highlights the average income of the people in the country.

2.2.5 Personal Income (PI):

Personal income is the sum of the income actually received by individuals or households during a given year. Personal incomes earned are different from national income. Some incomes which are earned such as social security contributions corporate income taxes and undistributed corporate profits are not actually received by households. In the same manner, some incomes which are received like transfer payments are not currently earned ex Old age pension, unemployment compensation, relief payments interest payments etc. To get personal income from national we

must subtract from National income the three types of incomes which are earned but not received and add incomes that are not currently earned,

Personal income = N.I - Social Security - contributions - corporate income taxes -undistributed corporate profit + Transfer Payments.

2.2.6 Disposable Income (DI):

The personal income which remains after payment of taxes to the government in the form of income tax, personal property tax etc., is called disposable income. Disposable income = Personal Income - Personal Taxes. An individual can decide to consume or save the disposable income as he wishes.

2.3 METHODS OF MEASUREMENT OF NATIONAL INCOME

For measuring national income, the economy through which people participate in economic activities, earn their livelihood, produce goods and services and share the national products is viewed from three different angles :

1. The national economy is considered as an aggregate of producing units combining different sectors such as agriculture, mining, manufacturing, trade and commerce, etc.
2. The whole national economy is viewed as a combination of individuals and households owing different kinds of factors of production which they use themselves or sell factor services to make their livelihood.
3. The national economy may also be viewed as a collection of consuming, saving and investing units (individuals, households and government).
4. National income may be measured by three different corresponding methods :
 - A) Net product method
 - B) Factor-income method
 - C) Expenditure method

A. Net product method

It is also called the Value Added Method. It consists of three stages : i) estimating the gross value of domestic output in the various branches of production; ii) determining the cost of material and services used and also the depreciation of physical assets; iii) deducting these costs and depreciation from gross value to obtain the net value of domestic output.

Measuring gross value :For measuring the gross value of domestic product, output is classified under various categories and it is computed in two alternative ways : i) by multiplying the output of each category of sector by their respective market price and adding them together, or ii) by collective data about the gross sales and changes in inventories from the account of the manufacturing enterprises and computing the value of GDP

on the basis thereof. If there are gaps in data, some estimates are made thereof and gaps are filled.

Estimating cost of production : is, however a relatively more complicated and difficult task because of non-availability of adequate and requisite data. Countries adopting net-product method find some ways and means to calculate the deductible cost. The costs are estimated either in absolute terms or as an overall ratio of input to the total output. The general practice in estimating depreciation is to follow the usual business practice of depreciation accounting.

Following a suitable method, deductible costs including depreciation are estimated for each sector. The cost estimates are then deducted from the sectoral gross output to obtain the net sectoral products. The net sectoral products are then added together. The total thus obtained is taken to be the measure of net national products or national income by net product method.

B. Factor-Income Method

This method is also known as income method and factor-income method. Under this method, the national income is calculated by adding up all the incomes accruing to the basic factors of production used in producing the national product¹¹ The total factor-incomes are grouped under three categories :

i) Labour incomes : included in the national income have three components :

a) wages and salaries paid to the residents of the country including bonus and commission and social security payments; b) supplementary labour incomes including employer's contribution to social security and employers welfare funds and direct pension payments to retired employees; c) supplementary labour incomes in kind, e.g. free health and education, food and clothing, and accommodation, etc. Compensations in kind in the form of domestic servants and other free-of-cost services provided to the employees are included in labour income. War bonuses, pensions, service grants, are not included in labour income as they are regarded as transfer payments. Certain other categories of income, e.g., incomes from incidental jobs, gratuities, tips etc., are ignored for lack of data.

ii) Capital incomes : According to Studenski, capital incomes include the following capital earnings

- a) Dividends excluding inter-corporate dividends;
- b) Undistributed before-tax profits of corporations;
- c) Interest on bonds, mortgages, and savings deposits (excluding interests on war bonds, and on consumer-credit)
- d) Interest earned by insurance companies and credited to the insurance policy reserves;
- e) Net interest paid out by commercial banks;

- f) Net rents from land, building, etc., including imputed net rents on owner-occupied dwellings;
- g) Royalties;
- h) Profits of government enterprises.

iii) Mixed income : include earnings from

- a) Farming enterprises;
- b) Sole proprietorship (not included under profit or capital income)
- c) Other professions, e.g., legal and medical practices, consultancy services, trading and transporting etc. This category also includes the incomes of those who earn their living through various sources as wages, rent on own property, interest on own capital, etc.

All these three kinds of incomes added together give the measure of national income by factor income method.

C. Expenditure Method

Also known as final product method, measures national income at the final expenditure stages. In estimating the total national expenditure, any of the two following methods are followed ;

First, all the money expenditures at market price are computed and added up together, and Second, the value of all the products finally disposed of are computed and added up, to arrive at the total national expenditure.

The items of expenditure which are taken into account under the first method are

- a) Private consumption expenditure;
- b) Direct tax payments;
- c) Payments to the non-profit making institutions and charitable organizations like schools, hospitals, orphanages, etc.
- d) Private savings.

Under the second method, the following items are considered

- a) Private consumer goods and services;
- b) Private investment goods;
- c) Public goods and services;
- d) Net investment abroad.

The second method is more extensively used because the data required in this method can be collected with greater ease and accuracy.

Treatment of Net Income from Abroad :

Nowadays, most economies are open in the sense that they carry out foreign trade in goods and services and financial transactions with the rest of the world. In the process, some nations get net income through foreign trade while some lose their income to foreigners. The net earnings or loss in foreign trade affects the national income. In measuring the national income, therefore, the net result of external transactions are adjusted to the total. Net incomes from abroad are added

to, and net losses to the foreigners are deducted from the total national income arrived at through any of the above three methods.

Briefly speaking, all exports of merchandise and of services like shipping, insurance, banking, tourism and gifts are added to the national income. And all the imports of the corresponding items are deducted from the value of national output to arrive at the approximate measure of national income. To this is added the net income from foreign investment. These adjustments for international transactions are based on the international balance of payments of the nations.

2.4 DIFFICULTIES IN MEASUREMENT OF NATIONAL INCOME

1. Changes in the general level of prices form the basis for measuring the changes in the value of money. The concept of the general price level is not very clear.
2. Change in the general price level does not reflect the price of each and every commodity. All prices do* not change at the same rate. ,
3. It is difficult to select commodities since the pattern of consumption is not uniform.
- 4 There are practical difficulties in assessing weights on the basis of their importance in consumption.
- 5 Base year is selected arbitrarily

2.5 CIRCULAR FLOW OF INCOME

The circular flow of money refers to the process whereby money payments and receipts of an economy flow in a circular manner continuously over a period of time. The various components of money payments and receipts are saving, investment, taxation, loans, government purchases, exports, imports, etc. These are shown on diagram in the form of current and cross-current in such a manner that the total money payments equals the total money receipts in the economy.

The modern economy is a monetary economy, where money is used in the process of exchange. The modern economy performs economic activities such as production, exchange, consumption and investment. In order to carry out these economic activities people are involved in buying and selling of goods and services. The transactions take place between different sectors of the economy. The process of production and exchange generates two kinds of flows.

1. Product or real flow, that is the flow of goods and services, and
2. Money flow.

Product and money flow in opposite direction in a circular way. The product flow consists of a) factor flow, that is flow of factor services

and b) goods flow that is flow of goods and services. In a monetized economy the flow of factor services generates money flows in the form of factor payments which take the form of money flows. The factor payments and expenditure on consumer goods and services take the form of expenditure flow. Expenditure flow is in the form of money flow. Both income and expenditure flow in a circular manner in opposite direction. The entire economic system can therefore be viewed as circular flows of income and expenditure. The magnitude of these flows determines the size of national income. We can explain how these flows are generated and how they make the system work.

The economists, however use simplified models to explain the circular flow of income and expenditure dividing the economy into four sectors namely, I) Household sector, II) Business or Firms sector , III) Government sector, and IV) Foreign sector. These sectors are combined to make the following three models for the purpose of showing the circular flow of income.

- I) Two- sector model including the household and business sectors;
- II) Three- sector model including the household, business and government sectors; and
- III) Four- sector model including the household, business, government and the foreign sectors.

2.5.1 Circular Flow of Income in Two Sector Economy

We begin with a simple hypothetical economy where there are only two – sectors, the household and business firms which represent a closed economy and there is no government and no foreign trade. The household sector owns all the factors of production that is land, labour, capital and enterprise. This sector receives income in the form of rent, wages, interest and profit, by selling the services of these factors to the business sector. The business sector consists of producers who produce goods and sell them to the household sector. The household sector consists of consumers who buy goods produced by the business sector.

Thus in the first instance, money flows in the form of such income payments as rent, wages, interest and profits from the business sector to the household sector when the former buys the services of the factors of production to produce goods. Money so received is, in turn, spent by the household sector to buy goods produced by the business sector. In this way money flows in a circular manner from the business sector to the household sector and from the household sector to the business sector in the economy.

The circular flow in a two sector economy is depicted in Fig. 1.1 where the flow of money as income payments from the business sector to the household sector is shown in the form of an arrow in the upper portion of the diagram. On the other hand, the flow of money as consumption expenditure on the purchase of goods and services by the household sector

is shown to go the business sector by an arrow in the lower portion of the diagram. As long as income payments by the business sector for factor services are returned by the household sector to purchase goods, the circular flow of income payments and consumption expenditure tends to continue indefinitely. Production equals sales or supply equals demand, and the economy will continue to operate at this level in a circular flow of money.

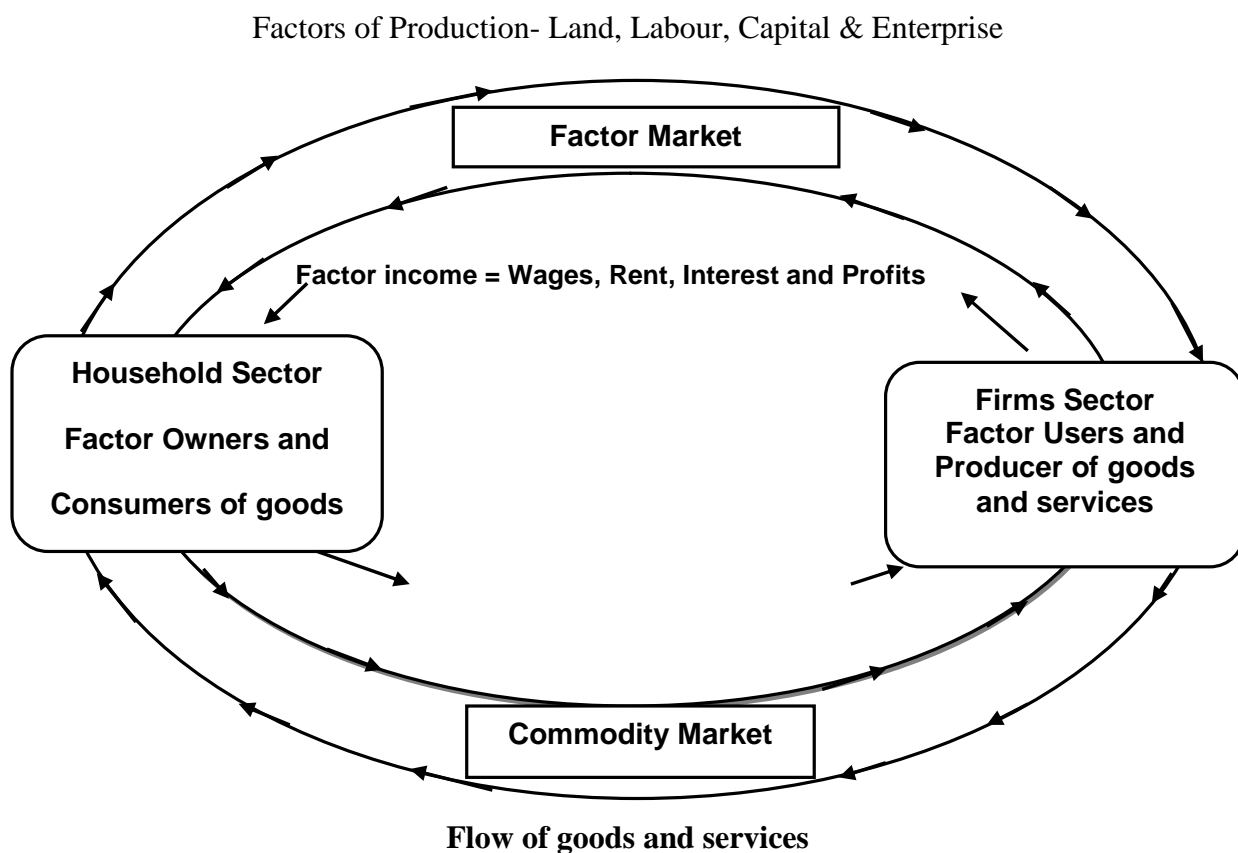


Fig. 2.1

The above analysis of circular flow of income and expenditure in a two – sector closed economy is based on following assumptions.

1. The economy consist of two sectors namely household and business or firms;
2. Household sector spends their entire income received in the form of rent, wages, interest and profits from the business sector on buying of goods and services produced by the firms. They do not hold or save any part of their income.
3. The business firms keep their production exactly equally to their sales or as much as demanded by the households. There are no changes in their inventories.
4. The business sector does not keep any undistributed money as reserve. The money it receives by selling goods and services to the household

sector is fully spent in making payments as rent, wages, interest and profits to the household sector.

5. There are no government operations.
6. There is no inflow or outflow of income or no foreign trade.

It is these assumptions that keep the flow of money to move in a circular manner in the economy. But these assumptions are unrealistic and do not fit in the actual working of the economy.

Circular Flow of Money in a Two Sector Economy with Saving and Investment:

In the analysis of circular flow of income in a two sector economy, we have assumed that, all money income received by the households is spending on consumer goods and services. But in reality, the households do not spend their entire money income on goods and services. They save a part of their income for various purposes. Let us now explain if households save a part of their income, how their savings will affect money flow in the economy.

When households save, their expenditure on goods and services will decline to that extent and as a result money flow to business firms will contract. With reduced money income firms will hire fewer workers or reduce payments to the factors of production. This will lead to the fall in total income of the households. Thus, savings reduce the flow of money expenditure to business firms and cause a fall in economy's total income. Economist, therefore call savings a leakage from the money expenditure flow.

But savings by households will not reduce aggregate expenditure and income, if their savings are brought back into the flow of expenditure. In free market economies financial market consists of commercial banks, stock market and non-bank financial institutions etc. plays an important role of mobilization of savings, where households deposit their savings. On the other hand, business firms borrow money from the financial market for the purpose of investment. Thus, through the financial market savings and investment are again brought into the expenditure stream and as a result total flow of spending does not decrease. Circular flow of money with savings and investment is explained with the help of following assumptions.

1. All the households need to deposit their savings with the financial institutions\ market.
2. There are no inter-households borrowings.

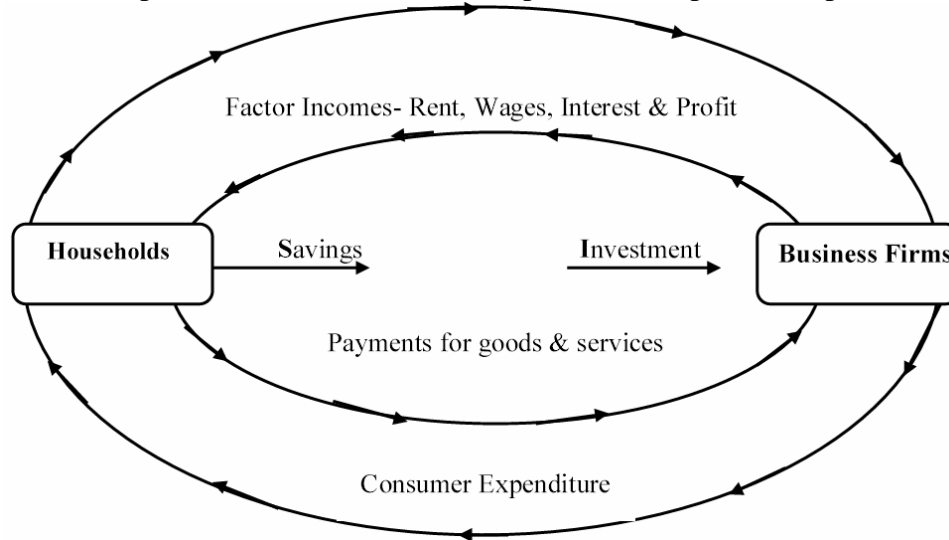
In the following figure, in the middle of the circle a box represents financial market. Money flow of savings is shown from households towards the financial market. Then the flow of investment expenditure is shown as borrowing by business firms from the financial market.

The circular flow of money with savings and investment is shown in the following fig. 2.2.

