ਜਗਤ ਗੁਰੂ ਨਾਨਕ ਦੇਵ
ਪੰਜਾਬ ਸਟੇਟ ਓਪਨ ਯੂਨੀਵਰਸਿਟੀ
ਪਟਿਆਲਾ

The Motto of Our University

(SEWA)

SKILL ENHANCEMENT

EMPLOYABILITY

WISDOM

ACCESSIBILITY

SELF-INSTRUCTIONAL STUDY MATERIAL FOR JGND PSOU

JAGAT GURU NANAK DEV
PUNJAB STATE OPEN UNIVERSITY, PATIALA

(Established by Act No. 19 of 2019 of the Legislature of State of Punjab)

MASTER OF ARTS

CORE COURSE (CC): ECONOMICS

SEMESTER- II

MAEC24201T -MACRO ECONOMICS

Head Quarter: C/28, The Lower Mall, Patiala-147001
Website: www.psou.ac.in

The Study Material has been prepared exclusively under the guidance of Jagat Guru Nanak Dev Punjab State Open University, Patiala, as per the syllabi prepared by Committee of Experts and approved by the Academic Council.

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PREFACE

Jagat Guru Nanak Dev Punjab State Open University, Patiala was established in December 2019 by Act 19 of the Legislature of State of Punjab. It is the first and only Open Universityof the State, entrusted with the responsibility of making higher education accessible to all, especially to those sections of society who do not have the means, time or opportunity to pursue regular education.

In keeping with the nature of an Open University, this University provides a flexible education system to suit every need. The time given to complete a programme is double the duration of a regular mode programme. Well-designed study material has been prepared in consultation with experts in their respective fields.

The University offers programmes which have been designed to provide relevant, skill-basedand employability-enhancing education. The study material provided in this booklet is self- instructional, with self-assessment exercises, and recommendations for further readings. The syllabus has been divided in sections, and provided as units for simplification.

The University has a network of 100 Learner Support Centres/Study Centres, to enable students to make use of reading facilities, and for curriculum-based counselling and practicals. We, at the University, welcome you to be a part of this instituition of knowledge.

Prof. G.S
BatraDean Academic
Affair

JAGAT GURU NANAK DEV PUNJAB STATE OPEN UNIVERSITY, PATIALA

(Established by Act No. 19 of 2019 of the Legislature of State of Punjab)

M.A (ECONOMICS)

SEMESTER - II
MAEC24201T MACRO ECONOMICS I

MAX. MARKS: 100
PASS: 40%
INTERNAL: 30
EXTERNAL: 70
TOTAL CREDITS: 6

OBJECTIVE

After introducing the students with the issues related with an individual consumer, firm and market in the first semester, this course in the second semester throws light on the national economy as a whole. This course includes the basic theories of determination of income, consumption, investment, employment, money and interest, inflation, Monetary and Fiscal policies, and business cycles.

INSTRUCTIONS FOR THE PAPER SETTER/EXAMINER:

1. The syllabus prescribed should be strictly adhered to.
2. The question paper will consist of three sections: A, B, and C. Sections A and B will have four questions from the respective sections of the syllabus and will carry 10 marks each. The candidates will attempt two questions from each section.
3. Section C will have fifteen short answer questions covering the entire syllabus. Each question will carry 3 marks. Candidates will attempt any ten questions from this section.
4. The examiner shall give a clear instruction to the candidates to attempt questions only at one place and only once. Second or subsequent attempts, unless the earlier ones have been crossed out, shall not be evaluated.
4. The duration of each paper will be three hours.

INSTRUCTIONS FOR THE CANDIDATES: Candidates are required to attempt any two questions each from sections A and B of the question paper and any ten short questions from Section C. They have to attempt questions only at one place and only once. Second or subsequent attempts, unless the earlier ones have been crossed out, shall not be evaluated.

SECTION – A

Unit 1: Introduction to Macro Economics: Meaning, Need and Scope of Macroeconomics; National Income Accounting: definitions and concepts of National Income and the methodsof measurement.

Unit 2: Determination of Income, Output and Employment: Classical and Keynesian Approaches

Unit 3: Consumption Function: Keynes' Psychological Law of Consumption, Determinantsof Propensity to Consume. Absolute and Relative Income Hypothesis.

Unit 4: Investment Function: Types, Investment demand schedule and factors affecting investment decisions. Marginal efficiency of capital. concept, operation and limitations of static and dynamic multipliers. Acceleration theory and its working.

SECTION – B

Unit 5: Business Cycles: Meaning and Phases. **Inflation**: concept, causes and effects

Unit 6: Money: Definition, Types, Functions and Role; Theories of Money: Fisher's Transaction Balance Approach and Cambridge Cash Balance Equation, Keynesian Liquidity Preference Theory.

Unit 7: Banking: Functions of Commercial Banks and Process of Credit Creation.

Unit 8: Monetary Policy: Meaning, Objectives and Tools of Monetary Policy. Fiscal Policy: Objectives and tools of Fiscal Policy.

SUGGESTED READINGS:

1. Blanchard, O. (2018). Macroeconomics, 7th ed. Pearson Education.
2. Dornbusch, R., Fischer, S., Startz, R. (2018). Macroeconomics, 12th ed. McGraw-Hill.
3. Jones, C. (2016). Macroeconomics, 4th ed. W. W. Norton.
4. Mankiw, N. (2016). Macroeconomics, 9th ed. worth Publishers.
5. Ulbrich, H. (2003), Pubic Finance in Theory and Practice. Thomson.

Aronson J.R. (1985). Public Finance. New York: McGraw-Hill International.

6. Houghton, R. W. (1973). Public finance. London: Penguin Education.

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M.A (ECONOMICS)

SEMESTER-II

MAEC24201T MACRO ECONOMICS I
COURSE COORDINATOR AND EDITOR: DR. KULDEEP WALIA

SECTION A

UNIT NO:	UNIT NAME
Unit 1A	Introduction to Macro Economics: Meaning, Need and scope of Macroeconomics
Unit 1B	National income accounting: definitions and concepts of National Incomeand the methods of measurement.
Unit 2	Determination of Income, Output and Employment: Classical and Keynesian approaches
Unit 3	Consumption Function: Keynes Psychological Law of Consumption, Determinants of Propensity to Consume. Absolute and Relative IncomeHypothesis
Unit 4	Investment Function: Types, Investment demand schedule and factors affecting investment decisions. Marginal efficiency of capital. Concept, operation and limitations of static and dynamic multiplier. Acceleration theory and its working

SECTION-B

UNIT NO:	UNIT NAME
Unit 5	Business Cycles and Inflation: Meaning, Phases and Types
unit 6	Money: Definition, Types, Functions and Role Theories of Money: Fisher's Transaction Balance Approach and Cambridge Cash Balance Equation, Keynesian Liquidity Preference Theory
Unit 7	Functions of Commercial Banks and Process of Credit Creation
Unit 8	Monetary Policy: Meaning, Objectives and tools of Monetary Policy. FiscalPolicy: Objectives and tools of Fiscal Policy

M.A (ECONOMICS)

SEMESTER –II

COURSE:MACRO ECONOMICS I

UNIT 1(A): INTRODUCTION TO MACRO ECONOMICS: MEANING, NEED AND SCOPE

1

STRUCTURE

3

1.0 Learning Objectives

After completion of this unit, learner will be able to:

- Know the concepts in macroeconomics
- Develop Analytical skills
- Understand the economic activities and aggregates studied under Micro economics.
- Discuss the scope of Macro economics
- Clarify the differences between Micro and Micro economics.

1.1 Introduction

The term macro was first introduced in economics by the economist Ragnar Frisch in 1933. It is used to describe the study of aggregates and averages covering the economy as a whole such as total income, total employment, national income, aggregate demand, general Price level, total savings, wage level etc. It 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. In short, macroeconomics is the study of national aggregates or economy-wide aggregates. Main tools of its analysis are aggregate demand and aggregate supply. Macroeconomics is the basis of all plans of economic development of underdeveloped economies. Economists are now confidently exploring the possibilities and tools for maintaining economic growth and full employment. More than anything else, macroeconomic thought has enabled us to properly organize, collect and analyze the data about national income and coordinate international economic policies.

1.2 Meaning of Macro Economics

The word _Macro'is derived from the Greek word _Makros'which means large. Macro Economics refers to economy as a whole i.e economy of large dimensions. It is that branch of economics which studies the economic activities of the economy as a whole. The focus of macroeconomics is on macro-economic variables like national income, general employment, general price level, aggregate demand, aggregate supply etc. To understand it more we will discuss somedefinition of Macro Economics given by various economists.

According to Boulding, "Macro economic theory is that part of economics which studies the overall averages and aggregates of the system."