Flow of goods & services

Fig.2.2

Factors of production- Land, Labour, Capital & Entrepreneurship



The necessary condition for the constant flow of income is savings must be equal to investment. As mentioned above, saving a part of income is not spent on consumer goods and services. In other words, saving is *withdrawal* of some money from the income flow. On the other hand, investment means some money is spent on buying new capital goods to expand production capacity. In other words, investment is *injection* of some money in circular flow of income. But savings and investments in an economy need not necessarily be equal.

If planned savings is more than planned investment expenditure, income, output and employment will fall and therefore, flow of money will decline. On the contrary, if planned investment expenditure is more than planned savings, income, output and employment will rise and therefore, flow of money will increase. Thus, the economy will be in equilibrium if planned savings is equal to planned investment expenditure.

It is clear from the above analysis that, the flow of money will continue at a constant level only when the condition of equality between planned savings and planned investment is satisfied.

2.5.2 Circular Flow of Income in Three Sector Economy

The two sector economy model consists of households and business firms. But in a three sector economy additional sector is government sector. Government affects the economy in many ways. Here we will concentrate on its taxing, spending and borrowing roles. In the modern economy government plays variety of role. Government performs different functions. For this it requires huge amount of income. Government receives income in the form of taxes from households and

business firms. Taxes are paid by the households and business firms which not only reduces their disposable income but also their expenditure and savings.

Governments' spending includes expenditure on goods and services, pension payments, unemployment allowance etc. Money spent by Government is an injection of income into the economy which further received by the households and business firms.

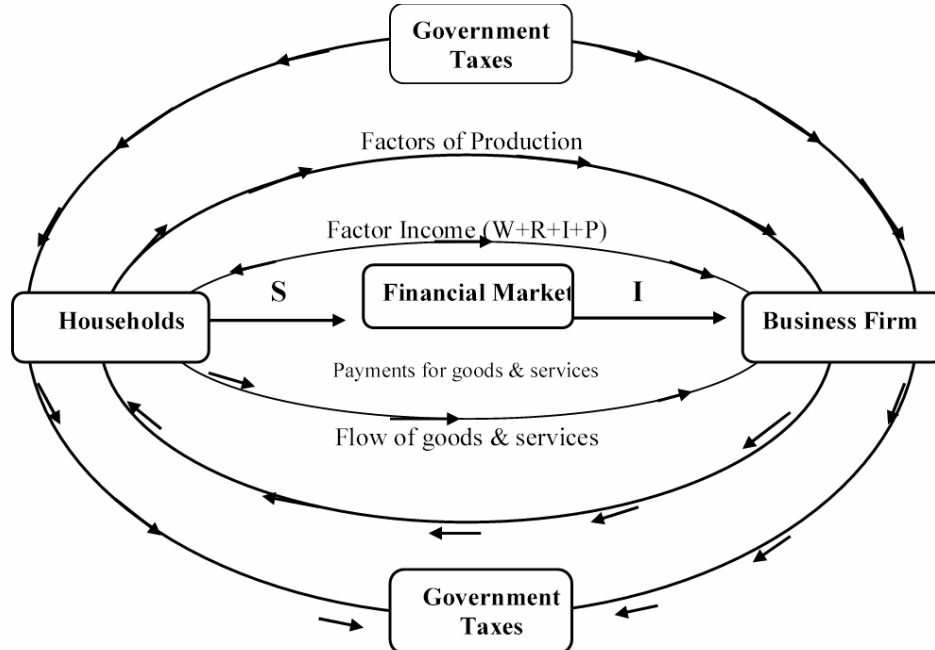
Another important method of financing Government expenditure is borrowing from financial market. This is represented by money flow from the financial market to the Government is labeled as Government borrowing.

In a three sector economy we have the following three economic agents.

1. Households and business firms
2. Financial sector
3. Government

The circular flow of income in a three sector economy is shown in the following fig. 2.3.

Wages, Salaries & Payments Purchase of goods & services



The above figure clearly shows that, income received by the Government in the form of taxes from households and business firms is used for spending in the form of wages, salaries, allowances, pension, subsidies and purchases of goods and services from them. Money spent by the Government is received by the households and business firms.

Thus, the *leakages (withdrawal)* in the form of savings and taxes arise in the circular flow of income. The savings and taxes are further get *injected* back into the circular flow of income in the form of investment and Government spending. When these *leakages (withdrawal)* are equal to *injections* in the form of investment and Government spending the flow of money in the economy operates smoothly.

The inclusion of the Government sector significantly affects the overall economic situation. Total expenditure flow in the economy is the sum of consumption expenditure (C), investment expenditure (I), and Government expenditure (G).

Thus, it is symbolically expressed as,

$$\text{Total expenditure (E)} = C + I + G$$

Total income (Y) received is allocated to consumption (C), savings (S) and taxes (T).

Thus, symbolically expressed as,

$$Y = C + S + T$$

Since expenditure (E) made must be equal to the income received (Y) from equation above we have

$$C + I + G = C + S + T$$

Since C occurs on both sides of the equation and will therefore be cancelled out, we have

$$I + G = S + T$$

By rearranging we obtain

$$G - T = S - I$$

This equation is very significant because it shows what would be the consequences if Government budget is not balanced. If Government expenditure (G) is greater than the tax (T), the Government will have a budget deficit. To finance the budget deficit, the Government will borrow from the financial market. For this purpose, then private investment by business firms must be less than the savings of the households. Thus Government borrowing reduces private investment in the economy.

2.5.3 Circular Flow of Income in Four Sector Economy

So far the circular flow of money has been shown in the case of a closed economy. But the actual economy is an open one where foreign trade plays an important role. Exports are an *injection* or inflows into the circular flow of money. They create incomes for the domestic firms. When foreigners buy goods and services produced by domestic firms, they are exports in the circular flow of money. On the other hand, imports are

leakages from the circular flow of money. They are expenditure incurred by the household sector to purchase goods and services from foreign countries. These exports and imports in the circular flow are shown in fig. 1.4.

Take the inflows and outflows of the household, business and government sectors in relation to the foreign sector. The household sector buys goods imported from abroad and makes payments for them which is a leakage from the circular flow of money. The householders may receive transfer payments from the foreign sector for the services rendered by them in foreign countries.

On the other hand, the business sector exports goods to foreign countries and its receipts are an injection in the circular flow of money. Similarly, there are many services rendered by the business firms to foreign countries such as shipping, insurance, banking etc. for which they receive payments from abroad. They also receive royalties, interest, dividends, profits, etc. for investment made in foreign countries. On the other hand, the business sector makes payments to the foreign sector for imports of capital goods, machinery, raw materials, consumer goods and services from abroad. These are the leakages from circular flow of money.

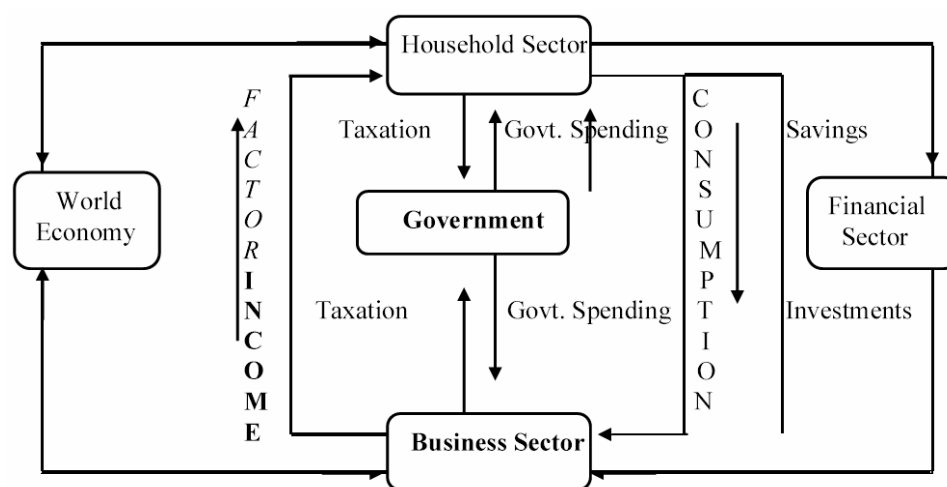


Fig.2.4

Like the business sector, modern governments also export and import of goods and services, and lend to and borrow from foreign countries. For all exports of goods, the government receives payments from abroad. Similarly, the government receives payments from foreigners when they visit the country as tourists and for receiving education, etc. and also when the government provides shipping, insurance and banking services to foreigners through the state-owned agencies. It also receives royalties, interests, dividends, etc. for investments made abroad. These are injections into the circular flow of money. On the other hand, the leakages are payments made to foreigners for the purchase of goods and services.

Figure 2.4 shows the circular flow of money in four sector open economy with saving at the right hand and taxes and imports at the left hand shown as leakages from the circular flow on the upper side of the figure, and investment, and government purchase (spending) on the right hand side and exports as injections into the circular flow, on the lower level left hand side of the figure. Further, imports, exports and transfer payments have been shown to arise from the three domestic sectors- the household, the business and the government. These outflows and inflows pass through the foreign sector which is also called the 'Balance of Payments Sector.'

Thus Figure 2.4 shows the circular flow of money where there are inflows and outflows of money, receipts and payments among the business sector, the household sector, the government sector, and the foreign sector in current s and cross- currents.

Importance of Circular Flow of Income:

1. To understand the functioning of the economy - Money being the life blood of a modern economy, its circular flow gives a clear picture of the economy. We can know from its study whether the economy is working smoothly or there is any disturbance in its smooth functioning. The circular flow of money is important for studying the functioning of the economy and for helping the government in formulating polity measures.
2. To understand the link between producers and consumers – The circular flow of money establishes a link between producers and consumers. It is through money that producers buy the services of factors of production from the household sector and in turn household sector purchases goods and sector from the producers.
3. To find out the leakages in circular flow of income – Leakages or injections in the circular flow of money disturb the smooth function of the economy. For example, saving is a leakage out of the expenditure stream. If saving increases, this contracts the circular flow of money. This tends to reduce employment, income and prices thereby leading a deflationary process in the economy. On the other hand, consumption expenditure and investment are injections in the circular flow of money which help to increase employment, income, output and prices and thus lead to inflationary tendencies.
4. Highlights the importance of monetary and fiscal policies – The study of the circular flow of money also highlights the importance of monetary policy in bringing about the equality between savings and investment through the capital market. Similarly, it also points out the importance of fiscal policy in bringing about the equality between saving plus taxes and investment plus government expenditure.

To conclude, the circular flow of money possesses much theoretical and practical significance in an economy.

2.6 SUMMARY

1. The circular flow of money refers to the process whereby money payments and receipts of an economy flow in a circular manner continuously over a period of time.
2. In the Two sector economy money flows in a circular manner from the business sector to the household sector and from the household sector to the business sector in the economy.
3. In a three sector economy we have the following three economic agents, Households and business firm, Financial sector, and Government.
4. The circular flow of money where there are inflows and outflows of money, receipts and payments among the business sector, the household sector, the government sector, and the foreign sector in current s and cross- currents.
5. National income may be measured by three different corresponding methods : Net product method, Factor-income method and Expenditure method.
6. Measurement of National Income in India : The earliest estimate of India's national income was made by Dadabhai Naoroji in 1867-68.
7. In 1949, A National Income Committee (NIC) was appointed. In 1967, the task of estimating national income was given to the Central statistical Organization (CSO).

2.7 QUESTIONS

1. Explain the various concepts of national income.
2. Explain the methods of measurement of national income and also explain the difficulties in national income.
3. Explain the circular flow of income in two sector economy with diagram.
4. Explain the circular flow of income in three sector economy with diagram.
5. Explain the circular flow of income in four sector economy with diagram.



CONSUMPTION

Unit Structure:

- 3.0 Objectives
- 3.1 Introduction
- 3.2 Meaning of Consumption
- 3.3 Consumption Function
- 3.4 Say's Law of Market
- 3.5 Theory of Effective Demand
- 3.6 Summary
- 3.7 Questions

3.0 OBJECTIVES

- To study the concepts of consumption & consumption function.
- To study the say's law of market.
- To study the theory of effective demand.

3.1 INTRODUCTION

The consumption is the key macroeconomic concept which decides or affects whole economy like as national income, employment, full employment level and many more. That is why, there is need to understand the concept of consumption in the study of macroeconomics.

3.2 MEANING OF CONSUMPTION

What is Consumption?

Consumption is the utility driven phenomena where consumption happened of goods and services, definitely utility is acquired from it. That is why, we stated above consumption is the utility driven act. The various macro economists define the consumption in the economy. Most important among them is given by Prof. J. M. Keynes who defined short term consumption function in his famous psychological consumption theory.

Relationship between Consumption and Income:

When income increases, consumption also increases; but it is not as much as income. This important fact of consumption was focused by Keynes who first of all evolved the concept of consumption function. Why it happens, because whatever income increases which is not consumed all, some were saved. So, that is the main reason behind it.

Keynesian linear consumption function is as follow:

$$C = a + bY$$

Where,

C = consumption

a = autonomous consumption

b = intercept term/ slope (coefficient of disposable income/ marginal propensity to consume (MPC)

Y = disposable income.

Above Keynesian consumption function is explained by following figure-

3.3 CONSUMPTION FUNCTION

In Keynes theory of income and employment, we have already seen that the volume of employment in a society depends on the level of effective demand which in turn is determined by the aggregate demand function. The aggregate demand is made up of 2 components i.e. consumption expenditure and investment expenditure. Consumption expenditure is a major component of aggregate demand in a economy. The consumption expenditure depends on the size of income and propensity to consume, which is called consumption function. The marginal efficiency of capital and the rate of interest determine investment. The Investment multiplier expresses the relationship between the increases in investment and increases in consumption. We will be studying the consumption function and the investment multiplier in this unit.

In macro economic theory, Keynes singled out income as the main determinant-Of consumption. The relationship is expressed in the form of a function. The consumption function is the assumed direct relationship between the national income level and the planned or desired consumption expenditure. Keynes called it the propensity to consume. Algebraically the basic relationship between consumption spending and national income is shown as

$$C = f(Y)$$

'C' stands for consumption function, 'Y' stands for national income, 'f.' stands for functional relationship.

The simplest form of relationship between income and consumption can be expressed as follows.

$$C = cY$$

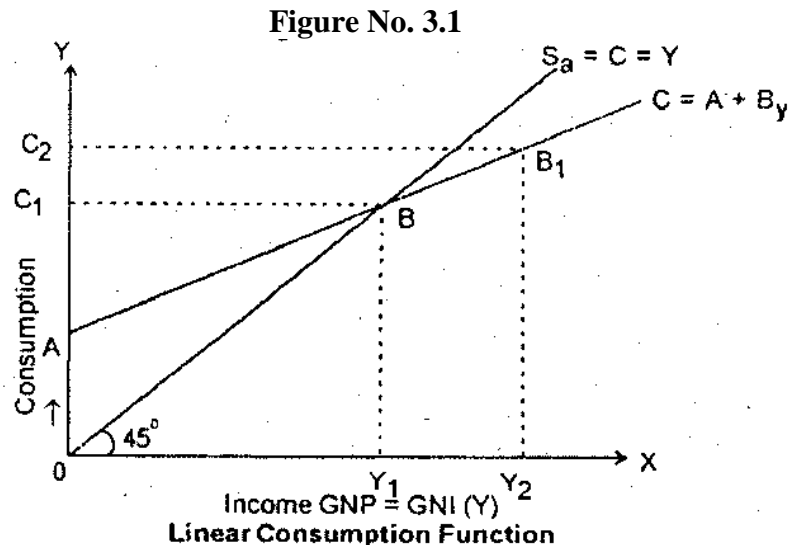
This means that the consumption (C) is a constant proportion (c) of income (Y)

According to Keynes, at various income levels, a schedule of the propensity to consume is a statement showing the functional relationship between the level of consumption at each level of income.

TABLE: 3.2
CONSUMPTION FUNCTION

INCOME Y	CONSUMPTION (C) (In crores of rupees)
200	
300	220
400	300
500	380
600	540
700	620

The schedule relating to the various amounts of consumption at different levels of income is called the consumption function, it is clear from the above table that consumption is an increasing function of income since both the variables Y and C move in the same direction. Consumption function can be represented diagrammatically as below.



In the above diagram, Y-axis measures consumption, and X axis measures the real income. The curve 'C' represents the consumption function (Propensity to consume). It moves upwards to the right implying that consumption increases as income increases. However, the increase in consumption C_1C_2 is less than the increase in income Y_1Y_2 . That part of the income, which is not consumed, is saved, SS' is the saving. Hence the consumption function measures the amount saved also.

Significance of Keynes Consumption Function

According to Hansen, Keynes analysis of consumption function is a major landmark in the history of economic doctrines. Keynes concept of consumption function has revolutionized the entire economic thinking in modern times.

The important implications are the following.