According to Shapiro, "Macroeconomics deals with the functioning of the economy as a whole." According to Prof. Ackley —Macroeconomics deals with economic affairs —in the large1, it concerns the overall dimensions of economic life.l

John Maynard Keynes is the founding father of macroeconomics. Keynesian economics is a

macro economic theory of total spending in the economy and its effects on output, employment, and inflation. Keynes's theory was the first to sharply separate the study of economic behavior and markets based on individual incentives from the study of broad national economic aggregate variables and constructs. K.E. Boulding, –Macroeconomics deals not with individual quantities as such, but with aggregates of these quantities, not with individual income but with national income, not with individual price but with price level, not with individual output but with national output!

Keynes pioneered a new approach to macro economics. Prior to Keynes the problem of business cycles was inevitable with no specific approach to solve these problems. The classical economists focused on only micro aspects of the economy. The Great depression of 1930 left many of these economists helpless. In this backdrop Keynes came up with a new approach to look at the economy. In his book, _The General theory of Employment, Interest and Money' he talked about the possibility of high unemployment and underutilization of capacities in the market economy. He also argued that Govt. can play bigger role during economic depression by effective utilization of fiscal and monetary policies.

1.3 Need of Macro Economics

Macroeconomics has a greater role to play in our day-to-day life. The study of macroeconomics is of great importance due to the following main issues.

1. **To Understand the Economy as a Whole:** We need to study macroeconomics to analyze and study the economy as a whole. Whatever is true at micro level i.e., individual level may not be true at macro level. This is called macroeconomic paradox. According to Boulding it will be misleading to apply the rules of micro economics to macroeconomics expecting the same results. We can explain it with the help of an example. To solve the problem of unemployment at the time of great depression, A.C.Pigou, a neoclassical economist suggested all round wage cut to promote employment. From micro point of view if a firm or industry goes for wage cut, it can employ more labour. But it is not valid for the whole economy. Because cutting down wages brings down their income and it further brings down the overall demand in the economy which in turn will lead to fall in production and employment.

2. **It Studies Issues Related to Well-Being of the Society:** Macro economics deals with problems like unemployment, inflation, unequal distribution of income, imbalance inbalance of payment etc. Macro economics explains the causes of these problems and measures to solve them. It also suggests the policies to overcome these problems.

3. **Determination of National Income:** Calculation of aggregates of National Income like GNP at market price, factor income, interest on national debt etc. is measured under it.

4. **Determination and Acceleration of Economic Growth:** High economic growth is the goal of every developing economy. Economic growth helps raising the standard of living, curb poverty, reduce unequal distribution of income and generate employment. It suggests measures to achieve self-sustained growth.

5. **To Explain General Price Level and Inflation:** Fluctuations in price level and inflation remains the problem with many developing economies. Fall in value of money and persistent rise in general price level is called inflation. Macro economics helps developing measures to solve the problem of inflation with the help of monetary and fiscal policies. Macroeconomic models like Harrod-Domar and Solow explain the important factors determining economic growth.

6. **To Understand Business Cycles:** Significant developments have been made in macroeconomics to understand the causes of business cycles. Keynesian theory of effective demand along with the interaction of multiplier and accelerator gives adequate explanation of business cycles. On the basis of understanding of business cycles, macroeconomics helps us adopt proper monetary and fiscal policies to check business cycles.

7. **Formulating Macro Economic Policies:** Accurate and efficient macroeconomic policies play an important role in development of an economy. Policies related to employment generation, control of trade cycles, combating poverty, inflation etc. play a special role in developing economies.

1.4 Features of Macro Economics

Macroeconomics has following features:

1. **Short-run in Nature:** Macroeconomics is a short run study. Short run refers to that time period in which some factors are fixed and some are variable. Short run nature of

macroeconomics can be expressed as given below.

a) National output is assumed to be constant

b) Only labour is the variable factor in the short run

c) Consumption in the short run remains same more or less as habits of the people remain same in short run. Therefore, more stress is given in macroeconomics on investment as a factor to increase employment.

2. **Macroeconomics is Mainly Institutional:** Macroeconomics is more real. We can understand its real nature by examining the real factors like saving, investment, rate of interest and institutional factors influencing propensity to consume.

3. **Importance of State Intervention:** Macro economics lays great stress on the role of state intervention in balancing the economy. State plays an important role in dealing with business cycles through monetary policy, raises propensity to consumption by equitable distribution of income.

4. **Pivotal Role of Investment:** Investment has a pivotal role to play in macro economics. Effective demand depends on consumption and investment. Consumption remains samein the short period. It is change in investment which can bring increase in effective demand. Problem of unemployment and underproduction is mainly due to lack of investment.

5. **A Monetary Economics:** classical economists put stress on the medium of exchange function of money but macro economics acknowledged the role of store of value function of money. According to macroeconomics determination of income and employment is affected by demand and supply of money.

6. **Comparative Static Analysis:** Macro economics has an element of both static anddynamic analysis.

7. **A Theory of Shifting Equilibrium:** Macro economics lays great stress on underemployment and over employment equilibrium. Both the situations are morerealistic than full employment equilibrium. They explain the shifting equilibrium.

8. **Role of Expectations:** expectations basically mean expectations from profit. If the entrepreneur is optimistic, he expects more profit, he will invest more. Investment according to macro economics depends upon of Marginal efficiency of capital (MEC)and

MEC further is governed by expected profitability.

9. **Role of National Income and Consumption:** Macro economics recognizes the role of national income and consumption in solving economic problems of a country. Keynes explained how the analysis of national income helps solving the problem of unemployment. Also, through his psychological law of consumption he explained that consumption does not rise in same proportion as the increase in income. This leads to fallin effective demand and rise in unemployment.

1.5 Scope of Macro Economics

The scope of macro economics is multidimensional. It includes the problems, activities, issues and parameters related to macroeconomics. Following are the broad areas underlying the scope of macroeconomics.

1. **To Study the Working of the Economy:** it is impossible to understand the working of an economy without the study of macroeconomic variables. These macroeconomic variables are statistically measurable therefore making it easy to analyze. With the help of macro economics we can measure national income, output, employment, general price level etc. on the basis of which we understand the economic system.
2. **To Study the Theory of Employment:** High level of unemployment and underemployment is a common feature of developing economies. Macroeconomics studies problems related to unemployment. It studies factors determining employment like aggregate demand, aggregate supply, effective demand, aggregate consumption and saving etc.
3. **In Formulating Economic Policies:** Developing economies face innumerable national problems. Macro economics is extremely helpful in combating these problems by finding viable solutions. The main responsibility of the governments is to regulate and control the problems like overpopulation, unemployment, balance of payment and inflation etc.
4. **To Study the Theory of National Income:** Macro economics studies different concepts and components of National income and methods of measurement of national income and social accounting. National income data help in forecasting and policy making.
5. **To Study the Theory of Economic Growth and Development:** Boosting economic

growth remains an important goal of developing economies. Study of problems relating to economic growth, equal distribution of income and wealth, raising per capita income etc. comes under the scope of macro economics. On the basis of it, government frames and implements plan for the overall increase in national income, employment and output to increase development.

6. **In Study the Business Cycles**: business cycles refer to fluctuations in output and employment with altering periods of inflation and recession. Macroeconomics developed as an approach to solve the problem of Great depression of 1930's, it studies the causes of economic fluctuations and its remedies. Various theories of business cycles and monetary and fiscal policies to control business cycles are used under macroeconomics.

7. **To Study General Price level and Inflation:** Problem of inflation and rising prices is one of the major problems faced by both developed and developing countries. It studies and analyze the problem of inflation. It was Keynes who put forward demand pull theory of inflation. After Keynes many theories of inflation were developed depending on variouscauses leading to price rise.

8. **Balance of Payments and Exchange Rate:** Balance of payment is a systematic record of economic transactions of the residents of a country with rest of the world during one accounting year. There may be deficit or surplus in balance of payments. Both are problematic. Transactions in balance of payments are created by exchange rate. Exchange rate is the rate at which a country's currency is exchanged for foreign currencies. Instability in exchange rate and balance of payment problem has been major problem of developing countries these.

Check Your Progress- I

Q1. What do you mean by Macro Economics?

Ans. .....

Q2. Explain any two features of Macro Economics.

Ans. .....

1.6 Importance or Uses of Macro Economics

1. **It Helps to Understand the Functioning of a Complicated Modern Economic System:** It describes how the economy as a whole function and how the level of national income and employment is determined on the basis of aggregate demand and aggregate supply.
2. **Issues of Vital Importance:** Macroeconomics deals with the issues of vital importance, such as unemployment, inflation, instability of foreign exchange rates etc. which directly affect the well-being of the people.
3. **Helps in Measuring and Achieving Economic Growth:** It helps to achieve the goal of economic growth, higher level of GDP and higher level of employment. It analyses the determinants of economic growth of a country. Also explains measures to attain high economic growth and sustain it.
4. **Macro Economics**: It helps to bring stability in price level and analyses fluctuations in business activities. It suggests policy measures to control Inflation and deflation.
5. **Explains Balance of Payment:** it determines the factors affecting balance of payment, identifies causes of deficit in balance of payment and suggests remedial measures.
6. **For International Comparisons:** Macroeconomics helps in making international comparisons. It helps in making international comparisons of national income, per capita income, consumption and savings etc.
7. **To Understand Macroeconomic Paradoxes:** Macroeconomics explains the concepts that hold good for individuals but are not valid when applied to the society.
8. **Solve Economic Problems:** It helps to solve economic problems like poverty, unemployment, business cycles, etc., whose solution is possible at macro level only, i.e., at the level of whole economy.
9. **To Formulate Economic Policies:** With detailed knowledge of functioning of an economy at macro level, it has been possible to formulate correct economic policies and also coordinate international economic policies.
10. **Wider Scope than Micro Economics:** Macroeconomic theory has saved us from the dangers of application of microeconomic theory to the problems of the economy at large.