1. **Importance of Investment:** Since consumption is a stable function, Keynes concluded that employment can increase only if the investment increases. Investment therefore is regarded as a crucial factor determining employment in the short run investment has to be sufficient to fill in the gap between income and consumption if output and employment are to be maintained.
2. **Refutes the Say's Law of Market:** Keynes was able to invalidate the Say's law of market which was the basic principle of the classical theory. Keynes showed the consumption expenditure rises less than the rise in income. Hence supply does not create its own demand. All that is produced is not demanded
3. **Keynes Theory explains the Trade cycle Phenomenon:** Keynes consumption function provided a satisfactory explanation of the upward and downward swings in the trade cycle. When the MPC is less than usual, the economy is at the upper turning point (down turn from propensity). As consumption falls and savings become more, with increase in income, will ultimately lead to a slump. The lower turning point i.e. from depression to recovery is explained in terms of the failure of people to cut down their consumption as the income decreases.
4. **MEC helps to study the nature of income propagation :-**A very important implication is the need for government interference to remedy the problems of overproduction and unemployment.

3.4 SAY'S LAW OF MARKET

The belief of classical theory regarding the existence of full employment in the economy is based on Say's Law put forward by a French economist J B. Say. According to J. B. Say's law. "Supply creates its own demand". This implies that any increase in production made possible by the increase in the productive capacity or the stock of fixed capital will be sold in the market. There will be no problem of lack of demand. This appears to be a simple proposition. But it has a number of implications.

Say's law contends that the production of output in itself generates purchasing power, equal to the value of that output, supply creates its own demand. Production increases not only the supply of goods but by virtue of the requisite cost payment to the factor of production, also creates the demand to purchase these goods. Any production process has two effects:

- 1 As factors are employed in production process, income is generated in the economy on account of the payment of remuneration to the factors of production.
- 2 It results in the production of a certain level of output, which is

supplied in the market. According to Say's law additional output creates additional incomes which creates an equal amount of extra expenditure.

A new production process, by paying out income to its employed factors generates demand at the same time, as it adds to supply. Thus any increase in production is followed by a matching increase in demand.

In the original form Say's law was applicable to a barter economy. In a barter economy, people produce goods either to consume or to exchange them for other products. In the process the aggregate demand for goods equals the aggregate supply of goods. Hence there is no possibility of over production. Introduction of money also does not change the basic law. Money is used only as a medium of exchange. The classical theorists believed that money is neutral and does not influence the real process of production and distribution. There is a circular flow of money from the firm to households and from households to firms. The firm purchases inputs for production. They pay in the form of wages, rent, interest and profits. This becomes the income of households. The households spend their income on goods and services produced by firms. In this circular flow there is no saving and hoarding. All income received is spent. In case the household saves a part of the income, the circular flow can still be maintained if savings are equal to investment.

If there is a divergence between saving and investment, the equality is maintained through the flexibility of money interest. Interest is a reward for saving. Higher the interest, more are the savings and vice-versa. At the same time, lower the interest rate, higher the demand for investment and vice-versa. If $I > S$ rate of interest will rise. Savings will also increase and investment will fall till the two become equal.

Assumptions of the Law

The following assumption forms the backbone of Say's law.

1. **Optimum Allocation of Resources:-**The resources are optimally allocated in different channels of production on the basis of equality of marginal products and proportionality.
2. **Perfect Equilibrium:-**Demand and supply equilibrium leads to the fixing of commodity price and factor prices.
3. **Perfect Competition:-**The commodity and the factor markets have perfect competition as the market conditions.
4. There is a free enterprise or free market economy.
5. **Laissez-faire policy of the government:-**There is no government intervention in the economic field. Laissez-fair policy leads to automatic adjustment and smooth working of the market mechanism in the capitalist system.

6. **Elastic Market:-**The market is very wide and spread out without limits. Therefore as the output product increases, markets also expand.
7. **Market Automatism:-**A free market economy stimulates capital formation. In an expanding economy, new workers and firms will be automatically absorbed into the production channels. There is no displacement of workers or firm.
8. **Circular Flow:-**There is no break in the circular flow of income and expenditure. Income is automatically spent through consumption expenditure, and investment expenditure.
9. **Saving Investment Equality:-**All the savings are automatically invested. Therefore, savings is always equal to investment. Savings investment equality is the basic condition of equality. Interest flexibility ensures this.
10. **Long term :** -The economy's equilibrium process is considered from the long term point of view.

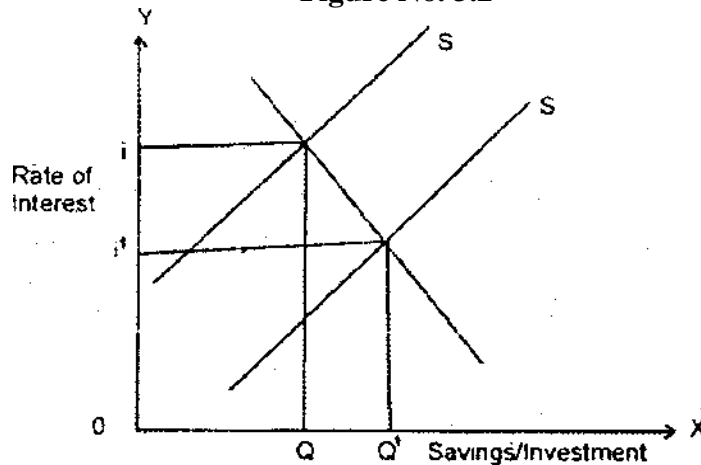
Thus according to Say's law, when savings will be offset by an equivalent investment and since hoarding is zero, aggregate demand will always be equal to aggregate supply. Hence there will be no general over production in the long run. Therefore, equilibrium can be maintained automatically at full employment level. Since over-saving is not possible; Say's Law implied that underemployment equilibrium is not possible.

Interest rate flexibility and wage flexibility are the 2 factors which ensures this equilibrium between be discussed.

1. Interest Rate Flexibility :- According to Say's law, all incomes are spent i.e. income = expenditure. However, there may be "leakages" in the circular flow of income & expenditure. Whatever is saved is invested in production activities. Savings and investments tor saving. If savings exceed investment, the rate of interest will fall. Hence investment will rise and level of savings will fall till they are in equilibrium. Therefore, in classical theory of employment, the rate of interest is a strategic variable, which brings about equality between savings and investment. Interest rate maintains the equilibrium between savings and investment.

2. Wage Rate Flexibility and Employment :-According to the classical economist, money wage cut policy can solve the problem. Involuntary employment is due to a rigid wage structure. If the wages can be lowered, involuntary unemployment will disappear. A self-adjusting system of wage will push the economy towards full employment stage.

Figure No. 3.2



Implications of Say's Law:-

1. Automatic Adjustment of Full Employment- A free enterprise economy automatically reaches a stage of full employment level. There are no obstacles to full employment. General employment and over production are impossible.
2. Self-adjusting Mechanism:- Increase in supply will ensure an increase in demand in the process of the functioning of a free capitalist economy. There is no need for government intervention.
3. Resource adjustment and utilisation of resources take place automatically in an expanding capitalist economy. When new workers and firms start operating, they also help to produce additional output and income. The entire economy becomes richer with the increased National Income. The unused and new resources are also productively employed in such a way as to benefit the whole society.
4. Money plays a passive role. It is only a medium of exchange to facilitate transactions. Behind the flow of money, there is a real flow of goods and services, which is important. As a result, changes in the supply of money has no effect on the economy's process of equilibrium at full employment level.
5. A free enterprise economy under Laissez-faire policy has built in flexibility. Market mechanism helps in optimum adjustments in the economy.
6. Rate of interest is an equilibrating factor in classical theory. Flexible interest rates lead to equilibrium between savings and investment.
7. Wage flexibility ensures full employment in the economy.

Criticism:-

J.M. Keynes vehemently criticized the classical theory. The assumptions on which the classical theory is based can be criticized

The Great Depression of 1930's has revealed the weaknesses of the classical theory. The classical theory could not suggest a solution to the problem of a depressed economy facing large scale unemployment.

1. **Unrealistic Assumptions at Full Employment:-**According to Keynes. The basic assumption of full employment itself is unrealistic. An economy can be in a state of equilibrium. In under employment situation also full employment equilibrium is just one possible equilibrium condition according to Keynes.
2. **Too much emphasis on Long Run:-**Keynes gave importance to the short run According to him. In the long run, we are all dead.
3. **Keynes refuted Say's Law of Markets:-**According to Keynes, the classical economists failed to examine the level of aggregate demand. Supply may not create demand. Over production is a possibility and reality according to Keynes. Supply can exceed demand. Hence automatic self adjusting mechanism will not work.
4. **Interest is not an equilibrating factor:-**Keynes attacked the classical theory in regard to savings and investment. Flexible interest rates will not lead to equilibrium savings and investment. Changes in income bring about the equilibrium between savings and investment according to Keynes.
5. **Role of money is neglected:-**The classical economists considered money as a veil. It's role is neutral. Keynes recognized the importance of precautionary measures and speculative demand for money He also recognized the effect of money on output, incomes, employment.
6. **Keynes** attacked the Laissez faire policy of classical economists. In the conditions -of the modern world, state intervention is necessary to solve the problem of unemployment. Government spending, taxation and borrowing are important instruments to increase employment and income in an economy.
7. Wage cut policy is not practical. Due to the strong trade unionism it is not possible to cut wage rates as suggested by the classical economists as a remedy to employ more workers. A wage cut may in fact lead to reduced purchasing power with workers which will lead to reduced effective demand for products. This will adversely affect the levels of employment. Hence a general wage cut will lead to reduced volume of employment. The workers will revolt if the money wages are cut. This is due to money illusion.
8. The classical system will work only if there is perfect competition. In such a case there should not be trade unionism, wage legislation etc. But in. reality, all these factors exist. Hence classical theory will not become applicable.

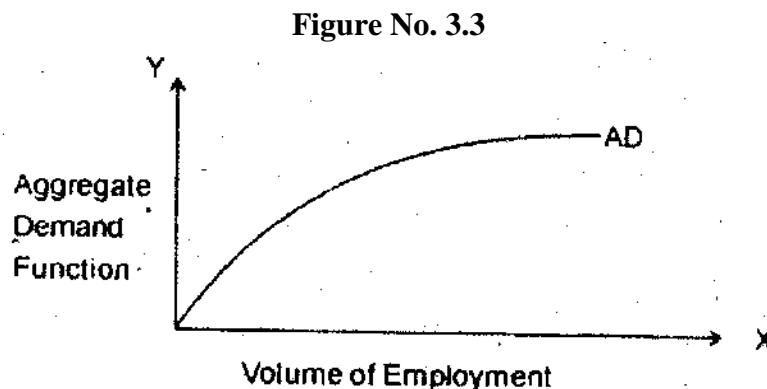
3.5 THEORY OF EFFECTIVE DEMAND

The principle of effective demand occupies a strategic position in Keynes theory of employment. Effective demand manifests itself in the total spending of the commodity on consumption and investment goods. Total employment depends upon effective demand Therefore unemployment results from lack of effective demand. Higher the level of effective demand, the more the level of employment in the economy.

Effective demand depends upon 2 factors - Aggregate demand function, and aggregate supply function.

3.5.1 Aggregate Demand Price and Function:-

The aggregate demand price for the output of any given amount of employment is the total sum of money or proceeds which is expected from the sale of the output produced .when that amount of labor is employed. In other words, the aggregate demand price is the amount of money, which the entrepreneurs expect to receive from the sale of output produced at a particular level of employment. The aggregate demand curve or function is a schedule of the proceeds expected from the sale of the output at different levels of employment. The aggregate demand curve slopes upwards from left to right. It means that as the level of employment and income increase aggregate demand price also increases With increase in income, people tend to spend a small amount of income on consumption goods, Hence with increase in output and employment, aggregate demand price increases at a diminishing rate The slope of the curve diminishes will increase in employment. The figure below depicts an aggregate demand function.

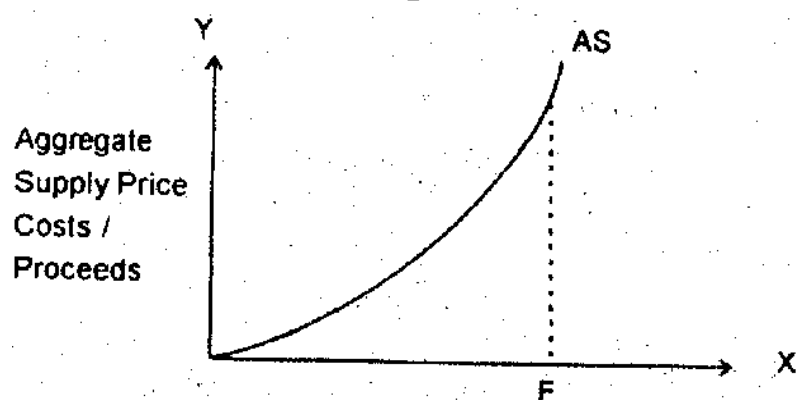


Aggregate Supply Price :

The main aim of an entrepreneur in a capitalist society is to earn profits. The producer will employ workers in such a way as to maximise profits. Employment of labour means that some costs have to be incurred. A certain minimum amount of proceeds will be necessary to induce employers to provide any given amount of employment. The supply price for any given quantity of commodity refers to that price at which the seller is willing or is induced to supply that amount in the market. If the

seller does not get the minimum receipts, he will reduce output and employment. The aggregate supply curve or function is a schedule of the minimum amount of proceeds required to induce entrepreneurs to provide varying amount of employment. It shows the cost of producing a certain level of output or the minimum receipts which must be obtained if that level of output is to be maintained. The aggregate supply function slopes upwards. The shape of aggregate supply function depends entirely on technical conditions of production. It is decided by the manner in which cost rises in response to expansion of employment. The figure below shows the aggregate supply function.

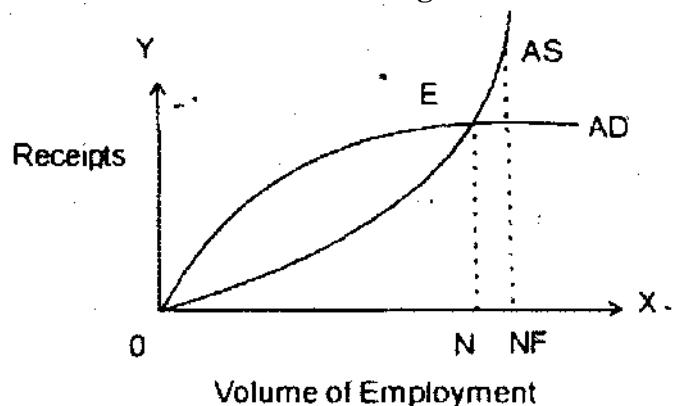
Figure No. 3.4



Equilibrium Level of Employment:-

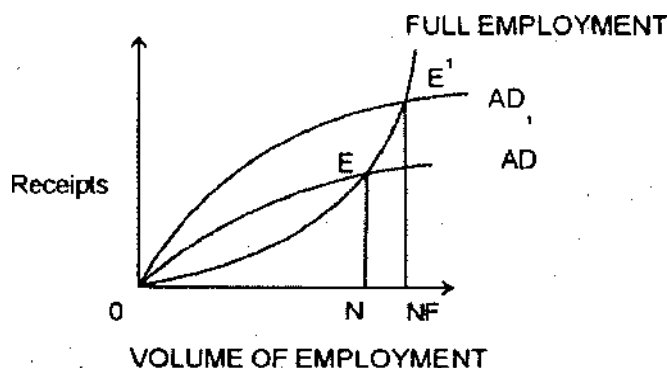
The intersection of the aggregate demand function with aggregate supply function determines the level of income and employment. The aggregate supply schedule represents costs involved at each possible level of employment. The aggregate demand schedule represents the expectation of maximum receipts of the entrepreneur at each possible level of employment. As long as receipts exceed costs, the level of employment will go on increasing. The process will continue till receipts become equal to cost. At the point of equilibrium, the amount of sales proceeds which the entrepreneurs expect to receive is equal to what they must receive in order to just appropriate their total costs.

Figure No. 3.5



The point E, where the aggregate demand curve intersects the aggregate supply curve is called the point of effective demand. The equilibrium level of employment is ONF. This is not necessarily full employment. If the level of employment is more or less than ON, the profits will be less than maximum. ONF level of employment is the full employment level in the diagram since at this level of employment the aggregate supply curve AS is vertical in shape. Hence ON level of employment is less than full employment. This happens because investment demand is insufficient to fill the gap between income and consumption.

Figure No. 3.6



For reaching full employment, employment level has to be increased. For this either the aggregate supply curve should be lowered or aggregate demand should be increased. Increasing the aggregate supply curve will necessitate increase in the productivity. This is a long run problem. Keynesian theory is concerned with short run analysis. Hence raising the aggregate demand is possible. This shifts the equilibrium point to E^1 . This is the full employment equilibrium. Any expansion of demand beyond E^1 will lead to inflation.