11. **Measurement of Material Welfare:** macroeconomics helps in measuring aggregates like aggregate income, consumption, saving and investment. Hence helps in assessing material welfare.

12. **Decision Making:** Macroeconomics helps in policy making as it studies the economy as a whole. Hence on the basis of those individuals and businessmen are able to take right decisions timely.

13. **Economic Planning:** On the basis of macroeconomic aggregates, countries formulate comprehensive economic plans to achieve economic goals.

1.7 Limitations of Macro Economics

Main limitations are given as follows.

1. **Contribution of Individual Units Ignored:** macroeconomics throws light on the function of aggregates only. It ignores the role of economic activities and the decisions taken by individual units.

2. **Excessive Generalization:** Generalization of individual observation may lead to in accurate results about the system as a whole.

3. **Heterogeneous Units:** We study heterogeneous units under macroeconomics. Heterogeneous units are the units which are different from each other. It is not possible to measure these units in uniform pattern. e.g. consumers are assumed to differ from each other. Under macroeconomics heterogeneous units are measured in terms of money which may not be the true measure of their value in use.

4. **Depends on Individual Units:** Whatever the fact correct for individual may not necessarily be correct for the whole economy. As a person starts saving in the form of money, but if everybody starts saving in terms of money then the aggregate demand will fall, which cause reduction in national income.

5. **Limited Application:** Macroeconomics has limited applications as it deals with aggregatesonly, that is not practical in real life.

1.8 Assumptions Of Macro Economics

Keynes propounded some assumptions of macroeconomics. These are given below.

1. **Short Period:** In short period it is not possible to change all the factors like technique of production, taste of the consumer, habits and fashion. Therefore, macro economics assumed all these factors to be constant. According to Lord Keynes the problem of unemployment in developed countries was a short-term problem because in long run period we are all dead.
2. **Perfect Competition:** In perfect competition situation of the market, no interference of other firms to determine the price of the product is to be assumed. Here, it assumes perfect competition into the market.
3. **No Government Interference:** It ignores the intervention of the government on aggregate demand. As per macro economics, aggregate demand is a function of consumption and investment only.
4. **Closed Economy:** A closed economy is that economy where there is no trade with any of the other country. There is no influence of trade on employment and level of income.
5. **Role of Money as a Store of Value:** It assumes that money is not used for medium of exchange only rather money used for store of value also. Therefor it is not necessary that the person spend all of their monetary income as he gets.
6. **Underemployment Equilibrium:** Macro economics assumes that the position of equilibrium can be achieved in full employment as well in the underemployment situation. Equilibrium is a situation where aggregate supply is equal to aggregate demand.
7. **No Time lags**: It assumes that there are no time lags in the variables. For example, the expenditure of person A on the day Friday depends upon the income he earns on Friday only. Therefore, present consumption depends on the present income only.
8. **Full Utilization of Resources**: It assumes that there is full utilization of resources that are available in the economy
9. **Diminishing Marginal Productivity**: It means that as more and more labour engaged for the process of production, the marginal productivity gained from the additional laborer goes diminishing. Macro economics assumes diminishing marginal productivity for additional laborer.

10. **Saving and Investment Function:** in Economics, saving is a function of income of the consumer. More the income of the person leads to more saving of the person.
11. **Labour is the Only Variable Factor of Production:** In short run period, it assumed that all other factors of productions like land and capital etc. are constant in nature and only the quantity of labour engaged on the process of production can be variable (i.e. increased or decreased the quantity of labour engaged as per requirement).
12. **Interest is a Monetary Phenomenon:** It assumes that interest is a monetary phenomenon only. Interest function is based on the demand and supply of money, here demand for money indicates to liquidity preference, which used for the purpose of transaction, precautionary and speculative motives.

1.9 Relation Between Microeconomics and Macroeconomics

Micro economics and macro economics are closely related to each other. Their relation is clear from the following analysis.

1.9.1 Inter-Relation Between Micro Economics and Macro Economics

1. **Study of Microeconomics is the Basis for The Study of Macroeconomics:** Macroeconomics is the study of aggregates and these aggregate results obtained from collection of individuals. To understand the functioning of whole economy it is essential to understand the behavior of individual units. e.g collection of firms makes an industry and several industries form an economy.
2. **Study of Macroeconomics is the Necessary for Microeconomic Analysis:** To study a problem at micro/ individual level macroeconomic analysis becomes indispensable. The general trend seen on macro level influences the micro level results to some extent. e.g. the sale of product of a firm not only depends on its price but also on the total supply of money in the economy.

1.9.2 Differences Between Microeconomics and Macro Economics

1) **Different Assumptions:** Micro economics is based on the assumption of full employment, fixed output and fixed expenditure. Whereas macro economics is based on the assumption of optimum allocation of resources in the country.

2) **Different Objectives:** Both these branches of economics have different objectives. Micro economics studies the principles, problems and policies related to optimum allocation of resources. Whereas macro economics studies the principles, problems and policies related to full employment and growth.

3) **Different Methods of Study:** We study partial equilibrium analysis under micro economics. We assume other things being equal under the principles of micro economics. Under the principles of macro economics we study quasi general equilibrium analysis. Here economic factors are divided into important aggregates like aggregate demand, aggregate supply, aggregate income and aggregate consumption etc.

4) **Different Importance to Price and Income:** The central determinant of the problem of micro economics is price and that of macro economics is income. Demand, supply, consumption etc. are taken on the basis of income. Under micro economics, consumers, producers etc. take decisions on the basis of price whereas under macro economics decisions regarding all aggregates like aggregate consumption, aggregate investment and aggregate saving etc. are taken on the basis of income.

5) **Difference Relating to Change:** Sometimes there are changes on individual basis i.e at micro level but these changes are not there at macro level and vice versa. e.g. if there is increase in demand in a particular sector, there may not be any change in the demand asa whole due to fall in demand in some other sector.

6) **Paradoxes:** In many activities advantages at individual level may prove detrimental tothe society or economy as a whole. Prof. Boulding has called such paradoxes as macroeconomic paradoxes. e.g., more savings of an individual may benefit the person who saves but if the whole society starts saving more, aggregate demand will short of aggregate supply leading to fall in national income.

7) **Differences in Degree of Aggregation:** Micro economics studies small units like a firm, group of firms etc. It studies aggregates like general output, total employment and national income etc.

Check Your Progress- II

Q1. Give any two assumptions of Macro Economics.

Ans. .....

Q2. Explain three limitations of Macro Economics.

Ans. .....

1.10Summary

Macro Economics is the use of economic resources at the aggregate level i.e. national level. Macro economics studies the problems and issues related to the economy as a whole. For example, aggregate consumption, aggregate supply, aggregate savings, total employment, general price level and national income etc. macro economics not study the individual economic units as studies by micro economics, rather it studies the issues related to the collective society. Moreover, macro economics enabled the economist to organize, collect and analyze the data related to income and international economic policies. In other words, macro it deals with national income not the individual income, individual price level, individual utility etc. it also considers the sub aggregates of large aggregates related to the economy as a whole. However, macro economics is the study of aggregates, and these aggregate results obtained from the collection of data or behaviour of individuals. So, in order to understand the functioning of whole economy it is essential to understand the behaviour of an individual unit.

1.11Questions For Practice

A. Short Answer Type Questions

Q1. Define macroeconomics.

Q2. What are Macroeconomic paradoxes?

Q3. What are the main assumptions of macroeconomics?Q4. Give five salient features of macroeconomics

Q5. Give some differences of microeconomics and macroeconomics.

Q6. Explain some major limitations or criticisms of macro economics.

B. Long Answer Type Questions

Q1. What do you mean by Macro economics? Explain its scope.

Q2. Bring out the relationship that exists between micro and macro economics. Also

distinguish between micro and macro economics.

Q3. Discuss the importance of macro economics. Also give its limitations.

Q4. Define Macro Economics. Also discuss its salient features.

1.12 Suggested Readings

- Branson, W.H. (1979). *Macroeconomic Theory and Policy*. Harper and Row Publishers New York.
- Dwivedi, D.N. (2010). *Macroeconomic Theory and Policy*. Tata MCGraw Hill Education Private Limited.
- Mankiw, N.G. (2003) *Macroeconomics*. Worth publications.
- Krugman, P. & Wells, R.(2015). *Macroeconomics*. Worth Publishers.
- Sheehan, B. (2009).*Understanding Keynes' General Theory*, Palgrave Macmillan.

M.A(ECONOMICS)

SEMESTER –II

COURSE: MACRO ECONOMICI

UNIT 1(B): NATIONAL INCOME ACCOUNTING: CONCEPTS AND METHODS OFMEASUREMENT

STRUCTURE

1.0 Learning Objectives

After completion of this, learner will be able to:

- Know the concepts of National Income
- Understand the related aggregates of National Income
- Know about methods of measuring National income
- Define the difficulties faced by underdeveloped countries in measuring NationalIncome
- Understand the difference between various aggregates of National income.

1.1 Introduction

In an economy, the people are emerged in productive activities, whereby they earn income and spend their income on goods and services to satisfy their unlimited wants. The growth and progress of an economy can be estimated from how much they are able to produce and spend, i.e. the total output, income and expenditure during the specified period of time. These _aggregates' of the economy are considered as different perspective to its national income national income is the income of a nation and the assessment of money value of all the goods and services provided by a nation during the specified period of time. Generally, it is taken by aggregate of income earned by all the individuals of a nation. National income helps the nation to determine the growth of that nation with respect to its basic requirement. National income can be defined as the total net value of all goods as well as services produced within a nation over the period of time.

In brief, national income is an important concept of macroeconomics. There are various aggregates or variants of national income. Each aggregate is composed of a

specific meaning and measurement.

1.2 Meaning and Definition of National Income

The term national income can be interchangeably used with national output, national dividend and national expenditure. All the three terms are synonymous to the term national income as they provide the true picture of the condition of particular economy in terms of growth and development. Many economists have defined national income in different terms. It has two types of definitions as explained below:

1. Traditional Definition

This is provided by the classical economists like Marshall, Pigou and Fisher. All three had used different concepts to define national income and led to different conclusions. These concepts are explained as below:

A. Marshallian Definition

-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. This is the true net annual income or revenue of the country or national dividend.I Thus, the Marshallian definition defines the importance of the factors of production like labour and capital which uses natural resources of the country to produce goods and services which contribute to the value of the national income of that country. But this definition has some flaws such as it is not possible to correctly estimate the total goods and services produced in an economy in the present world as there are so many varieties available. Also, there is possibility of double counting in the economy.

B. Pigouvian Definition:

-National income is that part of objective income of the community, including income derived from abroad which can be measured in terms of money.I Thus, Pigouvian definition is better that the Marshall's definition as it corrected the problem of double counting by included only the money value of the goods and services in the accounting. But this definition is not fully correct as it also has some defects inhabited in it. Some of them are that this includes only the money value of the goods and

services which can be done in developed countries only. In under developed countries barter system still prevails in some sectors and also proper accounts are not maintained.

C. Fisher's Definition:

This definition included consumption as the criterion to calculate the national income of a particular economy. This definition is better than the other definitions on the part that it provides the estimation of the standard of living of the economy on the basis of the consumptionpattern. But this definition is not without defects as it includes the value of the goods or services used in the particular year on the basis of their estimated shelf life. But, what will happen if the estimation may increase or decrease. This will lead to wrong conclusions and the national income accounting may go wrong. Thus, this definition is not completely perfect in defining national income.

2. Modern Definition

This definition includes the current time definition of the national income which is being practically used in all the economies to estimate. Some of the definitions are given below:

A. Simon Kuznet's Definition:

-National income is defined as the net output of commodities and services flowing during the year from the country's productive system in the hands of ultimate consumers.l

This definition is the most acceptable definition as it includes the estimation of the value of goods and services which directly or indirectly reach the end users i.e. consumers in the monetary terms.

B. United Nations Definition:

-National income has been defined as national product, as addition to the shares of different factors and as net national expenditure in a country in a year's timel

This definition is also mostly acceptable as it involves the concept of national income as national product and national expenditure which are always equal while calculating and mostly used interchangeably.

Check Your Progress-I

Q1. Define Pigouvian definition of national income.

Ans. .....

.....

Q2. Write Simon Kuznet's definition of national income.

Ans. .....

.....

1.3 Basic Aggregates of National Income

Generally known, an economy produces various goods and services during a period of one year. These goods and services cannot be added together in terms of quantity. Thus, these are represented in terms of money. Basic aggregates of National Income are given below.

1.3.1 Gross Domestic Product at Market Price (GDPMP) and Factor cost (GDPFC)

Gross Domestic Product at Market Price (GDPMP):

It implies the gross market value of all final goods and services produced within a nation during one accounting year. It is the income earned by the nationals of the country within the domestic country and excludes the income earned from the foreign country. Dernburg defines GDP at market price as -the market value of the output of final goods and services produced in the domestic territory of a country during an accounting year.l

GDPMP = Value of output in domestic territory-value of intermediate consumption

In the definition of GDP, some terms which are explained as:

- Gross in GDPMP refers to include the depreciation.
- Domestic in GDPMP implies that all goods and services produced within a nation.
- Product in GDPMP underlines that only final goods and services are included.
- Market Price in GDPMP underlines the amount of indirect taxes paid and excludes theamount of subsidy received.
- Final goods and services in the definition involve all the finished goods which are beingproduced in the country.

Gross Domestic Product at Factor Cost (GDPFC):

It includes the gross money value of all the final goods and services produced within the boundary during a one period. It involves the income earned by all the factors of production like labour, capital, land and entrepreneur in a given year within the domestic territory of the country.

GDPFC = GDPMP - Net Indirect Taxes Or

GDPFC = GDPMP - Indirect Taxes + subsidies

This involves the factor income being earned by the factors of production in the economy which the producing sector provides to the household sector. The basic difference among GDP at market price and factor cost is that GDPFC includes all the elements of GDP at market price except net direct taxes.

1.3.2 Net Domestic Product at Market Price (NDPMP) and at Factor Cost (NDPFC)

Net Domestic Product at Market Price (NDPMP):

According to Dernburg, -Net Domestic product at market price is the market value of net output of final goods and services produced in the domestic territory of a country by its normal residents and no-residents during an accounting yearl. The term net refers to the valueof goods and serviced deducted after the wear and tear and some of the expenses made by the business house.

NDPMP= GDPMP– Depreciation

Net Domestic Product at Factor Cost (NDPFC):

It refers to net money value of all the goods and services produced within the country generally during one year. This also involves the factor prices provided by the business sector to the household sector but exclude the fixed capital consumption allowance (depreciation).

NDPFC = GDPMP - Net Indirect Taxes

Depreciation orNDPFC = GDPFC Depreciation

or

NDPFC= NDPMP– Net Indirect Taxes

NDPFC is also known as Domestic Income or Domestic Factor Income. It should be noted here that the entire component either domestic or net, mainly attributed output and services produced within the nation not outside the nation. Now we will consider the national level concepts.

1.3.3 Gross National Product at Market Price (GNPMP) and Factor Cost (GNPFC)

Gross National Product at Market Price (GNPMP):

According to Demburg, -The GNP at market price is defined as the market value of all the final goods and services produced in an economy during an accounting year including net factor income from abroadl. Therefore, it includes all the income earned by the nationals ofthe country both within the domestic boundary and outside it. The income earned from the foreign sector is known as the net factor income from abroad.

GNPMP = GDPMP + Net Factor Income from abroad (NFIA)

Gross National Product at Factor Cost (GNPFC):

According to Peterson, -Gross national product at factor cost is the sum of factor cost of the gross product attribute to the factors of production supplied by the normal residents of the country during a year and net factor income from abroadl.

GNPFC = GNPMP - Net Indirect Taxes

1.3.4 Net National Product at Market Price (NNPMP) and Factor Cost (NNPFC)

Net National Product at Market Price (NNPMP):

It considers the net money value of all the final goods and services produced by the normalresidents of a nation during one year. It is also known as National income at market price.

NNPMP = GNPMP – Depreciation

Net National Product at Factor Cost (NNPFC):

It refers to net money value of all the final goods and services produced by the normal residents of a country daring a period of one year. It is known as the national income. It refers to the cost that the individuals of the economy face in terms of resources of the economy to produce the net output.

NNPFC = GNPMP - Net Indirect Taxes – Depreciation

It should be noted here that production of only normal residents of the country is to be included even if they are outside the nation.

Check Your Progress-II

Q1. Define Gross Domestic Product at Factor Cost (GDPFC)

Ans. .....

Q2. Write the formula of Gross National Product at Market Price (GNPMP).

Ans. .....

1.3.5 Net Value Added at Market Price (NVAMP) and Factor Cost (NVAFC)

Net Value Added at Market Price (NVAMP):

The term that is used to denote the net contribution made by a firm is called value added. It is the difference between the value of output and input or raw material or intermediate product at each stage of production. The net value added at market price refers to the net domestic product at market price which is the difference of gross value added and the depreciation.

NVAMP = GVAMP– Depreciation

Net Value Added at Factor Cost (NVAFC):

It gives the net value added by all the productive enterprises of an industry or sector at factor cost. By adding up the net factor income from abroad to it there will be the total national income of the economy.