3.6 SUMMARY

- The French economist J. B. Say believed that "supply creates its own demand". This is the basic assumption in the classical theory of employment. It implied that there will be no problem of lack of demand. Every increase in production is followed by a matching increase in demand.
- The following are the assumptions of Say's Laws:-
 - a. Optimum allocation of resources
 - b. Perfect equilibrium
 - c. Perfect competition
 - d. Laissez faire policy
 - e. Elastic market
 - f. Market automation
 - g. Circular flow and Say's investment equality.
 - h. Long term

- Flexible interest rates bring about equilibrium between savings and investment.
- Wage rate flexibility ensures that there is no unemployment. A self adjusting system of wage rates will push the economy towards full employment stage.
- J M. Keynes criticizes Say's law of markets on a number of grounds like unrealistic assumptions of full employment, long run assumption. Say's law is also criticized since it is one sided and neglects the demand side. It is also criticized that interest does not equalize savings and investment. Classical theory neglects the role of money. Keynes also criticized the Laissez faire policy of classical economists. Wage cut policy is not a practiced solution to solve unemployment problems. Moreover the assumptions of perfect competition are unrealistic.
- Keynes consumption function is a very significant contribution to modern macro economic theory. In order to explain the concepts of consumption function and the multiplier theory, a study of the fundamental Keynesian principles is important.
- Keynes in his general theory, brings out the real determinants of income and employment in a modern economy. According to him, the economy can be in equilibrium at any level of employment. Full employment is one of the different situations in an economy. Under employment equilibrium situations are more common.
- Keynesian theory is demand oriented. It stresses effective demand as a crucial factor in determining the levels of income and employment.
- Keynes gave importance to short run equilibrium. He assumed that the amount of capital, population, technology etc. do not change in the short run. Therefore, in the short run, the income and output depends upon the volume of employment. The levels of employment depend upon effective demand, which depends upon aggregate spending.
- Effective demand manifests itself in the total spending of the community on the consumption and investment goods.
- Total employment depends on effective demand and unemployment is due to lack of effective demand.
- Two Factors determine effective demand - Aggregate demand function and aggregate supply function. The intersection of aggregate demand function and aggregate supply function determines the level of income and employment. This point is known as the effective demand. The equilibrium reached thus need not be the full employment equilibrium point. For reaching full employment equilibrium aggregate demand should increase.
- The aggregate demand is made up of two components - consumption expenditure and investment expenditure. Consumption expenditure is an important component of the total expenditure. Consumption expenditure depends on the size of income and propensity to consume, which is called the consumption function $C = f(Y)$
Keynes considered two technical attributes 1) APC 2) MPC
 $APC = \Delta C / \Delta Y$ and $MPC = C / Y$

3.7 QUESTIONS

1. What is the meaning of consumption? Explain the relationship between the consumption and income.
2. Explain say's Law of Demand in detail.
3. Explain the theory of effective demand in detail.



INVESTMENT

Unit Structure:

- 4.0 Objectives
- 4.1 Introduction
- 4.2 Meaning of Investment
- 4.3 Investment Function
- 4.4 Marginal Efficiency of Capital and Rate of Interest
- 4.5 Investment Multiplier
- 4.6 Summary
- 4.7 Questions

4.0 OBJECTIVES

- To study the concepts of investment & investments function.
- To study the investment multiplier.
- To study the concepts of marginal efficiency of capital & interest rate.

4.1 Introduction

In modern macroeconomic analysis, the term investment refers to real investment.

A firm invests when it uses steel or other material to build plant or when new machines are purchased. This is real investment. When a person buys shares or deposits money in the money in the bank, it tends to be financial investment.

Investment leads to the production of new capital goods - plant and equipment. Capital formation takes place if the newly produced capital goods leads to a net addition to the given stocks of capital assets over and above their replacement requirement (depreciation).

Investment may be either gross investment or net investment. Gross investment is defined as a flow of expenditure on new fixed capital assets or an addition to inventories over a given period of time. Since we are not considering inventories, gross investment means the investment expenditure on fixed capital. A part of the new capital will be needed simply to replace the depreciated capital stock. This must be deducted to find out the net addition to the existing capital stock. Therefore, Net investment = Gross investment - Depreciation of Fixed Capital

investment can also be classified into autonomous investment and induced investment. Autonomous investment does not change with the changes in income i.e. it is independent of income. It takes place in construction of roads, building etc.

Autonomous investment depends on population growth and technical progress than on the level of income. Most of the investment activity of the government is autonomous in nature Induced investment changes with changes in income,

4.2 MEANING OF INVESTMENT

Investment is the important concept in macro economics which implies the situation of national income, employment and capital formation in country. It means, investment is the key economic variable in the development of country.

Definition of Investment:

The investment means to addition in the stock of capital or creation of new capital such as plant, machine, and transportation vehicle, new factories and so on which creates employment and income in the economy. Just holding financial asset is not real investment like holding shares, holding bonds etc. This type of investment is merely called financial investment. It may or may not create income and employment. Therefore, creation of physical capital in the economy, it is called real investment.

Types of Investment:

There are mainly two types of investment which discussed as below-

1. Autonomous Investment
2. Induced Investment

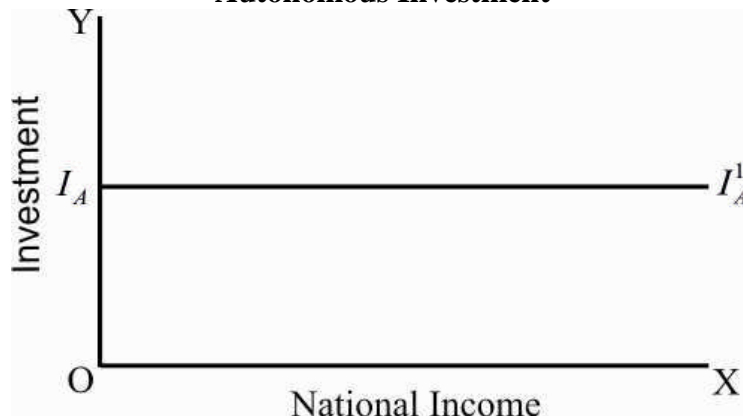
1. Autonomous Investment:

After the Keynesian analysis two types of investment distinguished, these are autonomous investment and induced investment. The autonomous investment is the investment which does not change with the change in income level. It means, the autonomous investment is independent from income.

J. M. Keynes explained that the level of investment is depends upon marginal efficiency of capital (MEC) and rate of interest. He states that change in income level will not affects investment. Therefore, the concept of autonomous investment of Keynes is mainly based on short term analysis or short run problems. He said, income effects investment in the long run.

The autonomous investment explained with the help of below figure.

Figure No. 4.1
Autonomous Investment



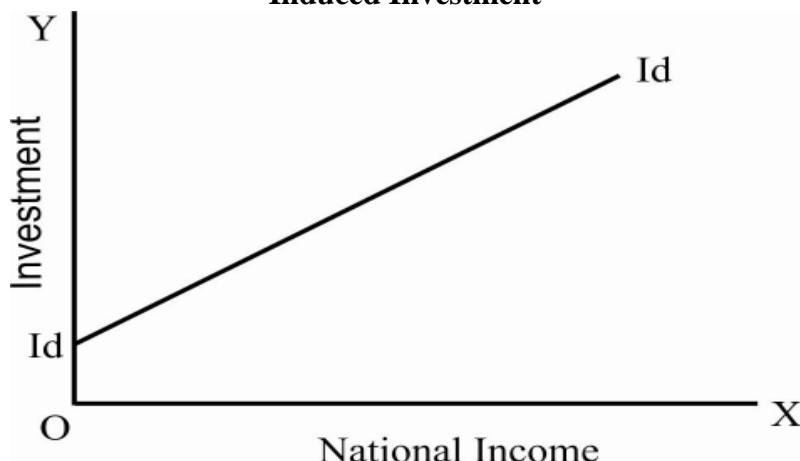
In the above figure, X axis represents national income and Y axis represents investment I_A . I_A^1 indicated autonomous investment. The autonomous investment takes place houses, road constructions, public undertakings and other types of public infrastructure development which are necessities, not depends on income. That is why, the autonomous investment curve is horizontal to X axis. It implies with the increase in income or change in income; autonomous investment does not change.

2. Induced Investment:

The induced investment is the investment which changes with changes in the level of income. The high level of income, the higher the consumption level, consumption will lead to increase in demand and increase in demand will promote to industry to produce more which will increase the investment level in economy due to increase in profit expectations of investors.

The induced investment we can explain with the help of diagram which discussed in the below diagram-

Figure No. 4.2
Induced Investment



In the above figure 8.7, Y axis represents investment and X axis represents national income. Id represents induced investment curve which is upward sloping. It implies that with increase in income, investment also increases. It means that there is positive relation between national income and investment.

4.3 Investment Function

Investment function refers to inducement to invest or investment demand. According to the classical economists, investment demand is a decreasing function of the rate of interest.

$$I = f(i)$$

where I = Investment
(i) = rate of interest

According to Keynes, the volume of investment depends upon two factors, 1) The marginal efficiency of capital and 2) The rate of interest. The marginal efficiency of capital is called the expected rate of profit.

4.4 MARGINAL EFFICIENCY OF CAPITAL AND RATE OF INTEREST

MEC is expressed as a ratio and compared to the rate of interest. There is a comparison between the expected rate of profit and the rate of interest. In effect it is a comparison between the supply price of an asset and its demand price. Keynes makes a distinction between the demand price and the supply price of a capital asset. The demand price of an asset is defined as the sum of the expected future yields discounted at the current rate of interest. We have already seen that supply price = the sum of prospective yields discounted by the MEC.

In symbolic terms, demand price of an asset can be put as follows.

$$= \frac{Q_1}{(1+i)} + \frac{Q_2}{(1+i)^2} + \frac{Q_3}{(1+i)^3} + \dots + \frac{Q_n}{(1+i)^n}$$

DP = demand price, Q1, Q2, Q3,...Qn = the prospective yield or annuities, i = current rate of interest.

For Example, the market value of an asset., which promises to yield Rs. 1600 at the end of one year and Rs. 1210 at the end of 2 years will be estimated at higher than Rs 2000, when the interest rate is less than 10%. If the market rate of interest is 5% the present value of capital asset will be

$$= \frac{1600}{1.05} + \frac{1210}{1.05^2}$$

$$= 1047.62 + 1097$$

$$= 2144.62$$

This is the demand price of a capital asset.

The effect of the relative positions of demand and supply on the behaviour of investor in taking decisions will be as follows

- 1) When $MEC = \text{interest rate}$, $SP = DP$ - neutral
- 2) If $MEC > DP > SP$ - favourable
- 3) When $MEC < DP < SP$ – unfavourable

The two strategic variables in investment decisions are the MEC and the rate of interest. MEC of an asset falls as I in that asset increases. The reasons are,

- 1 The prospective yield of that asset will fall as more units are produced. More production will lead to the units competing with each other to meet the demand for the product.
- 2 The supply price of the asset will rise as more of the assets are produced. Investment will be in equilibrium when MEC becomes equal to the given current rate of interest. This is given by the following diagram

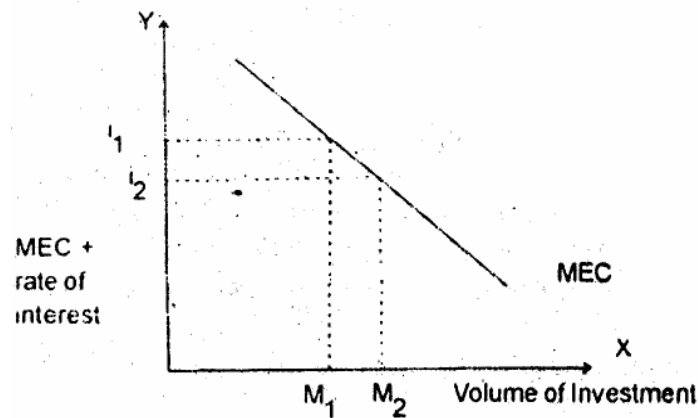


Figure 4.3

At i_1 rate of interest investment is OM_1 . At this level of investment, $MEC = i_1$. If the rate of interest falls to i_2 , investment will rise to OM_2 . However change in profit expectation can shift the MEC curve also.

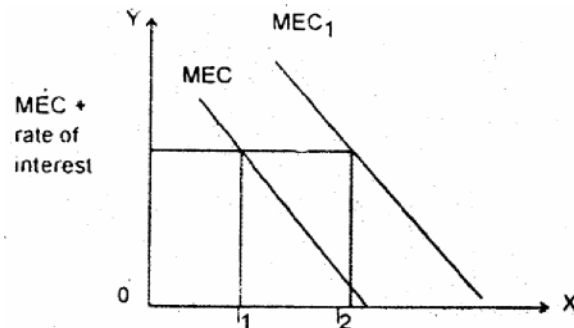


Figure 4.4

This is shown by the above diagram. Due to rise in profit expectation, MEC curve shifts to MEC1. As a result investment also increases to i_2 . MEC is the prime factor in determining investment, since rate of interest is rather rigid during the short period.

Factors Affecting MEC :

A number of short run and long run factors affect the marginal efficiency of capital.

Short run Factors:

1. Expectation about demand, price and cost of Production: If there is an expectation of demand to increase and hence prices to rise, a high MEC leads to increased investment and vice versa
2. Business Optimism and Pessimism: If the atmosphere is one of optimism, entrepreneurs will estimate MEC to be high.
3. Changes in Income: Unexpected windfall gains suddenly increases income levels. This will induce an increase in MEC.
4. An increase in the propensity to consume will raise the MEC and vice-versa: Increased demand for consumption goods will induce the demand for capital goods

Long Run Factors :

1. Population Growth: Increase in population leads to increase in demand. MEC will increase as a result.
2. Technological Advancement: Improvement and growth of new technology leads to new products, new markets etc. This will have a favourable impact on the MEC.
3. Development of Infrastructure : Developing the infrastructure also has a positive-impact on the MEC in the long run.

4.5 INVESTMENT MULTIPLIER

The theory of multiplier was first developed by Prof. R.F. Kahn in 1931. It explains the effects of initial increase in investment on aggregate employment. Kahn's multiplier was thus known as 'employment multiplier.'

J.M. Keynes used the concept of multiplier to analyze the effects of change in investment on income via changes in consumption expenditure. Thus this multiplier came to be known as the investment multiplier. It may be defined as "the ratio of the change in income to the change in investment." It is symbolically expressed as, $K = \Delta Y / \Delta I$.

Where K = Stands for Multiplier, ΔY = change in income and ΔI = change in investment.

In an economy, when there is a small increase in investment, there would be multiplier increase in national income. For example, if the investment is increased by Rs. 4 cro. and if as a result, the national income

increases by Rs. 20 cro. the value of 'K' (multiplier) will be 5. In other words, investment multiplier points out that, national income will rise much more than the initial increase in investment. A part of this additional income is spent on consumption goods. Since, one man's expenditure is another man's income. The consumption expenditure of the people at the first round would become income of the people at the second round and so on.

Graphical Presentation -

The multiplier is depends upon the marginal propensity to consume (MPC). If the MPC is higher, the size of multiplier would be higher and vice versa. The concept of multiplier can be explained with the help of following diagram.

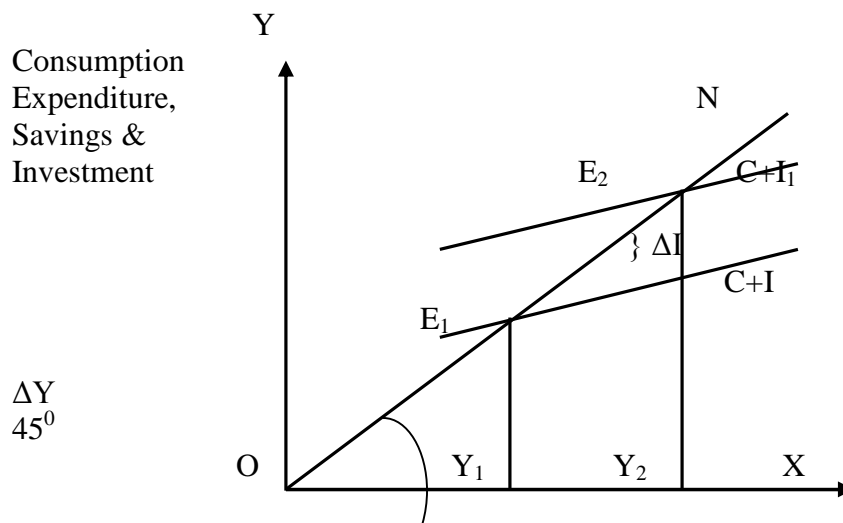


Fig. 4.5

In the above diagram, OX axis represents income and OY axis represents investment, consumption expenditure and savings. 45° line is known as consumption line. $C+I$ is the initial investment curve which intersects ON line at E_1 point. When the investment is $C+I$ the national income is OY_1 . When there is an increase in investment from $C+I$ to $C+I_1$ the national income would rise from OY_1 to OY_2 .

Working of the Multiplier -

The working of 'K' is explained as under. The following table shows how there would be a multiplication in income according to income propagation assuming that MPC is half or 50% of the income with the initial investment of Rs. 200 crores.