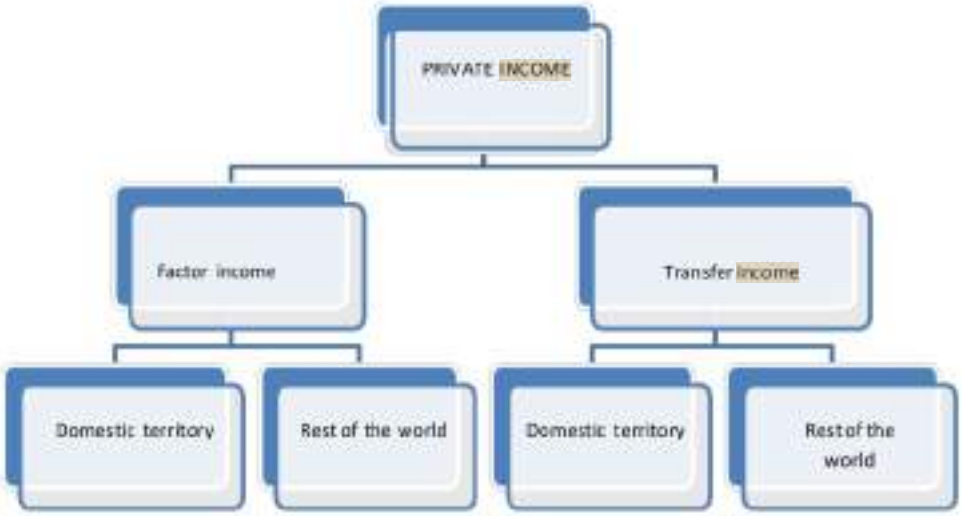
1.3.6 Private Income and Personal Income

It involves the income earned by the private sector of the economy from both the domestic and foreign market. This includes following two parts:

A. Factor income or the earned income

B. Transfer income or unearned income

Private Income = Income from domestic product of private sector + Net factor income from abroad + interest on National Debt + net transfer from government + transfer payments from the rest of the world



Personal income involves the income earned by the household sector of the economy from both the domestic and the foreign market from all the sources. It also includes factor income and transfer income.

Personal Income = Private income – corporate tax – saving of private enterprises (retained earnings of foreign companies)

1.3.7 Personal and National Disposable Income

This includes the income that is available to the household sector for consumption afterthe payment of taxes, fees and other miscellaneous receipts of the government.

Personal Disposable Income = Personal income – personal/direct taxes –

miscellaneousreceipts of the government

National disposable income includes the money income that is available to the whole economyfor consumption purpose. This involves two terms, i.e.

A. Net National Disposable Income: It is the total income that is available to the wholeeconomy for consumption or saving. It is written as NNDY.

NNDY = National consumption expenditure + National Savings or

NNDY = National Income + Net indirect taxes + Net current transfers fromthe rest of the world

B. Gross National Disposable Income: When depreciation is added to the net nationaldisposable income, the result will be the gross national disposable income.

GNDY = Net National Disposable Income + Depreciation

1.3.8 Nominal GDP and Real GDP

This refers to the market value of all the final goods and services produced in the domestic territory of the country during an accounting year calculated on the basis of current year prices. It is also known as monetary GDP or GDP at current prices.

Real GDP refers to the market value of all the goods and services produced in an accounting year in the domestic territory of the country calculated on the basis of the base year prices. It is also known as GDP at constant prices.

1.3.9 GDP Deflator

It is the ratio of the nominal GDP and real GDP which shows the change in the valueof the GDP due to the change in the prices of the economy.

$$\text{GDP Deflator} = \frac{\text{Nominal GDP}}{\text{Real GDP}} \times 100$$

1.4 Basic Differences Between the Domestic Income and National Income at Factor Cost

Basis	Domestic Income	National Income

Nature of Concept	It reflects the value of output andservices produced within nation.	It is a national level concept represented the value of goodsand services produced in the entire world.
Category of Producers	It is related to those producers that are associated to the goods and services within nation.	It relates to all producers who are normal residents of the nation.
Net Factor Income Abroad (NFIA)	It excludes the NFIA	It includes the NFIA

1.5 Basic Differences Between the GDP and National Income at Market Price

Basis	GDP at Market Price (GDPMP)	National Income NNPFC
Nature of concept	It reflects the value of final goodsand services producedwithin nation.	It is associated to national concept involves the value of final goods and services produces in the entire world.
Category 0 fproducers	All the producers within nation.	All the producers who are normalresidents of the nation.
Net Indirec tTaxes	It is a market price i.e, it includednet indirect taxes.	It is a factor cost, i.e, it excludesnet indirect taxes.
Depreciation	Inclusive of depreciation	Exclusive of depreciation

1.6 Basic Difference between National Income and Private Income

Basis of Difference	National Income	Private Income
Public and private sector	It includes the income earned by both the public and private sector	It includes the income earned by only private sector
Factor and transfer income	It involves only the factor income	It involves the income earned in terms of both the factor and transfer income
Public sector income	It includes the public sectorincome	It does not include thepublicsector income

Interest on National Debt	It does not include interest on national debt while its calculation	It involves interest on debt incalculation

Check Your Progress-III

Q1. What are the basic differences between the domestic product and national income at marketprice?

Ans. .....

Q2. Define Private Income.

Ans. .....

1.7 Methods to Measure National Income

National income is the most important measure to compute the performance of the economy. The Calculation of the national income is very complicated and it reveals that because of the ways of the flow of resources the national income can be computed in three ways. These are termed as:

A. Product method
B. Income method
C. Expenditure method

These can be explained in detail as follows:

1.7.1 Product Method

This method measures the value of national income in terms of the products being produced in the economy in an accounting year. This method is also known as value added method or output method. Value added is defined as the difference between the final goods as they are being produced and the cost of goods that entered that stage.

I) Steps to Measure National Income Under Value Added Method

1. Identification of the Productive Units: firstly, to calculate the national income there is need to identify the producing sectors of the economy. There are mainly three

sectors of the economy which are being contributing to the production of the economy. These are:

A. Primary sector: It involves the agricultural sector of the economy. Along with agriculture there are also allied activities like animal husbandry, horticulture, bee-keeping, etc. are being involved. Thus, the goods and services produced by them are included in the calculation of national income.


product method
or value added method
Gross value added at primary, secondary and tertiary sector
Gross Domestic Product at Market Price
less Depreciation
Net Domestic Product at Market Price
Less Net Indirect Taxes
Net Domestic Product at Factor Cost
add Net Factor Income from Abroad
National Income (NNP$_{FC}$)
Income method
Compensation of employees, operating surplus, mixed income
Net Domestic Income
add Net Factor Income from Abroad
National Income (NNP$_{FC}$)
Expenditure method
private final consumption expenditure, govt. final consumption expenditure, gross domestic capital formation, net exports
Gross Domestic Product at Market price
less Depreciation
Net Domestic Product at Market Price
less Net Indirect Taxes
Net Domestic Product at Factor Cost
National Income (NNP$_{FC}$)

B. Secondary sector: It involves the goods and services produced by the industrial sectorof the economy. Along with industrial sector it also includes the construction, manufacturing etc. Here the products are being produced with the help of men, machine, material etc.

C. Tertiary sector: It involves the services provided to the other sectors of the economy. It includes transportation, banking, real estate, information technology, etc.

2. Calculation of the Value Added: The value added of the economy can be calculated by added the value of output being produced by all the sectors and the subtracting the intermediate consumption from it. It is also known as GDP at market price.

Value Added = Value of output (Primary + Secondary + Tertiary) – Intermediate goods

3. Calculation of the national income: For calculation of the national income, the depreciation and net indirect taxes are to be subtracted from the value added and then net factor incomefrom abroad is added to this.

National Income (NDPFC) = GDPMP – Depreciation – Net Indirect Taxes + Net Factor Income from Abroad

II) Precautions of Product Method

A. Double counting should be avoided.

B. Production for self-consumption should be included.

C. Sale of second-hand goods is not to be included.

D. Production from illegal activities should not to be included.

E. Value of services rendered by housewives/family members should not be included.

1.7.2 Income Method

Under this method, the factor incomes being earned by all the factors of production are calculated and added to derive at national income. This method is also known as factor income method or income consumption method.

I) Steps Involved in Calculation of National Income:

1. Compensation of Employees: it involves the income being paid by the employers to

the workers or employees in the business house. It involves following points:

A. Wages and salary in cash: it includes the money income being paid by the employers to the workers for the work being done by them in the production of the commodity.

B. Wages and salary in kind: it includes non-monetary benefits provided to the workers to stay in the business house, such as free cab service, free houses, educational facilities to their child, etc.

C. Employer's contribution to social security scheme: it includes the contribution made by the employer for the benefit of the workers.

2. Operating Surplus: it involves the income earned by the factors other than labour for their contribution in the production of the commodity. It involves following points:

A. Rent and Royalty: rent is provided on the land privately used by the entrepreneur forthe business purpose. It is the payment made for the use of land. Royalty is the amount paid for the leasing of the sub-soil land to the government officials.

B. Interest: it is the payment made by the government on public debt or by one firm to the other on the funds provided for the productive purposes.

C. Profit: it is the reward provided to the entrepreneur for incurring risk in the production of goods and services. It is used by the entrepreneur for mainly three purposes, i.e., to pay corporate tax, to pay dividend and to retain earnings for business purposes.

3. Mixed Income: it involves the imputed value of the self-employed work being done by the normal resident of the economy. It includes the value of rent from owned land, wages of owned work, etc. e.g., Farmers, retail traders, etc. it involves a service of doctor running his clinic atthe residence.

4. Net Factor Income from Abroad: the net factor income from abroad involves the income earned by factors of production by working outside of the domestic territory. It involves the net value of the payment made to the foreign world and receipts from them to the domestic economy.

NFIA = Net income earned from abroad – Net income paid to abroad

Now, the National income can be calculated by adding all the four parts of the income method,

i.e. NDP fc = Compensation of employees + Operating Surplus + Mixed income + Net factor income from abroad.

II) Precautions Regarding Income Method:

1) Transfer payments like old age pension, unemployment allowance are not included in estimating national income.

2) Imputed rent of self-occupied houses and imputed value of production of goods for self-consumption are to be included in calculating national income. But value of self- consumed services is not to be included.

3) Illegal money through smuggling, theft etc. is not included in national income.

4) Windfall gains are not included in this method.

5) Death duties, gift tax, tax on lotteries etc. are paid from past saving or wealth are not a part of current income. So, they should not be treated as a part of national income of that year.

6) The receipts from sale of second-hand goods should not be treated as a part of national income because second-hand goods do not create new flows of goods and services in the current year.

7) Sales proceeds of second-hand goods are not included in national income.

8) Indirect taxes are not included while estimating national income at factor cost.

1.7.3 Expenditure Method

It is a method of computing GDP that measures the amount spent on all final goods during a given period. Expenditure method is the method which measures final expenditure on gross domestic product at market price during an accounting year. Final expenditure refers to expenditure on final goods and services in an accounting year. The main problem is to find out whether the expenditure is on final good or intermediate good. Only final expenditure is added in this method. If goods and services are purchased for final consumption or capital formation, the expenditure on them is final expenditure.

I) Steps Involved in the Calculation of The National Income:

1. Consumption Expenditure: It involves the expenditure being incurred on the purchase of goods and services. There are many types of goods being available in the economy. Some of these types are as follows:

A. Durable/Non-perishable goods: refrigerators, air conditioner, cooler, furniture, etc.
B. Semi-durable goods: Clothes, food items like sugar, salt, etc.
C. Non-durable/Perishable good: vegetables, fruits, etc.

The expenditure is being done by both the government officials (government final consumption expenditure) and private individuals (private final consumption expenditure) on the purchaseof these goods.

2. Investment Expenditure: it involves the expenditure being done by the individuals or the government in the use of funds for further capital formation.

A. Gross Private domestic investment: This is also known as business investment as it is done by the business houses for their capital formation. This investment is done mainly in the purchase of plant/machinery, furniture, land etc. for business purposes.
B. Government investment: it is also known as development expenditure as the investment done by the government is mainly for the purpose of the development of the economy. This involves the expenditure being incurred on the construction of roads, dams, bridges, etc.

3. Net Exports: Net exports the difference between exports and imports of the country during one year.

Net Exports = Exports – Imports

Exports refer to goods and non-factor services from one country to rest of the world, and Imports refer to purchase of goods and non-factor services of one country to rest of the world.

Now, the calculation of national income can be done by adding all these items which lead to the calculation of GDPMP and then subtracting depreciation and net indirect taxes from it with adding net factor income from abroad.

$$GDP_{MP} = C + I + G + (X - M)$$

National Income = GDPMP– Depreciation – Net indirect taxes + Net factor income from abroad

II) Precautions Regarding Income Method

1) Since the production value of final goods is included, the expenses for any intermediate goods are not considered. Otherwise, a single expense will be counted twice, causingthe national income to inflate inaccurately.
2) The transfer payments do not add value to the economy of a nation; hence, they should not be included.
3) The purchase of second-hand goods is not included since they do not affect the total value of produced goods and services.
4) Buying and selling of bonds and shares signifies a change in ownership and does not affect the value of goods and services. These transactions are not included in national income. However, the brokerage paid for the transfer of shares is considered while using the expenditure method.
5) Services provided by the government and non-profit organizations and the expenses incurred for the production of any good that is used for self-consumption are considered in the national income calculation.

Identity among National Product, National Income and National Expenditure

In the economy, there are final goods and services which are being produced in the accounting year and also the income earned by the factors of production which are being producing these goods and the expenditure incurred on them are identical. Value of final goods is equal to the factor cost which is identical to the expenditure on the final product. Thus, it can be concluded that the national income calculated with the help of product method, income method and expenditure method are all equal.

National Product = National income = National Expenditure

1.8 Difference Between Final Goods and Intermediate Goods

Basis of Difference	Final Goods	Intermediate Goods

Definition	Those goods which are produced to bedirectly consumed by the consumer are known as final goods	Those goods which are used for producing other goods are known as intermediate goods
Nature	These are finished goods	These can be semi-finished or non-finished goods
Processing needed	There is no need of further processingas they are ready to be consumed.	There is need of further processing asthey are refined to make goods for final consumption
Impact on National Income	These goods form the part of nationalincome	These goods do not form part ofnational income
Demand for goods	These goods have inherent or directdemand	These goods do not have natural demand as they are based on the preferences of the users and havederived demand

1.9 Difficulties Faced by Underdeveloped Countries in Measuring National Income:

1) **Value of Goods Not Included:** In underdeveloped countries, when the transactions are mainly in the form of barter system, they are not included in national income calculation. Also, many of the goods are for self-consumption and are not properly measured in monetary terms. It creates problem in calculation of national income.
2) **Illiteracy:** underdeveloped countries have massive illiteracy and backwardness. Mostof the entrepreneurs are illiterate in the economy and does not maintain proper accounts for the goods and services which mislead the calculation of national income.
3) **Little Specialization:** There is no or very little specialization in the underdeveloped economies due to which products are not of good quality and do not have proper industrial base.

4) **Statistical Availability:** There is no proper availability of the reliable statistical data in underdeveloped countries.

5) **Method to Calculate:** Because of lack of proper and reliable availability of the data, the method to calculate national income is not proper. There is combined method being used to calculate national income in many countries which lead to misleading results.

6) **Economic Stage:** The most important problem in the calculation of national income here is at what economic stage is the income being included. If the aim of the computation is the progress of the economy, then the production is to be included. But, if the aim is to compute the welfare of the economy, then the consumption stage is moreeffective.

Check Your Progress- IV

Q1. Mention the names of methods to measure national income.

Ans. .....

Q2. What do you mean by consumer expenditure?

Ans. .....

1.10 Summary

In general, national income means the value of goods and services produced by a country during the financial period. It is concerned with the economic activities of a country during a particular year. National income useful to estimate the growth of the nation with respect to the basic requirement. According to –National income is defined as the net output of commodities and services flowing during the year from the country's productive system in the hands of ultimate consumers.I There are various concepts or aggregates available related to national income. These are gross domestic product, gross national product, net national product, net domestic product (are at market price and factor cost). Personal and disposable income and private income.

There are three methods available to measure the national income. These are income method, expenditure method and value-added method. Income method is based on income generated by the production factors (i.e., land and labour). However, expenditure method is based on investment and consumption of a country. Value-added

method consists of value added of product during the period of manufacturing process.

1.11 Questions for Practice

A. Short Answer Type Questions

Q1. Define gross domestic product at market price

Q2. What is meant by gross national product?

Q3. Define net domestic product at market price

Q4. Define net domestic product at factor cost

Q5. What do you mean by Private income?

Q6. What do you mean by Private income?

Q7. What do you mean by Personal income?

Q8. What do you mean by Disposable income?

Q9. What is consumption of fixed capital or depreciation?

Q10. Explain the difference between personal income and personal disposable income.

B. Long Answer Type Questions

Q1. Explain the concept of domestic product. Distinguish between gross domestic product and gross national product

Q2. Explain the various aggregates related to national income. Explain the inter-relationship between them with the help of equations and chart.

Q3. Explain the concepts of

a) National disposable income and national income

b) Factor income and transfer income

c) Private income and personal income

Q4. Distinguish between the following concepts of national income

a) Gross domestic product and gross national product

b) Net national product at market price and net national product at factor cost

Q5. Define national income. Explain the different methods of measuring national Income.

Q6. Explain income method of measuring the national income

Q7. Explain expenditure method of measuring the national income

Q8. Explain the precautions to be taken while measuring the national income by

Expenditure method.

Q9. Explain the precautions to be taken while measuring the national income by incomemethod.