Rounds	Initial investment	ΔY	ΔC	ΔS
1 st	200 cro.	200	100	100
2 nd		100	50	50
3 rd		50	25	25
4 th		25	12.50	12.50
5 th		12.50	6.25	6.25
6 th		6.25
Finally	200	400	200	200

The above table shows that the initial investment of Rs. 200 crores is the income of the people. Out of 200 crores 50% i.e. Rs. 100 crores is spent on consumption and remaining amount of Rs. 100 crores is saved. The consumption expenditure of the people at the first round would become income of the people at the second round. Again out of Rs. 100 crores Rs. 50 crores is spent on consumption and remaining Rs. 50 crores is saved. The consumption expenditure of the people at the second round would become income of the people at the third round. Again 50% of the income is spent on consumption and remaining 50% is saved. This process will go on and on till the initial income of Rs. 200 crores would not become zero.

Calculation of the Multiplier -

The value of 'K' or multiplier is equal to reciprocal of 1- MPC. It is symbolically expressed as, $K = \frac{1}{1-MPC}$ or $K = \frac{1}{MPS}$

If MPC is 4/5 then,

$$K = \frac{1}{1-\frac{4}{5}}$$

$$K = \frac{1}{\frac{1}{5}}$$

$K = 5$, K = 5. The value of 'K' will be 5.

The following table would indicate the different values of 'K' at different MPC figures.

MPC	MPS	Value of 'K'
0	1	1
1/2	1/2	2
2/3	1/3	3
3/4	1/4	4
4/5	1/5	5
1/3	2/3	1 $\frac{1}{2}$
3/5	2/5	2 $\frac{1}{2}$

8/9	1/9	9
9/10	1/10	10
99/100	1/100	100
1	0	Infinity

So from this schedule it is clear that larger the MPC the greater would be the value of 'K' and vice versa.

Reverse working of the Multiplier -

So far, we have described the working of the multiplier in the forward direction. But the multiplier may work in the reverse or backward direction also. It means that a decrease in investment causes a multiple decrease in aggregate income. For example, if investment decreases by Rs. 10 cro., it will reduce the income by an equal amount. If MPC is half, consumption expenditure will fall by Rs. 5 cro. Thus reduction in investment leads to the reverse operation of the multiplier which causes a decrease in aggregate income. This is shown in the following figure with the help of saving and investment curves.

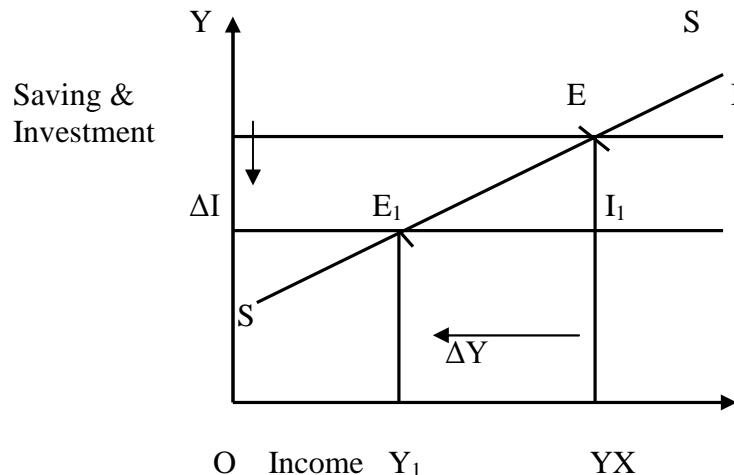


Fig. 4.6

In the above diagram horizontal straight line is autonomous investment curve. SS curve is the saving curve. The I curve is the original investment curve which intersects SS saving curve at E point. At this point the equilibrium level of income is OY. When the investment decreases the original investment curve I shift downwards to the I_1 . The new investment curve I_1 intersects the SS saving curve at E_1 point. At this equilibrium point the level of income decreases from OY to OY_1 . The fall in income (ΔY) is a multiple of decline in investment (ΔI).

Thus in a community with lower MPC, the initial decline in investment will have greater adverse effect on the level of income and employment. However, MPC is less than one but greater than zero. This implies that people neither spend the full amount of extra income nor

reduce consumption by the full decrement of income. Hence income and employment cannot continue to decline till to zero. This otherwise, reverse working of the multiplier would imply a complete collapse of the economy.

Assumptions-

The concept of multiplier is based on the following assumption.

1. The value of multiplier depends upon increase in investment.
2. It is assumed that the increase in investment has not further indirect effects on investment.
3. The calculation of multiplier depends on the assumption of a closed economy.
4. The MPC is constant.
5. There exists unemployment in the economy.
6. There is absence of multiplier period.
7. Keynes has assumed that, change in investment is of autonomous and not induced type.
8. It is assumed that the consumer goods are regularly made available.

Leakages in Multiplier Process –

The size or value of multiplier is reduced by the leakages in income stream on account of the following factors.

1. Savings- In actual life the people does not spend the entire increase in income on consumer goods. On the contrary they save a part of it. The saved portion of increased income does not get converted in investment. This limits the value of 'K'. Thus higher the propensity to save of the people lower shall be the value of 'K'.
2. Repayment of old debts – The income recipients may repay their old debts to lenders instead of spending their income on consumer goods. The value of 'K' is reduced if lenders who receive this money from the borrowers do not spend it.
3. Accumulation of idle cash deposits- A part of increased income may be saved in the form of idle bank deposit instead of spending their income on consumer goods. The value of 'K' is reduced if the bankers who receive this money do not spend on consumer goods.
4. Purchase of old assets – The income recipients may buy old assets such as shares and securities from the people who may not increase their consumption. This will reduce value of 'K'.
5. Excess of import – The import of foreign goods may be increase this will not help the domestic employment. This is because money is spent on foreign goods resulting in a net outflow of funds to foreign countries. This would reduce value of 'K'.
6. Inflation – The rise in prices would reduce additional money expenditure even to buy same amount of goods and services. Hence actual consumption may not increase. This will reduce value of 'K'.
7. High taxes – High rate of taxes may lead to decline in consumption expenditure and the value of 'K'.

Limitations -

1. Availability of consumer goods – The theory assumes that multiplier depends upon the availability of consumer goods. The shortage of consumer goods will not increase the consumption expenditure. Ultimately it will reduce the magnitude of multiplier.
2. Full employment level – The multiplier works in the economy where the level of income is low and unemployment is high. Once the economy reaches the level of full employment the multiplier fails to work. At this level any increase in investment will not increase aggregate output and employment. This will limit the value of 'K'.
3. Multiplier period – According to Keynes, when income of the people increases they spend a part of it on consumption and remaining amount is saved. But in reality there is time gap between the receipt of increased income and the expenditure on consumption. This time gap is called as multiplier period. The value of multiplier depends upon the multiplier period of the time gap. Longer the time gap, the smaller will be the value of 'K' and the smaller the time gap, the larger will be the value of 'K'.
4. Availability of resources – The concept of multiplier depends on the availability of resources for the production of consumer goods. But the shortage of resources will adversely affect the working of the multiplier and thus it will reduce the value of multiplier.

4.6 SUMMARY

1. The theory of multiplier was first developed by Prof. R.F. Kahn in 1931. It explains the effects of initial increase in investment on aggregate employment. Kahn's multiplier was thus known as 'employment multiplier.'
2. J.M. Keynes used the concept of multiplier to analyze the effects of change in investment on income via changes in consumption expenditure. Thus this multiplier came to be known as the investment multiplier. It may be defined as "the ratio of the change in income to the change in investment." It is symbolically expressed as, $K = \Delta Y / \Delta I$.

4.7 QUESTIONS

1. What is Investment? Explain the types of investment with the help of diagram.
2. Explain the concept of Investment multiplier.
3. Explain the calculation and leakages of investment multiplier.



SUPPLY OF MONEY

Unit Structure:

- 5.0 Objectives
- 5.1 Introduction
- 5.2 Supply of Money
- 5.3 Determinants of Money Supply
- 5.4 Velocity of Circulation of Money
- 5.5 RBI's Approaches to Measurement of Money Supply
- 5.6 Summary
- 5.7 Questions
- 5.8 References

5.0 OBJECTIVES

- To understand the concept of money and supply of money
- To know the determinants of money supply.
- To know about the concept velocity of circulation of money.
- To understand the RBI's approaches to measurement of money supply.

5.1 INTRODUCTION

Due to the difficulties of the barter system, money came into existence. Initially, we use metallic money, which was replaced by the paper money over a period of time. Today there are a wide variety of assets, which are used as money or near money. Before explaining what constitutes money, we will try to understand some of the important definitions, of money and then functions of money

Definition of money :

Different economists have defined money differently. Some of them focus on the exchange function of money while some others consider the general acceptability of money as a medium of exchange. Following are some of the important definitions of money -

Crowther Money can be anything that is generally acceptable as a means of exchange and that at the same time act a measure and store of Value.

Marshall Money constitutes all those things, which are at any time and space generally accepted without doubt or special enquiry as a means of purchasing commodities and services and of defraying expenses.

Robertson Money is anything, which is widely accepted in payments for goods or in discharge of other kinds of business obligations
Walker Money is what money does.

From the above definitions, we may enlist following features of money:

- 1 Money must have a general acceptability.
 2. Money should act as a medium of exchange in buying and selling operations
- Money should be capable of storing the value for the future

Functions of Money:

Money performs following important functions: -

1. Medium of Exchange: Perhaps the most important function of money is to serve as a medium of exchange in buying and selling goods. Under barter system, exchange required finding of two people wanting each other's goods, (double coincidence of wants) The existence of money has eliminated such requirement and the exchange transactions have become very simple. A man having wheat can sell it for money and buy anything that he wants with that money. He does not have to find a man having the commodity of his need.

2. Measure of Value: Money serves as a common measure of value for all the commodities and services. The value of every commodity can be expressed in terms of money. This simplifies the exchange transactions of all the commodities on one hand, and helps to compare the values of different commodities, on the other hand. For example, it is very easy to compare the values of say Radio and a Cassette player once we express them in terms of money. We can easily conclude that the cassette player of Rs 4500 is more valuable than a Radio of Rs.2300.

- 3 Store of Value: In the absence of money, it would be difficult to store the value for the future Money makes it very convenient to store the value for the future Money does not require more space, it is durable and is readily exchangeable with the other commodities and services whenever required.

- 4 *Standard of Deferred Payments:* Money also performs one more important function of the modern times. With the invention of money, it is possible to express future payments in terms of money. A borrower borrows some amount of money today and assures to repay the same with some interest in future. All the credit transactions related to trade and commerce of modern economy are based on this function of money.

5. *Other functions:* Apart from the above-mentioned important functions of money, there are some other ways in which money helps the modern economies. It facilitates the distribution of National income among different factors of production in the form of the rewards for the services rendered by them. Thus, the labour class gets wages, the capitalists get interest, the landowners get rent and the entrepreneurs get profits in the form of money.

5.2 SUPPLY OF MONEY

Money supply refers to the stock of money available for the spending purpose which is held by the people of a country. The money may be available in the various forms.

- 1 Coins and notes which are issued by the government and the central bank of the country and which are in circulation. This portion of money supply is known as legal tender.
2. Demand deposits with the commercial banks, which are withdrawable at any time. To withdraw the demand deposits the customers need not give a prior notice to the bank.

Time deposits and other kinds of less liquid assets also may be included in the concepts of the money supply. These concepts will be analyzed in the latter part of the study material.

From the concept of money supply, some types of financial assets are excluded These are. –

- 1 That part of currency notes and coins which lies with the commercial banks and with the central bank as reserves. This is because this part of money is not included in circulation.
- 2 The monetary gold held by the central bank of the country does not get circulated in the economy It becomes a part of international money So it is excluded from the concept of money supply.
- 3 All those cash balances held either by the banks or by the government of which are in the treasury of a country are also excluded from the concept of money supply. This is because, they are kept for the administrative and non-commercial activities and are not circulated in the economy.

In short, in its very narrow sense, money supply is defined as the money available with the public in the form of currency (notes and coins) and the demand deposits with the banks.

5.3 DETERMINANTS OF MONEY SUPPLY

The total money supply in the economy depends upon various factors. They are called as the determinants of money supply. Following is a brief analysis of the factors on which money supply depends.

1) Reserve or high powered money.

High powered or Reserve money (H) is a base of money supply. It includes only the currency (C), cash reserves of the banks (R) and other deposits with the RBI (OD)

$H = C + R + OD$ High powered money is a major determinant of money supply in the economy

2) Money Multiplier:

The high powered money along with the money multiplier determine the total supply of money. Money multiplier depends upon the people's preference to hold cash. If more cash is held by the people, banks will have less cash, their credit creation capacity will be low. So availability of money in the economy will also be low. The value of money multiplier will also depend upon the reserve requirements. The commercial *banks* have to keep certain % of their deposits with the Central bank. Their credit creation capacity decreases due to this and hence the supply of money in the economy also gets reduced. Thus higher the value of money multiplier, higher will be the money supply and vice versa.

3) Community's choice :

Total money supply also depends upon the choice of community - whether to hold money in terms of cash or in terms of deposits of commercial banks. If the community holds larger part of money in cash, it that money does not enter into the credit creation process. But if the community keeps their money in the banks and make transactions by cheques more money will be held

by the banks which can be circulated in the economy through of credit creation process.

4) Velocity of circulation (v):

The number of times money changes hands or the velocity of money is an important determinant of money supply. The Higher the velocity of money, the more will be the supply of money and vice versa.

5) Fiscal and monetary policy :

Fiscal policy is the policy which influences economy through taxation, public expenditure, public debt and deficit financing. The decisions of the fiscal authorities also have an influence on the supply of money. Increase in public expenditure or reduction in the rates of taxes or deficit financing may increase the supply of money. On the other hand, introduction of new taxes, and fall in the government expenditure will reduce the total money supply in the economy.

Monetary policy of the Central Bank is also an important determinant of money supply. A cheap money policy by the central bank increases the availability of money in the economy and a restrictive money policy reduces the total money supply (discussed in detail in the next unit.)

6) Liquidity Preference :

Liquidity preference is the desire of people, to hold money in cash. More the liquidity preference, less is the money available for circulation and less will be total money supply.

5.4 VELOCITY OF CIRCULATION OF MONEY

The velocity of money is the number of times money Changes hands during a given period of time, generally one year The money supply in the economy is greatly affected by the velocity of money in circulation. The more the velocity of the money, more is the money supply in the economy. The velocity or speed of money depends upon many factors.

(1) Regularity of Income

In a Community, if people are receiving income quite regularly and at a regular interval, the velocity of money is quite high. The people would spend money frequently as they receive the money regularly. In the community where people receive their income irregularly, the velocity of money will be less because the people will tend to hold more cash than spending it.

(2) Liquidity preference

The liquidity preference means the desire of people to hold cash. If people want to hold more money in cash or they have more liquidity preference, less will be the velocity of money.

(3) Savings

The more the savings or less the consumption's, the lower is the velocity of money in circulation More money saved means people hold more money in cash and do not spend. This reduces the movement of money .in the circulation.

(4) Development of banking and financial institutions in a country with more banking and financial institutions, money changes hands quite frequently. People's savings are mobilised more quickly by the banking and financial institution. This increases the velocity of money in circulation.

(5) Trade Cycles

The velocity of money also Changes in accordance with the phases of the trade Cycle. During prosperity, the volume of transactions is more, money Changes hands more quickly. This increases the degree of velocity of money. On the other hand, during the depression situation or in deflation, the volume of transactions is quite less. This reduces the degree of velocity of money

(6) Level of income

The velocity of money is quite high among the low income groups people. This is because they have to spend most of their incomes on the immediate needs. This is not so with high income groups. This group can withhold their consumption as many of their wants are satisfied. As a result the velocity of money in circulation may be low.

5.5 RBI'S APPROACHES TO MEASUREMENT OF MONEY SUPPLY

According to the Reserve Bank of India since its inception in 1935, money supply in the narrow sense of the term was the sum of currency with the people and demand deposits with the commercial banking system. Narrow money was denoted by the RBI by M_1 . In 1964-65, the concept of broad money or aggregate monetary resources was introduced. Broad money was considered equal to M_1 + Time deposits with commercial banks. In March, 1970 the RBI accepted the report of the Second Working Group on Money Supply. This report was published in the year 1977 and it gave a broad definition of money supply. Accordingly, four measures of money supply were brought into effect. These four measures are as follows:

1. M_1 = Currency with the public + Demand deposits with the commercial Banks + Other deposits with the RBI.
2. M_2 = M_1 + Post Office Savings Bank Deposits.
3. M_3 = M_1 + Time deposits with the commercial banks.
4. M_4 = M_3 + Total Post Office Deposits (excluding NSCs).

The Reserve Bank of India gives importance to narrow money (M_1) and broad money (M_3). Narrow money excludes time deposits because they are not liquid and are income earning assets while broad money includes time deposits because some liquidity is involved in it as these assets earn interest income in future. Since time deposits have become convertible in recent times, they have become more liquid than what they were before. The M_2 and M_4 measures of money supply include post office savings and other deposits with the post offices.