1.12 Suggested Readings

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M.A (ECONOMICS)

SEMESTER –II

COURSE: MACRO ECONOMICSI

UNIT 2: DETERMINATION OF INCOME, OUTPUT AND EMPLOYMENT (CLASSICAL AND KEYNESIAN APPROACHES)

37

STRUCTURE

2.0 Learning Objectives

After studying this unit, learner will be able to:

- Know the basic features of Classical and Keynesian school of thought.
- Understand the Determination of the income, output and employment.
- Differentiate between Classical and Keynesian ideas.

2.1 Introduction

The task of economists is to build theories and apply them to understand the working of economy. In Macroeconomics, there have been two primary groups known as Classical Economists and Keynesians. The term –Classical ApproachI was used by John Maynard Keynes for the ideas of economists like Adam Smith, David Ricardo, Thomas Malthus and J.S. Mill. Although classical economists had not propounded any coherent theory of macroeconomics butit should not be taken as classical economists had not given any views on output or employment determination. Classical economists had made certain assumptions about the working of economy and their ideas were dominating the macroeconomic theory till early 1900s. In 1936, John Maynard Keynes published his book *The General Theory of Employment, Interest and Money*. He challenged the view of classical economists because thoughts of classical economists were failed to explain the reasons behind unemployment during Great Depression of 1930. The basic difference between classical and Keynesian perspectives is whether market economies, if left to themselves, adjust to full employment or not.

In this unit, we will discuss classical views, criticism of classical views by Keynesians and Keynesian views regarding determination of income, output and employment.

2.2 Basic Concepts

A. **Aggregate Demand (AD):** Aggregate demand is the quantity demanded by households, businesses, the government and rest of the world at the aggregate price level.

B. **Aggregate Supply (AS):** Aggregate Supply is the quantity of aggregate output supplied in the economy at aggregate price level.

C. **Aggregate Expenditure:** Aggregate expenditure is the sum of all expenditures undertaken by the households, business firms and government during a specific time

period.

D. **Effective Demand:** Effective demand is the willingness and ability of consumers to purchase goods at different prices.

E. **Real Wages:** Real wage is nominal wage divided by price level.

2.3 Determination of Income, Output and Employment: Classical Approach

Let's start with the classical school of thought. The classical school of thought believed that wages and prices adjust quickly to changes in supply and demand. The economy is self-regulating i.e. if the economy is not at full employment then it can move itself to this position. Let us begin with a brief review of the classical postulates.

2.3.1 Assumptions

The classical system is based on certain assumptions. Let's now discuss about what these assumptions are. These are as follows:

Laissez-faire: The classical assumed that economy works on the principles of laissez- faire. It means there is no government intervention (except to ensure free competition) and there is perfect competition in the market.

Full Employment: The classical economists assumed that there is full employment in theeconomy. If economy is not at full employment there, then there is a tendency towards full employment if government does not intervene. However, there is possibility of frictional and voluntary unemployment in the state of full employment.

Say's Law: A firm hires factors of production (land, labor, capital, and entrepreneur) to produce goods and services and the production of goods and services creates income for owners of these inputs, which in turn creates a demand for goods. Thus supply of goods and services itself generates sufficient income to generate a demand equal to the supply of goods. This is what is known as Say's Law, stated by French economist J.B. Says as -supply creates its own demand.I This law is regarded as the central part of _classical' macroeconomic thought.

Stable Equilibrium: According to Say's law, the owners of inputs, who earn income through the process of production, spend their entire income on purchase of goods and services. Thus, the entire output of goods and services is sold out. There

is no general overproduction and underproduction over a period of production and the economy remains in stable equilibrium.

Money as Medium of Exchange: The classical economists focus on medium of exchange function of money. According to classical approach, money is used only to facilitate the transactions and it does not play any significant role in determining the output and employment. The classical economists emphasized the role of real factors in output and employment determination.

We can understand the classical views on income, output and employment determination by studying the working of product market, labour market and credit market. The classical views on all three markets can be derived from Say's law of market, wage price flexibility and interest rate flexibility.

2.3.2 Say's Law

According to Say's law, in market economy whatever produced is sold out. It means that production of goods and services requires factors of production. These factors of production get income (rent, wages, interest and profits) in return. This income is further spent on purchase of goods and services and demand for goods and services is created. Thus, supply of goods and services creates its own demand.

Production of goods and services → generates income → generates demand

Therefore, in classical system, since value of output or income is equal to expenditure, there is equality between demand and supply hence aggregate demand (AD) equals to aggregate supply (AS). The classical economists believe that output level is maximum at full employment level. The classical economists did not differentiate between long-run and short-run supply curve. The only aggregate supply curve in classical system is long-run aggregate supply curve which is vertical.

Aggregate Supply (AS): In the classical system, there is state of full employment and output is maximum. Therefore, aggregate supply does not change with change in price level and aggregate supply curve is vertical line (parallel to Y-axis) as in figure 1.

Aggregate Demand (AD): The relationship between aggregate demand and price

level is usual inverse relationship. Therefore, aggregate demand curve slopes downwards from left to right as in figure 2.

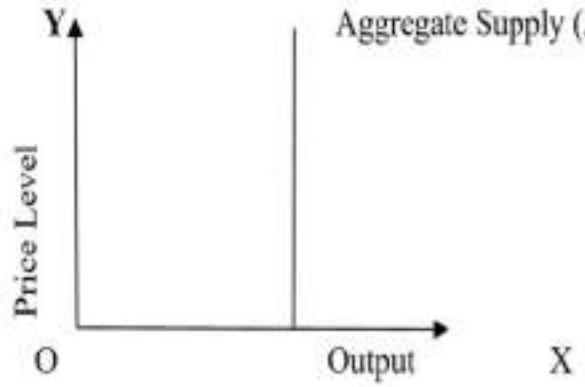

Figure 1

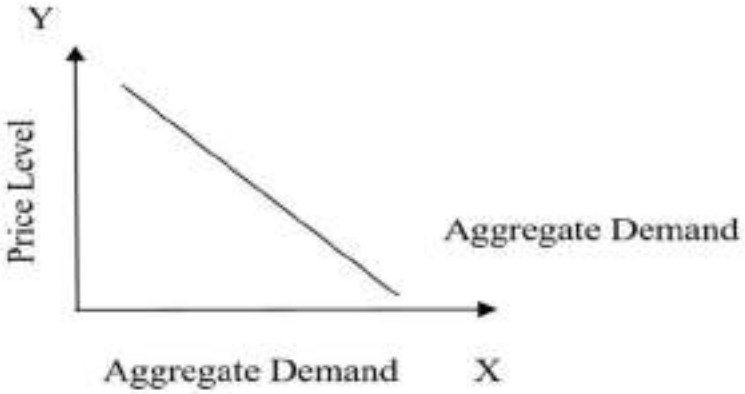

Figure 2

Equilibrium Level of Output: In the classical system focuses on full employment and based on Say's law of market. Thus, classical economists assumedthat prices are flexible and determined by market forces of demand and supply, hence aggregate demand equals to aggregate supply. Therefore, output produced at full employment is equilibrium level of output. In diagram (Figure 3) AS is aggregate supply curve, AD_1 is initial aggregate demand and E is point of equilibrium where AD=AS. Equilibrium output is OQ_1 and price level is OP_1.

Now let us suppose that if individual do not spend his entire income (due to savings) and there is fall in aggregate demand. Due to fall in aggregate demand, the equality of aggregate demand and aggregate supply is disturbed. This fall in aggregate demand could cause economy to move towards point A, where resources would be unemployed. The unemployment of inputs wouldcause fall in input prices and economy will adjust to new price level P2.

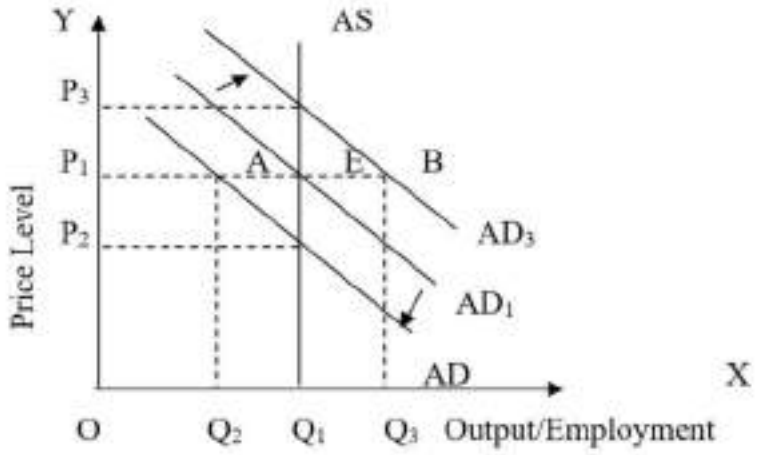

Figure 3

Similarly, if there is an increase in aggregate demand (aggregate demand curve shifts to AD3), economy could move to point B which is beyond full employment level. The input suppliers bid up input prices and the economy quickly adjust to the new price level at P3. Thus, due to flexibility of prices equilibrium is restored if disturbed due to fall in or increase in aggregate demand.