The third working group on money supply recommended the following measures of monetary aggregates through their report submitted in 1998:

1. M_0 = Currency in circulation + Bankers' deposits with the RBI + Other deposits with the RBI. (M_0 is compiled on weekly basis).
2. M_1 = Currency with the public + Demand deposits with the banking System + Other deposits with the RBI = Currency with the

public + Current deposits with the banking system + Demand liabilities Portion of Savings Deposits with the banking system + other Deposits with the RBI.

3. $M_2 = M_1 + \text{Time liabilities portion of saving deposits with the banking System} + \text{Certificates of deposits issued by the banks} + \text{Term Deposits [excluding FCNR (B) deposits] with a contractual maturity of up to and including one year with the banking system}$
 $= \text{Currency with the public} + \text{current deposits with the banking System} + \text{Savings deposits with the banking system} + \text{Certificates Of Deposits issued by the banks} + \text{Term deposits [excluding}$

$\text{FCNR (B) deposits}] \text{ with a contractual maturity up to and Including one year with the banking system} + \text{other deposits with the RBI.}$

4. $M_3 = M_2 + \text{Term deposits [excluding FCNR (B) deposits] with a Contractual maturity of over one year with the banking system} + \text{Call borrowings from Non-depository financial corporations by the Banking system.}$ (M_1 , M_2 & M_3 are compiled every fortnight).

In addition to the monetary measures stated above, the following liquidity aggregates to be compiled on monthly basis were also recommended by the working group:

1. $L_1 = M_3 + \text{All deposits with the Post Office Savings Banks (excluding National Savings Certificates).}$
2. $L_2 = L_1 + \text{Term deposits with Term lending institutions and refinancing Institutions (FIs)} + \text{Term borrowing by FIs} + \text{Certificates of Deposits issued by FIs.}$
3. $L_3 = L_2 + \text{Public deposits of Non-banking Financial Companies.}$
 (L_3 is compiled on quarterly basis).

5.6 SUMMARY

- Money is considered as a medium of exchange.
- Over the years money has performed many more functions than just being an exchange medium.
- Money supply is the total stock of money circulated in the economy. It is a stock as well as flow concept.
- There are two different views regarding the constituents of money supply- traditional or narrow and modern or broad.
- As per the recommendations of the RBI's Working Group

1998, the revised measures of money supply are M1, M2 and M3.

- Total money supply in the economy depends upon many factors which are called as the determinants of money supply.
- The velocity of circulation of money is the average number of times money changes hands during a given period of time, generally a year.

5.7 QUESTIONS

1. What is the meaning of money? What are the main functions of money?
2. Explain the concept of money supply.
3. What are the determinants of money supply?
4. Explain the concept of velocity of circulation of money.
5. Explain the RBI's Approaches to measurement of money supply.



DEMAND FOR MONEY

Unit Structure:

- 6.0 Objectives
- 6.1 Introduction
- 6.2 Keynesian Approach to Demand for Money
- 6.3 Classical Approach to Demand for Money
- 6.4 Friedman's Approach to Demand for Money
- 6.5 Summary
- 6.6 Questions

6.0 OBJECTIVES

- To understand the Keynesian Approach to Demand for money.
- To understand the Classical approach to demand for money.
- To understand the Friedman's approach to demand for money.

6.1 INTRODUCTION

Money is defined in Economics as 'anything that is generally accepted in payment for goods and services as a medium of exchange.' Money consists of currency and checkable demand deposits. Money is different from income and wealth. While income refers to a flow of purchasing power which is used to make payments for the services obtained from the factors of production, wealth is a stock of accumulated purchasing power. While income is a flow variable that is measured over a given period of time, wealth is a stock variable that is measured at a given point of time. While income is generally in the form of money and income in the form of money is known as nominal income, income in the form of goods and services is known as income in kind or real income. Real income is also measured in terms of constant prices. Wealth can be held in the form of monetary assets. Saving is the primary source of wealth. Money is the most liquid asset. The liquidity of assets refers to the ease with which an asset can be converted into a medium of exchange. Assets are classified as either financial assets or real assets and are ranked according to their liquidity. Currency, checkable deposits, savings deposits are the examples of liquid financial assets. Stocks and bonds are relatively less liquid financial assets. Precious metals like silver, gold, platinum etc are liquid real assets. Artwork, machinery and real estate are the examples of less liquid real assets. The liquidity of an asset is determined by the following factors:

1. Existence of a well established market in which the asset can be quickly sold.
2. Size of transaction costs (brokers fees, time costs)
3. Stability of the asset's price.

The price of a rupee is always a rupee. The prices of other assets measured in terms of money generally fluctuate. However, the value of a rupee is not fixed as it is measured in terms of purchasing power. For instance, at current prices a potato vada would cost you Rupees Ten a piece. In 1974 when I was studying in the fifth standard, Rupees Ten would fetch me 100 pieces of potato vada and with that money I could have arranged a potato vada party for 100 students. (The value of money: $V_m = 1/P$, where 'P' stands for price level.

6.2 KEYNESIAN APPROACH TO DEMAND FOR MONEY

J M Keynes introduces his theory on the demand for money through his book titled, the "General Theory of Employment, Interest and Money" in 1936. According to Keynes money was demanded due to three main motives i.e. the transactions motive, the precautionary motive and the speculative motive. The speculative motive of demand for money is a special contribution of Keynes.

(i) **The transaction motive :**

It refers to the transaction demand for money as a medium of exchange for carrying on current trade and business transactions.

Money is demanded for transaction purposes since it is received at discrete intervals of time and expenditure goes on continuously. Keynes classified the transactions motive into (a) income motive and (b) business motive.

(a) The income motive :

People hold cash to bridge the gap between the receipt of income and expenditure. The income in the form of salary or wages is recovered at a certain time like once in a week or once in a month. But expenditure goes on throughout all the time. To meet day-to-day expenditure a part of the income has to be held in the form of liquid cash. The following factors decide the amount of money held by people:

- Level of Income** As the level of income increases, the transaction demand for money of the individual will increase and vice versa.
- Tune Interval:** The longer the time interval between the receipt of income and expenditure, the higher the amount of money held by people for transaction purposes.
- The standard of Living :** The higher standard of living, the larger the amount of money held and vice versa.

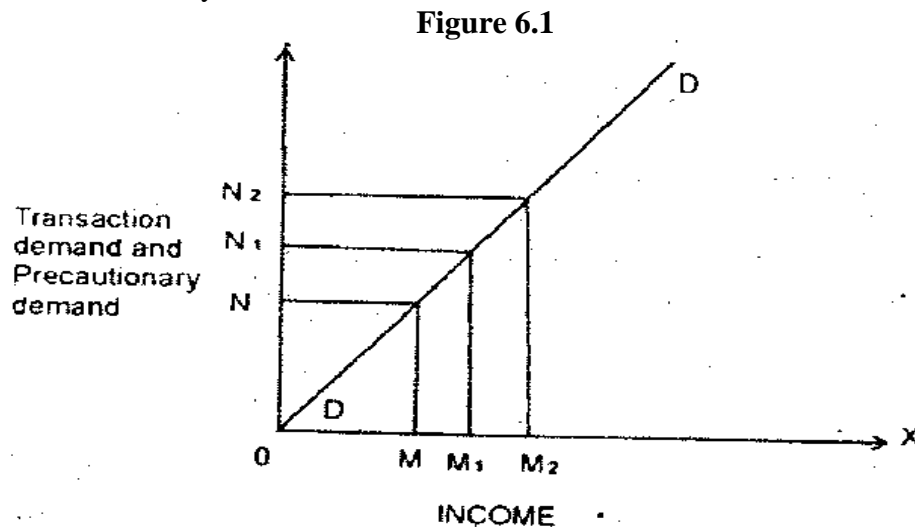
(b) The business Motive :

The businessmen and the firms also hold cash balance in order to bridge the interval between the time of incurring business costs or expenses and the receipt of the sale proceeds. The larger the volume of turnover or transactions for the business firms, the greater will be the amount of money held for this purpose. The amount of money held by the business firms depends on the size of their income and their turnover. The aggregate demand for money for satisfying the transaction motive is the sum total of the individuals demand for cash as well as the individual firm's demand for cash. This aggregate demand for money will depend upon total size of national income, the level employment and the price level.

The transactions demand for money primarily depends on the level of income. The transaction demand for money which is income-elastic can be expressed in the following manner.

$$L = (fy)$$

where L_t with transaction demand for money, T stands for function of and y stands for the national income. The figure below shows the transaction demand for money.



In the above figure, dd is rising indicating that, with the increase in national income, the demand for money for transaction purposes also rises,

(ii) The Precautionary Motive :

Besides the money kept also for transaction purposes, people hold additional amount of money to meet unexpected or unforeseen contingencies, emergencies or unexpected events. Money held for such precautions is known as precautionary motive. The accessibility of individuals and firms to the credit market determines the amount of money held for this purpose. If borrowing is easy or the assets of the people can be easily connected into cash, the amount of money held for this motive will be very low and vice versa. Uncertainty regarding future will make individuals and firms keep aside money for precaution purposes. The precautionary motive of demand for money depends on

the income level ie. $L = f(y)$, where 'Lp' stands for precautionary motive, T a function of and y, the level of income,

(iii) Speculative motive :

People hold money as a store of wealth or liquid asset for investment and lending, with a view to make speculative gains. People speculate about the future prices of bonds or securities or future interest rates. People prefer to hold securities where prices are expected to rise in future and vice-versa. People make capital gains from speculative about the prices of bond or securities or future interest rates. According to Keynes, the speculations motive is the desire to earn profit by knowing better than the market what the future will bring forth The individuals have to choose between holding money or other assets Uncertainly regarding the behaviour of the future interests and price of bonds leads to speculation. If the rate of interest is high and the prices of bonds are low, the lower will be liquidity preference. In such a case money will be lent or bonds will be purchased. There is an inverse relation between the prices of bonds and interest rate.

If the interest rate is expected to rise, or the prices of bonds to fall, people sell the bonds or assets and hold more cash. The people will buy the bonds when their prices actually fall In the other hand, if the people expect the rate of interest to fall, or prices of bonds to rise, people will buy bonds whose prices are expected to go up. This leads to a fall in liquidity preference. This shows that speculative demand for money is interest elastic. –

$L = f(i)$ where. L_2 is the demand for money for speculative purpose, (i) the rate of interest

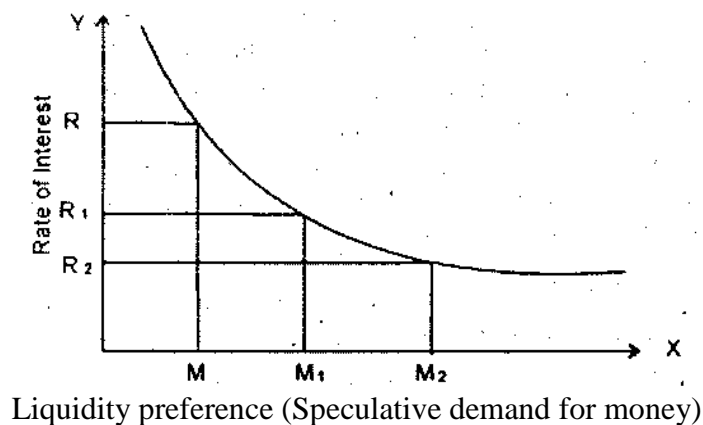


Figure 6.2

The above figure shows the inverse relation between the rate of interest and the speculative demand for money. It slopes downwards from left to right indicating that when the rate of interest is high, the demand for money is low and vice versa.

6.3 CLASSICAL APPROACH TO DEMAND FOR MONEY

The classical economists emphasized the medium of exchange function of money. According to the classical economists like J.S. Mill, David Hume and Irving Fisher, the demand for money arises since money facilitates the exchange of real goods and services among individuals. Hence money is demanded for buying and selling goods and services or for spending over a period of time. The classical economists believed that the demand for money depends on objective factors like the volume of exchange transactions of goods and services produced and supplied during a given period of time, the amount of money needed to buy the goods and services and by the velocity of circulation. Since the volume of goods and services changes from time to time, the demand for money also changes. The classical approach to the demand for money can be grouped into the Fishers cash -- Transactions Approach and the Cambridge economists' cash-Balances approach.

The Fisher's Approach to Demand for Money:

Irving Fisher's Equation of Exchange is one of the most prominent explanations which analyse the demand for money. According to Fisher, the demand for money means the amount of money to be held to undertake a given volume of transactions over a period of time. Fisher's equation of exchange is given as $MV = PT$, where M is the money supply, V the transaction velocity, T transactions and ' P ' the price level. ' PT ' in the equation represents the demand for money and MV stands for the supply of money. The demand for money (M_d) is equal to. It means that the demand for money is equal to ' P ' multiplied by ' T ' over a period of time and divided by V . The demand for money depends on the amount of money which people have to hold in order to carry on a volume of transactions over a period of time. According to Fisher ' V and ' T ' are constant during the short period. As a result, the demand for money varies with changes in ' P '. According to Fisher the supply of money (M_s) is equal to. Since the demand for money (M_d) is equal it means that the demand for money is always equal to the supply of money. Fisher's version of demand for money stresses the role of money in spending and not saving. The demand for money changes in proportion to the changes in the price level. V also determines the demand for money.

6.4 FRIEDMAN'S APPROACH TO DEMAND FOR MONEY

According to Milton Friedman who restated the quantity theory of money and prices there are four determinants of demand for money (i) the level of prices (ii) the level of real income and output (iii) the rate of interest (iv) rate of change in general price level.

Friedman Classifies the holders of money into (a) ultimate wealth holders (b) business enterprises His theory is relevant to the ultimate wealth holders

Friedman has given a very broad concept of wealth which includes all sources of income or services. According to Friedman, the demand for money is a demand for capital asset since money like capital assets provides services and returns. Bonds are monetary assets in which the people can hold their wealth and enjoy fixed interest income. The return on bonds is the sum of the coupon rate of interest and the anticipated capital gains or losses due to the expected change in the market rates of the interest People can also hold their wealth in the form of equity shares and enjoy returns in the form of dividend income and capital gains or losses Milton Friedman gave his demand function in the following manner

$$M_d = f(w, h, r_m, r_b, r_e, P, u)$$

This is the nominal money demand function. The demand for real money balances can be derived by dividing the nominal money demand by the price level

$$M_d = f(w, h, r_m, r_b, r_e, P \Delta P, u)$$

Where. M_d = demand for real money balances.

w = wealth of the individual

h = the proportion of human wealth to the total wealth held by the individuals

r_m = the rate of return on money or interest

r_b = the rate of interest on bonds

r_e = the rate of return on equity shares

p = the price level

ΔP change in the price level

u = Institutional factors.

The simplified version of Friedman's demand function for money can be written as,

$$M_d = f(r, Y_p, u)$$

The demand-function of Friedman, though it looks similar to Keynes equation is different from Keynes in some ways :-

- (1) Keynes gave importance to current income whereas Friedman gave importance to wealth

- (2) Friedman's theory does not consider unstable elements like the Keynes speculative demand for money
- (3) Friedman did not consider the possibility of a liquidity trap situation.

6.5 SUMMARY

1. The demand for money is a derived demand, since it is demanded for the functions that it performs. Broadly speaking the different approaches to the demand for money are (i) The classical approach (ii) The Neo-Classical approach (iii) The Keynesian approach (iv) The Modern Approach
2. According to the classical view of demand for money or the Fishers' version, money is demanded for transaction purposes. Fisher explains the transaction demand for money in the following form

$$MV = PT$$

$$M_d = PT/V$$

It means that the demand for money is the product of the volume of transaction (T) over a period of time multiplied by the average price level (P) and divided by the velocity (V).

3. Fisher assumes V and T^1 to remain constant during the short period. Hence, the demand for money varies with changes in 'P'. The Cambridge economists gave importance to the store of value function of money. According to the neo-classical or Cambridge economists, the demand for money is the amount of money people desire to hold. The demand for money can be expressed as $M_d = KPY$. The demand for money is a constant proportion (K) of y. Wherever there is a change in the price level or in the real national income, the demand for money also changes in equal proportion.
4. According to Keynes' view on the demand for money there are three motives of demanding income i.e. Transactionary, precautionary and speculative motive. The transaction and precautionary motives of demand for money depend on the level of income whereas the speculative demand depends on the rate of interest. The speculative motive is a negative function of the rate of interest. When the price of bonds is low or the rate of interest is high, people prefer bonds to liquidity and as the prices of bonds rises, people prefer liquidity to bonds.
5. When the rate of interest is very low, i.e., below the acceptable minimum people prefer to hold cash balances. This Situation is known as the 'Liquidity Trap.' The total demand for money according to Keynes is $L = L(y) + L(r)$
6. According to Milton Friedman there are four determinants of demand for money (i) the level of prices (ii) the level of real income and

output (iii) the rate of interest (iv) the rate of change in general price level. Friedman presented a broad picture of wealth which includes all sources of incomes or services.

6.6 QUESTIONS

1. Explain the Keynesian approach to demand for money.
2. Explain the classical approach to demand for money.
3. Explain the Friedman's approach to demand for money.



COMMERCIAL BANKING

Unit Structure:

- 7.0 Objectives
- 7.1 Introduction
- 7.2 Meaning of Commercial Bank
- 7.3 Functions of Commercial Bank
- 7.4 Multiple Credit Creation
- 7.5 Development of Commercial Banking Sector Since 1990-91
- 7.6 Summary
- 7.7 Questions

7.0 OBJECTIVES

- To know the meaning of commercial Bank.
- To know the functions of commercial bank.
- To know the concept of multiple credit creation.
- To know the balance sheet of commercial bank.
- To study the development of commercial banking sector since 1990-91

7.1 INTRODUCTION

According to the Banking Regulation Act 1949, banking is defined as **“accepting for the purpose of lending or investment of deposits of money from the public repayable on demand or otherwise and can be withdrawn by check, draft, and order or otherwise”**. A commercial bank is therefore a financial institution which deals in money or credit. It accepts cash deposits from the public and lends the deposits to borrowers in the form of loans and advances against collateral securities and makes profits. The difference between the deposit rates and lending rates is known as the **interest spread**. Interest spread constitutes the major part of the profits of a commercial bank. The deposits in a commercial bank are used to settle debts through the instrument of check. According to RS Sayers, “Banks are institutions whose debts usually referred to as bank deposits – are commonly accepted in final settlement of other people’s debts.” Sayers’ definition highlights the credit creating abilities of commercial banks which is central to any commercial bank also a distinguishing feature from other financial institutions like term lending financial institutions, investment banks, insurance firms etc.

7.2 MEANING OF COMMERCIAL BANK

There are various types of banks like the commercial banks, co-operative banks, agricultural banks, industrial banks, etc. Each of them are established with some specialized purpose. For example, the foreign exchange banks are specialized in the provision of the foreign currency, the industrial banks deal with the supply of credit to the industrial sector, etc.

Commercial bank can be defined as a joint stock company which deals with the money by accepting deposits from the people and by lending money to the entrepreneurs for various activities. The commercial banks act as a link between the savers and the investors. The people having surplus money may not be interested in the investment, while the people who wish to invest the money may not have surplus funds. These two types of people have to be brought together or at least the surplus funds of the people are to be made available to the investors. The commercial banks are the important institutions undertaking the task of encouraging the people to save their surplus funds in the form of the bank deposits by paying them interest on their savings and then to circulate these funds among the investors and charging interest rate from them. In the process, the commercial banks make profits.

The commercial banks can not print the notes. The printing of money is an exclusive right to the central bank of the country. But the commercial banks are the profit earning institutions. They play an important role in the creation of credit in the economy by reutilizing the existing deposits of their customers. Thus, the commercial banks are not only the traders of money but they are also the creators of credit. In the further discussion we will try to understand how this is done.

7.3 FUNCTIONS OF COMMERCIAL BANK

The functions of the commercial banks may be subdivided into two categories

- A) Banking Functions
- B) Non-banking or Subsidiary functions

7.2.1 Banking functions of the commercial banks

1) Accepting deposits-

The commercial banks accept deposits from the people and pay them the interest rate on their deposits. The rate of interest varies in accordance with the amount of deposits and the duration for which the deposits are kept with the bank. There are various kinds of deposits.

A Demand deposits-These are withdrawals at any time or whenever the depositor demands. Either a very low interest rate is paid on such deposits or no interest is paid. A depositor can withdraw any number of

times from his demand deposit account There are generally no restrictions on the withdrawals

B Saving bank deposits - These deposits are generally opened by the salaried people An account can be opened with a small sum of money. A very little interest rate is paid on these accounts

C Fixed or Time deposits - Under these deposits, money is kept for a certain fixed period of time, say, a year, three months, five years, etc. These deposits can earn more interest rate and, the fixed deposits are the important way in which the people keep their savings. There is a restriction in the number of withdrawals from the time deposits and if these, deposits are withdrawn before the expiry of the time, the depositor has to pay a penalty.

D Recurring deposits :Here a depositor is supposed to save a certain amount in his recurring deposit account every month or every year The purpose of these deposits is mainly to inculcate the saving habits among the people. These deposits also earn a reasonably high rate of interest.

ii) Giving loans:

The commercial banks are the important financial institutions So they mobilize the money from the saving agents and lend these to the customers who want to borrow the money for productive purposes. The commercial banks generally lend money for short or medium term. They .lend money to various productive sectors like industry, trade, commerce, tourism, export and import activities and also to the agricultural sector While lending money to the customers, the commercial banks have to follow the rules and regulations fixed by the central bank of the country, they can lend money in accordance with their deposits, they also have to keep some amount of their deposits as reserves .This means that they cannot lend 100% of their deposits but have to maintain a part of their deposits in the liquid form. We will study more about the credit creation capacity of the commercial banks later in the following discussion. The commercial banks give loans in various forms –

- a. **Call loans** - These are the loans which are given for a very short period of time i.e. 24 hours. They are generally given to the stock brokers and agents.
- b. **Bill of Exchange** - The bill of exchange is used in the business payments. Here the person who is supposed to make payments (debtor) gives a written promise to the person to whom the money is to be paid (creditor) to make payment in a particular. . time period say, between one month and three months. The creditor can immediately discount these bills from the commercial banks. That means the creditor can take -, this written promise to the commercial bank, get cash in exchange but pay some amount as a discounting rate. The creditor gets the

cash immediately but he has to accept a slightly less amount than what the discount bill is meant for.

- C. Overdraft facility - The commercial banks also allow their regular depositors to withdraw more money than what they have in their account. Some interest rate is charged only on the amount which is over and above the actual deposits of the borrower in the bank.
- D. Loans - The commercial banks provide direct loans to the customers who have a sound investment project and a capacity to pay back the loans. The commercial banks even earn money by, charging rate of interest on these loans

7.2.2 Non-banking Functions of the commercial banks

- i) **Agency services** - The commercial banks act as agents of their customers and they perform various services for them. They may collect cheques on behalf of them, they may sell and purchase securities and other financial assets, they may carry correspondence on behalf of their customers.
- ii) **Collection** - The commercial banks also collect cheques, drafts, dividends, bills and other type of receipts of their customers. The banks may charge some service charges for providing these services but the customers get a lot of help from the commercial banks in speedy provision of these services.
- iii) **Payments** - With a request from the customers, the commercial banks can also make certain payments on behalf of the customers. They can pay the insurance premium, rents, taxes, electricity bills, telephone bills, etc if they are instructed to do so by their customers.
- iv) **Utility services** - The commercial banks provide many utility services like underwriting facilities, locker facilities, draft facility, foreign exchange dealings, guarantor, etc.
- v) **Publication of data and other statistical information** - The commercial banks may also be engaged in the collection and publication of statistical information regarding the important financial indicators.

7.4 MULTIPLE CREDIT CREATION

The commercial banks, as we have seen earlier, are the profit earning institutions. They have to utilize the deposits kept by the people with them, convert these deposits into the advances and then earn the rate of return on these loans. The process by which the commercial banks turn their primary deposits into the secondary or active deposits and earn profit is called a process of multiple credit creation. In this part of the unit, we will first understand all the concepts related to the credit creation process and then we will actually learn how the banks can create money out of the existing deposits.

The money accepted by the banks from its depositors in the form of cheque or cash is called as the primary deposits. These deposits, are passive in nature.

With the help of the primary deposits, the commercial banks can advance loans of different types. These are called as the secondary or derivative deposits. These deposits are active in nature and it is these deposits that bring out the profitability to the commercial bank.

The process of multiple credit creation can be explained with the help of following assumptions :-

- 1 There are many banks operating in the economy.
- 2 People deposit money with the bank
- 3 There is a sufficient demand for the bank loans
4. The banks keep a part of their deposits in terms of cash reserves which are legally fixed by the central bank.

Suppose Bank A receives Rs. 20,000 as the primary deposits (money deposited by a customer in the bank). Suppose the banks are required to keep 20% as a reserve requirement prescribed by the central bank The balance sheet of the bank A will look something like this

Assets		Liabilities	
Fresh deposits	20,000	Fresh cash	20,000
Total	20,000	Total	20,000

Now suppose that Bank A wants to advance loans, it has to keep 20% of its deposits as a cash reserve requirement The remaining amount can be given as loans. Now the balance sheet will look as follows :

Assets		Liabilities	
Reserves	4,000	Deposits	20,000
Loans	16,000		
Total	20,000	Total	20,000

Now if Bank A gives loans worth Rs 16,000, the total money supply in the economy also has increased by 16,000/- A person who borrows Rs 16,000 may make his payments by cheque which may be deposited in Bank B. The balance sheet of Bank B will look something like this :-

Balance sheet of Bank B

Assets		Liabilities	
Reserves	3,200	Deposit	16,000
Loans	12,800		
Total	16,000	Total	16,000

So now Rs. 12,800 are added into the money supply. This process continues and from the primary deposits of Rs. 20,000 many times more secondary deposits are created which is called as the process of multiple credit creation.

Following table briefly explains the process of multiple credit creation in a given period of time.

Banks	Primary Deposits	Loans	Reserves
A	20000	.16000	4000
B	' 16000	12800	3200
C	12800	10240	2560
D	10240	8192	2048
E	8192	6553.60	1638.40
F	-		
G	-		
H	.		
	etc	Etc	Etc
Total of the banking system	100000	80000	20000

Thus, at the end of the process of multiple credit creation, the primary deposits increase by 5 times and become worth Rs. 1,00,000; the loans given to the investors are worth Rs. 80,000/- and the reserves with the central bank are Rs. 20,000/- which is 20% of the total deposits.

The value of multiplier is 5 in the above example and hence the secondary deposits are 5 times more than the primary deposits.

The value of multiplier (k) is found out with the help of following formula.

$$= \frac{1}{R}$$

Where

K-multiplier

R - reserve ratio

In the above example R = 20%

K

2 %

Value of multiplier is $K = 5$.

7.4.1 Limitations to the credit creation process of commercial banks

Though the commercial banks can create credit with the help of the deposits, their capacity to create credit is limited by many factors. They can not expand credit indiscriminately. Following are some of the limitations on the credit expansion capacity of the commercial banks

(1) Cash Reserve Ratio

The commercial banks can expend the credit with the help of cash in their hands. A part of cash with the commercial banks has to be kept with the central bank. Higher this part (CRR), lower is the capacity of commercial banks to expand credit.

(2) Amount of Primary Deposits

The commercial banks can not print notes. They have to depend totally on the deposits kept with them their customers. These are the primary deposits. More the volume of these deposits, greater is the credit expansion and vice versa.

(3) Caution

The banks have to keep certain amount of deposits in cash to meet the regular demand by customers. Sometimes, to gain confidence of the public, the commercial banks may keep a larger amount of deposits in terms of cash than legal requirement. This limits their capacity to expand credit.

(4) Policy of the Central bank

The central bank may influence the credit creation capacity of the commercial banks. It may either follow cheap money policy to enforce commercial banks to expand credit or it may follow dear money policy to make commercial banks restrict their credit creation capacity.

(5) Banking habits of the people

In a community where the people make their transactions more with the help of cheques than cash, the commercial banks can expand credit more rapidly. This is because they do not have to maintain more cash reserves in this situation and can use a large amount of primary deposits for credit creation. But exactly opposite will be the case, if the people of a community have more preference towards making cash transactions.

7.5 DEVELOPMENT OF COMMERCIAL BANKING SECTOR SINCE 1990-91

Indian commercial banking sector has seen spectacular expansion in number of branches, volume of deposits, credit created and other parameters. However, this progress was not without its problems. We shall now examine the impact of reforms on the commercial banks.

The number of branches of increased from 60,220 in March 1991 to 1,05,752 by March, 2013. This shows an impressive performance. However, the percentage of rural branches declined from 58.5 to 37.2 percent of the total during this period. Thus, there is a clear indication that the banks are now more focused on profits and seem to have given up the objective of providing services in un-banked areas. The new private sector banks and foreign banks have a clear urban and metropolitan orientation. As these banks increase both in terms of number of branches and business, the semi-urban and rural population may be deprived of the banking services.

The following table shows the progress of commercial banking in India after 1991 in terms of the ownership by different groups.

Year	1991	2012
Scheduled Commercial Banks	104	84
State Bank Group	8	7
Nationalised Banks	20	19
Old Private Sector Banks	25	15
New Private Sector Banks	9	7
Foreign Banks	42	36

Source: RBI: Report on Trend and Progress of Banking in India (various issues).

The above table shows a decline in the number of Scheduled Commercial Banks (SCBs) declined after 1991. This is due to the mergers of both the public sector and private sector banks to improve the operational efficiency.

The SCBs in India posted a healthy deposit growth with the introduction of the economic reforms in 1991. The aggregate deposits and credit by the SCBs during selected years are shown in Table

Deposits and Credit by SCBs during selected years (. Cr.) :

Year	End of March, 1991	End of March, 1995	End of March, 2001	End of March, 2006	End of March, 2009	End of March, 2012
Aggregate Deposits	2,30,758	4,33,819	9,62,618	21,09,049	38,34,110	59,09,082
Total Bank Credit	1,25,592	2,54,015	5,11,434	15,07,077	7,15,724	46,11,852
Credit-Deposit Ratio	54.5	58.5	53.1	71.5	72.4	78.0

Source: RBI: Handbook of Statistics relating to Indian Economy, 2009.

The credit-deposit ratio is another important indicator of the efficiency of the banking sector, prior to the introduction of the reforms in the banking sector; most of the funds of the SCBs were used by the government under the Statutory Liquidity Ratio (SLR) regulations. After 1998, this ratio improved with the freeing of funds that were earlier committed to SLR.

The net profits of the SCBs improved from ₹4,504 crore in 1996-07 to ₹52,771 crore in 2008-09. The Public Sector Banks (PSBs) accounted for nearly half of the total profits. Table shows the profit ratios of different groups of SCBs during 1996-97 and 2011-12.

Net Profits to Total Advances Ratios of SCBs (1997-2012)

Bank Group	March 31, 1997	March 31, 2012
Public Sector Banks	0.57	0.88
Nationalised Banks	0.41	0.88
SBI Group	0.41	0.89
Old Private Sector Banks	0.84	1.20
New Private Sector Banks	0.73	1.63
Foreign Banks	1.19	1.76
All Scheduled Commercial Banks	0.67	1.08

Source: RBI: Report on Trend and Progress of Banking in India (various issues).

From the above table we can see that the profits of the SCBs show a definite improvement after the introduction of the economic reforms and allowing the interest rates to move according to the market conditions. The most important fact to be noted is the improvement in the profits of the PSBs. They nearly doubled across all the groups of SCBs.

An important indicator of the performance of a commercial bank is the net profit to the total assets. In this case, we observe that the profit ratio does not show a clear cut upward trend across the SCBs. Only the new private sector banks posted an improvement. The decline in the net profits ratio during 2008-09 is attributable partly to the global slowdown in 2007 and 2008. Table shows the net profit to total assets ratios of the SCBs during 1991-2012.

Net Interest Income to Total Assets Ratio of SCBs in India (1992-2012) :

Year	1992	2002	2009	2012
Scheduled Commercial Banks	10.27	8.26	7.4	8.9
State Bank Group	3.8	8.62	7.0	9.5
Nationalised Banks	2.86	8.78	7.4	9.6
Old Private Sector Banks	5.7	9.36	8.1	9.5
New Private Sector Banks	N.A.	8.56	8.9	10.5
Foreign Banks	11.61	8.26	6.8	9.5

Source: RBI: Report on Trend and Progress of Banking in India (various issues).

An important facet of the economic liberalisation is improvement in the non performing assets (NPAs) of the commercial banks. These loans hold up liquidity and hamper the ability to generate credit. In this direction, the RBI initiated measures like loan syndication and debt recovery tribunals (DRTs) to improve the asset quality of the SCBs. As a result of these efforts, there is a significant improvement in the performance of the banks in India. Table 17.5 shows the NPAs of the SCBs during selected years. From the table we can that the NPAs as percentage of both total advances and total assets registered a decline during 1995-96 and 2006-07. However, following the global financial crisis in 2007 and 2008, the NPAs registered a marginal increase in nominal terms from ₹53,097 crore in 2005-06 to ₹56,435 crore and ₹68,973 crore in gross terms and to ₹24,734 crore and ₹31,424 crore during 2007-08 and 2008-09. However, due to better asset management by the commercial banks and larger provisioning, the net NPAs as percent of net advances came down. The NPA position of the new private banks and foreign banks worsened. This could possibly due to the fact that these banks cater to the clients in the corporate sector and in services sector. The PSBs performed relatively better with 16 percent increase in their NPAs during 2007-09 compared to the doubling of the NPAs of the new private and foreign banks during this period.

Gross and Net NPAs of Commercial Banks in India (1996-97 to 2011-12) (in ₹ crore)

Year	1996-97		2001-02		2005-06		2010-11	
Type of Bank	Gross NPAs to Gross Advances	Net NPAs to Net Advances	Gross NPAs to Gross Advances	Net NPAs to Net Advances	Gross NPAs to Gross Advances	Net NPAs to Net Advances	Gross NPAs to Gross Advances	Net NPAs to Net Advances
All SCBs	47,300 (15.7)	22,340 (8.1)	70,861 (10.4)	35,554 (5.5)	51,097 (3.3)	81,543 (1.2)	97,922 (2.4)	41,813 (1.1)
Public Sector	(17.8)	(9.2)	(11.1)	(5.8)	(3.6)	(1.3)	(2.3)	(1.1)

Banks								
Old Private Sector Banks	(10.7)	(6.6)	(11.0)	(5.8)	(3.6)	(1.3)	(2.3)	(1.1)
New Private Sector Banks	(2.6)	(2.0)	(8.9)	(4.9)	(1.7)	(0.8)	(2.3)	(0.6)
Foreign Banks	(4.3)	(1.9)	(5.4)	(1.9)	(0.96)	(0.43)	(2.5)	(0.7)

Figures in the parentheses show the percentage values.

Source: Reserve Bank of India: Report on Trend and Progress of Banking in India (various issues).

Another important indicator of a commercial bank's performance is the Risk-weighted Capital to Asset Ratio (RCAR). This is also popularly known as the capital adequacy ratio. This ratio indicates the provisioning for assets of the commercial banks in terms of the risk of default specific to a particular asset of the banking system. These are also known as prudential norms, the asset management of a commercial bank. The RBI has initiated measures to improve the capital base of the commercial banks in India to prepare them adequately for the risk that is contingent on assets of a commercial bank in a globalising economy. As a part of this, the government took initiatives to recapitalise the PSBs. As a result of these initiatives on the part of the RBI and government, the RACR of SCBs improved significantly. In 1995-96, 42 SCBs achieved a RACR of 10 percent or more and 33 banks had a RCAR of 8 to 10 percent. The average of all SCBs was 8.7 percent in that year. By 2000-01, this ratio improved to an average of 11.1 percent for all SCBs. Only 2 banks had an RCAR of less than 9 percent. 84 of them achieved a capital adequacy ratio of more than 10 percent and 12 banks had between 8 to 10 percent.

The RBI observed in its Report for 2008-09 that, "one significant aspect is that unlike other countries where the adverse loop operated from the financial to real sector, in India the banking sector has got an impact from the real sector. Secondly, the fact that so far, financial sector reforms have been calibrated with a progressive integration into the world economy has paid us rich dividends. A key consideration in the choice of pace and sequencing has been the management of volatility in financial markets and implications for the conduct of monetary operations. The nuanced approach to financial sector reform has served India well with an accent on conscious gradualism in the implementation of coordinated and sequenced moves on several fronts. What have been ensured are appropriate safeguards to ensure stability, while taking account of the

prevailing governance standards, risk management systems and incentive frameworks in financial institutions in the country. Overall, these progressive but cautious policies have contributed to efficiency of the financial system while sustaining the growth momentum in an environment of macroeconomic and financial stability. The policy challenge is to continue to ensure financial stability in India during this period of international financial turbulence, while achieving high growth with price stability”.

Thus, after the introduction of the banking sector reforms in 1991, the commercial banks in India were resilient enough to face the global financial crises that were experienced in 1998, 2007 and 2008.

7.6 SUMMARY

- The commercial banks are the oldest institutions dealing with lending and borrowing of funds.
- They perform two main functions of accepting deposits and lending money.
- The financial development of a country depends upon the expansion of commercial banks.
- The commercial banks create the secondary or derivative deposits with the help of multiple credit creation process.
- There are many limitations to the process of multiple credit creation.
- A role of the public sector in commercial banking has been greatly enhanced through progressive nationalisation of banks. As a result of nationalisation, the public sector banks occupy a dominant place in commercial banking in India.

7.7 QUESTIONS

1. What is the meaning of commercial bank? Explain the functions of commercial bank.
2. Explain the concept of multiple credit creation.
3. Explain the development of commercial banking sector since 1991.



CENTRAL BANKING

Unit Structure:

- 8.0 Objectives
- 8.1 Introduction
- 8.2 Meaning of Central Bank
- 8.3 Functions of Central Bank
 - 8.3.1 Traditional Functions of Central Bank
 - 8.3.2 Developmental Functions of Central Bank
 - 8.3.3 Promotional Functions of Central Bank
- 8.4 Summary
- 8.5 Questions

8.0 OBJECTIVES

- To know the meaning of central bank.
- To understand the measure functions of central bank.

8.1 INTRODUCTION

In the modern times, the central bank is the most important institution in the financial structure of an economy. It is the agent of the government and through the central bank the policies of the government regarding monetary and fiscal issues are implemented. The activities of a central bank play very important role in the proper functioning of economy and in the fiscal functions of the government.

The Riksbank in Sweden was established in the year 1668 which was example*of early central banks. The Bank of England was established in 1694 which became a full-fledged central bank in 1844. The Bank of England happened to be the first Central Bank in the history of central banking on the guidelines of which many other central banks were established. So the history of central bank coincides with the development of Bank of England. By the end of 19th Century, almost every European country had a central bank. Today every independent country has a Central bank. Many of these central banks were established after 1940.

8.2 MEANING OF CENTRAL BANK

The definition of the Central bank is derived from its functions. Since the functions of central bank are various, it is difficult to define

central bank in the exact manner. Following are some of the important definitions:

De Cock : A central bank is a bank which constitutes the apex of the monetary and banking structure of its country.

D.C. Rowan : The central bank is an institution which is often but not always owned by the state, which has an overriding duty of conducting the Monetary Policy of the government

Vera Smith : The banking system in which a single bank has either a complete or residuary monopoly in the note issue is called a central banking system.

Thus different economists have defined Central banking differently taking into consideration the functions to be performed by the central bank. From the definitions of the central bank we may understand the functions of central bank as follows:

- Regulation of currency according to the requirement of business. -
- Keeping the cash reserve of commercial banks.
- Performing general banking and agency functions for the government.
- Management of the stock of foreign exchange for the country.
- Granting loans or credit to the commercial banks and other financial institutions as per the need.
- Settling the balance between the different banks in the country.
- Supervising the activities of commercial banks and other financial institutions.
- Controlling credit flow in the economy in accordance with the needs of business.

8.3 FUNCTIONS OF CENTRAL BANK

The functions of a central bank can be studied under two heads :-

- I] Traditional Functions
- II] Development Functions
- III] Promotional Functions.

8.3.1 Traditional Functions of Central Bank

1) Bank of Issue :-

Issuing of Currency notes is the sole responsibility of the government of any bank and on behalf of government the central bank issues currency notes. Earlier, each bank was allowed to issue currency note. But over the years, the entire responsibility was given to the central bank. So note issuing is one of the most important functions of the central bank. The monopoly of note issue was given to the central bank because of the following reasons :

- to control the excessive credit expansion i.e. to control the supply of money in the economy
- To bring about confidence and uniformity with regard to currency notes.
- For proper supervision and control over the entire activity of note issuing and circulation.
- To solve the problems related to monetary management single handed.
- To give a special power to the central bank so that it stands different from the other banks.

2) Government's banker:

The central bank acts as a banker, adviser and agent to the government of that country.

As a Banker the Central Bank does regular banking jobs for the government. It accepts deposits in terms of cash, cheques or drafts for different levels of government central, state *and* local. It becomes the depositor of the government money It also gives loans to the government whenever needed. It accepts the tax on behalf of government The temporary loans are adjusted against the tax receipts. The management of treasury bills is .done through the central bank. It also controls and manager foreign exchange affairs for the government Thus, it provides those services to the government that commercial banks would provide to their customers. So it is called the banker to the government

As an adviser to the government, a central bank undertakes surveys in the economy and guides the government to act in a particular way to solve country's-financial problems. It gives advice to the government on monetary, matters, money markets and capital markets. The government may also seek an advice from the central bank on the issues related to balance of payments, deficit financing, foreign exchange reserves, etc

As an agent to the government, a central bank has to perform many activities. It has to execute the Monetary Policy of the Government, it has to manage public debt, deal with the government securities, represent the government on the issues regarding international finance and foreign exchange, deficit financing.

3) Banker's Bank :

The.' central bank acts as an agent not only for the government but also for the other commercial banks of the country. It is the apex of the entire financial structure and the banking institutions. So it is the head of all the banks and hence it controls and supervises the activities of all these institutions. Under this role of the central bank following activities are done :-

- a) The central bank accepts and keeps cash reserve of the commercial banks.

- b) The central bank discounts bills of commercial banks to make credit available to them whenever they need.
- c) The central bank is considered to be the lender of last resort for the commercial banks because it is the ultimate source of credit or financial assistance to the banks.
- d) The central bank acts as a clearing agency for the commercial banks. Each commercial bank keeps a minimum stipulated amount of cash reserves with the central bank. So all the claims of that commercial bank with the central bank are cleared through these reserves.
- e) Inter-bank transactions are also settled down through the central bank. So all the financial transactions of the member banks or commercial banks between each other are facilitated through the central bank. This helps in clearing the claims without actually using the cash.

4) Controller of Credit:

The central bank being an apex of all financial and banking institutions has to control the credit flow in the economy. This is essential to maintain stability in the economy. Controlling of credit means to make money available in a large quantity when the economy needs it and vice versa. For example during the boom period, when more funds are demanded, the central bank should be in a position to make funds available. During the slack season, when funds are not demanded in the larger quantity, a central bank should be in a position to reduce their supply. This is needed for maintaining economic stability.

As a controller of credit, the central bank of a country controls and manages the direction use and volume of credit in the economy. (A detail analysis of credit control is done in the next unit). This is done with the help of many instruments like bank rate, open market operations, variable reserve ratio, selective credit control measures, etc.

5) Custodian of foreign exchange reserves.

The exchange rate stability is one of the important objectives of any country. To achieve this objective, it is necessary to regulate and manage the foreign exchange reserves of a country in the best possible way. The central bank of a country also has a responsibility of maintaining foreign exchange reserves. Under the gold standard system, the central bank was supposed to maintain stable exchange rate by increasing or decreasing the money supply in the economy. Even after the breakdown of gold standard, the central bank is supposed to control the buying and selling of foreign currency and all other matters related to foreign exchange transactions. The gold reserves & foreign exchange reserves are kept as a basis for issuing notes by the central bank by maintaining and controlling the foreign exchange reserves.

All those are the traditional functions of the central bank/Central bank of any country - whether a developed or an

underdeveloped country. Apart from these regular functions, the central bank of a developing country has to perform certain additional functions. Due to the slow pace of development of many sectors in the economy, a central bank of such countries has to perform some typical functions which are known as promotional functions of the central bank.

8.3.2 Developmental Functions of Central Bank

The introduction of Five Year Plans in 1951 led to the RBI to adopt development banking. The following are the important development function that the RBI adopted to create efficient machinery for providing finance needed for economic development. It also created institutions that will ensure adequate flow of funds for different productive sectors of the economy.

- 1) Establishment of Financial Institutions: RBI was actively involved in the setting up of development finance institutions like the Industrial Finance Corporation of India (IFCI), Industrial Development Bank of India (IDBI), National Bank for Agriculture and Rural Development (NABARD), Unit Trust of India (UTI), Small Industries Development Bank of India (SIDBI), State Finance Corporations (SFCs) and Deposit Insurance Corporation (DIC). These institutions played an active role in channelising resources to flow into the productive sectors of the economy.
- 2) Supervision of Commercial Banks: The Reserve Bank of India Act, 1934 and Banking Companies Act, 1949 give the RBI authority on licensing and inspecting of commercial banks operating in India. It is empowered to lay the guidelines for lending policies, amalgamation and mergers of weak banks. It sought to restrict the detrimental control exercised by particular groups of persons on banks. It also played an important role in the consolidation of the State Bank of India group. It played an active role in strengthening the co-operative credit system. With the introduction of the banking sector reforms, RBI sought to promote efficiency and competition in the banking sector. It has also introduced autonomy with accountability, effective risk management systems, operational flexibility, and information systems. It campaigned effectively for the introduction of prudential norms in the banking sector and improving the profitability of the banks. India happens to be one of the few LDCs to fully implement the Basle I norms on banking like the CRAR, bank capitalisation regulations. Due to the statutory audit and inspection system evolved by the RBI, Indian banking system remained free from major crisis.
- 3) Expansion of Banking Services: RBI used its regulatory authority to ensure the geographical spread of the banking services. Branch expansion regulations ensured that the rural economy is integrated with the national economy and credit is channelised into the priority sectors. As the branch expansion regulations were found to be detrimental to the effective functioning of the banks, the RBI relaxed these norms following the recommendations of the Narasimham

Committee. It also liberalised the norms regarding the setting-up of ATMs.

- 4) **Credit Policy Initiatives:** The Reserve Bank played an active role in promoting credit to the priority sectors. In addition to stipulating annual lending targets, it introduced the Lead Bank Scheme in 1969. For each district in the country credit targets were set, beneficiaries identified for the provision of productive credit to the needy. It also provided for concessional credit to the exporters on both, pre- and post-shipment basis. The RBI played an important role in the setting-up of the Regional Rural Banks (RRBs). It provided liberal re-financing facilities in addition to providing managerial assistance. Because of these initiatives, credit flows for agriculture, exports and small-scale units improved significantly. In 1971, to meet the risk of default in payments of interest and principal for commercial banks the RBI set-up the Credit Guarantee Corporation of India. Despite the Narasimham Committee's recommendations to abandon the priority sector lending targets, RBI continues with them.
- 5) **Interest Policy:** An important policy imperative in a developing country is to ensure adequate credit at reasonable interest rates. The differential interest rate (DRI) scheme became an important policy plank of the RBI since 1969. This scheme provided for concessional interest rates on priority sector operations. It also sought to regulate interest rate on deposits and lending operations of the commercial banks so that the cost of borrowing to the government is kept at the minimum. However, starting in 1991, the Reserve Bank liberalised the interest rates. Now RBI allows commercial banks to decide on their own deposit and lending rates. This greatly enhanced the market efficiency in reflecting the relative risk of each asset.

8.3.3 Promotional Functions of Central Bank

Through the promotional functions, the central banks of developing countries help the governments to achieve the objectives of economic development and dynamic growth of a country. Since the central banks in the developing countries were established very late in 1940s and 1950s and since these countries have aimed at rapid economic development, the central banks also have been one of the instruments to achieve this objective. Following is a brief analysis of promotional functions of the central bank :

1) Expansion of banking system.

The developing countries have slow expansion of their banking sector. The rural areas do not have adequate banking facilities. The central bank of such countries has to play an important role to expand the banking sector. Generally, the commercial banks are not interested in providing credit to the agricultural sector and small scale industrial sector. By making it compulsory to direct a part of credit towards rural areas, the central bank can make the commercial banks to play an important role.

2) Establishment of New Financial institutions.

The industrial sector of the developing countries needs financial-resources. To ensure adequate credit to these sectors, the central bank takes initiative to start new financial institutions. For example, the RBI played an important role in establishing financial institutions like IDBI, NABARD, LIC, etc., which are now actively involved in providing loan facilities to the industrial sector.

3) Development of money and capital market.

A money market is a place where the short term loans are given. A capital market is a place where long term loans are given. The money and capital market function with different types of financial institutions. In the developing countries, the central bank plays an important role in establishment and development of such institutions. The central bank also monitors the development of these markets. It makes available various credit instruments because of which lending and borrowing of money is facilitated.

4) Promote Investment:

With the help of appropriate monetary policies, the central bank encourages savings from the people and make the funds available for the investors. By adopting the differential interest rate policy, the central bank promotes the development of priority sectors in the economy. For example; the RBI insists on charging low interest rate on the loans provided to the small scale industries, export sector, agriculture and other priority sectors. By making it legally compulsory to do so, the RBI makes the commercial banks to follow a policy of different interest rates to different sectors.

8.4 SUMMARY

In this unit we have focused on the functions of a central bank in both developed and developing countries. We may conclude with the help of following points.

- a) The central bank is the apex institution in the entire financial structure
- b) The concept of central bank is defined in many ways depending upon its functions.
- c) The primary or traditional functions of the central bank include the right to note issue, controlling of credit, acting as government's agent, bankers' bank and custodian of foreign exchange reserves.
- d) The promotional functions of a central bank are important particularly in the developing countries where the central bank has to take important steps to develop different sectors in the economy.
- e) The monetary Policy is an important instrument in the hands of central banks to control credit flow in the economy.
- f) Many macro-economic objectives like economic growth, price stability,

exchange ratio stability, etc. can be achieved through monetary Policy.

- g) There are conflicts among various objectives of monetary Policy.
- h) Bank rate policy, open market operations and variable reserve requirements are the general or quantitative credit control measures.
- i) Selective or qualitative credit controls aim at restricting and directing the use of credit,
- j) Through the credit control techniques, the central bank enforces the economic objectives on the activities of commercial banks.

8.5 QUESTIONS

1. Explain the meaning of Central Bank.
2. What are the functions of Central Bank?