The classical economists believed in Say's law. Therefore, according to classical economists, production creates demand sufficient to purchase all goods and services produced. This law can be easily understood in barter system. Suppose a farmer produces wheat. Some part of the wheat produced will be consumed by the farmer and with the remaining surplus of wheat farmer is thinking of goods and services he can obtain in exchange of it. Thus, production of wheat by farmer creates demand for other products.

But in money economy, farmer may not spend his entire income because he may choose to save some money. Thus, farmer's demand for goods and services does not necessarily match

the income of the farmer and it is difficult to believe that Say's law does hold in money economy. But classical economists argued that Say's law still holds in money economy where individuals may spend less than their entire income. They explain their argument on the basis of Interest rate flexibility.

Check Your Progress-I

Q1. Define Say's law

Ans. .....

Q2. How to determine Equilibrium level of output?

Ans. .....

2.3.3 Interest Rate Flexibility

The classical economists argued that if an individual is not spending his entire income, he will save. Saving is the leakage out of spending stream and savings are injected back in spending stream through investment. In the classical model, saving is matched by an equal amount of investment because of interest rate flexibility in the credit market.

Investment (I): According to classical economists, investment is interest-elastic andthere is inverse relationship between investment and rate of interest because rate of interest is cost of borrowing. The higher the rate of interest is, the fewer the borrowings of the firm. Hence the curve showing relationship between investment and rate of interestis downward sloping.

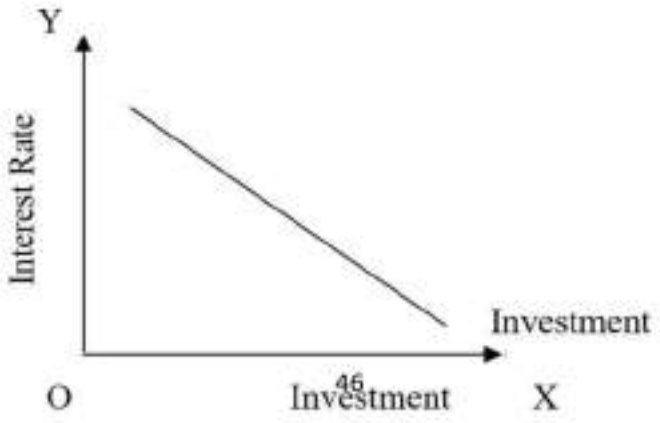

Figure 4

Savings (S): According to classical economists, savings of households are also interest- elastic and relationship between savings and interest rate is positive. The higher the reward for savings (rate of interest) is, higher the savings of households since opportunity cost of consuming is high. Hence the curve showing this relationship is upward rising.

Figure 5

Equilibrium in Credit Market: According to classical economists, the interest rate is flexible and adjusts so that savings equals investment. Thus, if savings increase (from S1 to S2), interest rate falls (from i1 to i2) and hence investment increases (from I1 to I2) and saving investment equality restored since increase in saving would result in equivalent cut in consumption and investment increase by same amount as drop in consumption (as shown in figure 6).

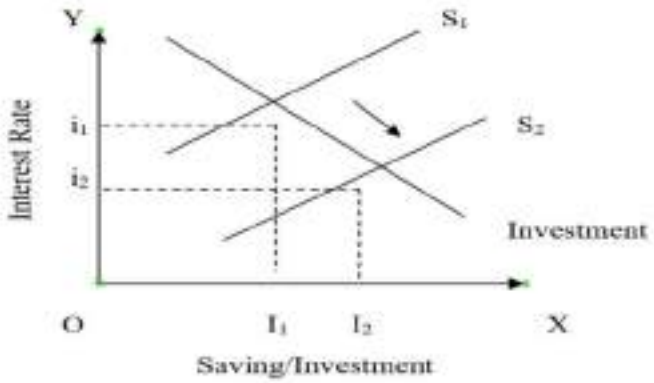

Figure 6

Therefore, saving and investment will always be brought into line by interest rate flexibility. Hence savings will always equal to investment in classical system and economy will always be in equilibrium. Such equilibrium will be at full employment level due to wage flexibility.

2.3.4 Wage Rate Flexibility

The classical economists believe that markets are competitive and forces of demand and supply operate in all market. Hence in labour market, wage rate flexibility would cause the equality of quantity supplied of labour and the quantity demanded of labour.

A.Demand for Labour: A competitive, profit maximizing firm would hire an additional unit of labour by comparing extra revenue generated by additional unit of labour (from increased production) is greater than extra cost of hiring additional unit of labour.

Here, Extra revenue generated by additional unit of labour = $MP_L \times P$ and extra cost of hiringadditional unit of labour = W

Where MP_L is marginal product of labour, P is price of output and W is wage.

Now, if $MP_L \times P > W$ i.e. extra revenue exceeds the extra cost, an extra unit of labour increases the profit. Therefore, firm continue to hire labour until the next unit would no longer beprofitable. It means,

$$MP_L \times P = W$$

or

$$MP_L = \frac{W}{}$$

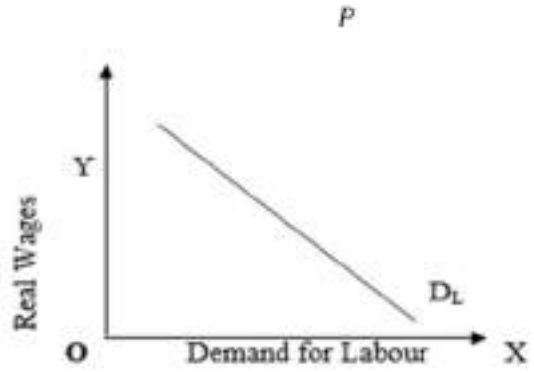

Figure 7

Thus, to maximize profit, the firm hires upto the point where marginal product of labour is equal to real wage. Since marginal product of labour decreases as the amount of labour increases so labour demand curve (DL) is downward sloping. Therefore, labour demanded increases with decrease in real wage rate as shown in figure 7.

B. **Supply of Labour**: The supply of labour is positively related to real wage because to get employment worker have to sacrifice leisure. So, employer has to offer additional wage to put worker on additional labour. Therefore, supply of labour increases with increase in the real wage rate as shown by supply curve (SL in figure 8). But this relationship holds only till the point of work-leisure trade-off i.e after a point, further increase in

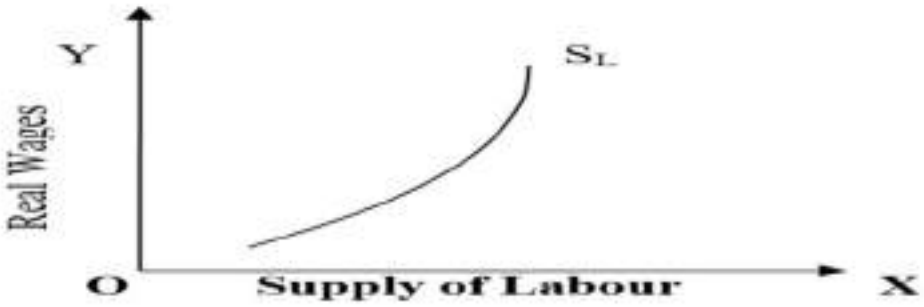

Figure 8

wage rate would induce workers to prefer leisure to work hence supply of labour would fall with increase in wage rate.

C. **Equilibrium in Labour Market**: The point of intersection of labour demand curve and labour supply curve determines the equilibrium in labour market (figure 9) hence the level of employment (ON) and wage rate (OW) is determined.

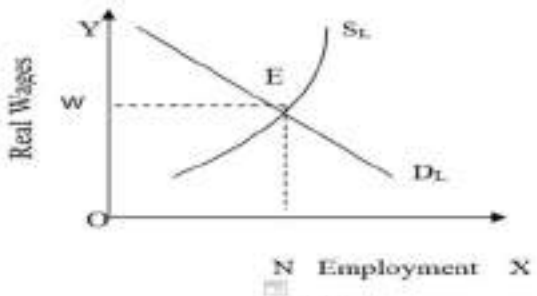

Figure 9

According to classical economists, there is always full employment in the economy. If there is unemployment i.e. demand for labour is less than supply of labour, money wages would fall and full employment level will be restored. Similarly, if there is a shortage in the labor market, the wage rate will rise, and the quantity supplied will equal the quantity demanded. We can understand this process as follows:

Unemployment → fall in money wages → fall in cost of production → fall in product prices → increase in demand for product → increase in sales → increase in production → increase in employment.

Thus, full employment will be attained. This is known as wage-price flexibility in classical system.

2.3.5 Determination of Output and Employment

The level of output and employment in classical system is determined by production function and equilibrium in labour market. According to classical economists, output depends on the labour and capital employed. The classical production function assumed that capital is fixed hence labour is only variable factor and application of labour is subject to the law of diminishing returns i.e. marginal productivity of labour decreases with increase in employment. The figure 10 shows that marginal product of labour goes on decreasing as labour employment increases. The level of output increases as employment increases but less that proportionate.

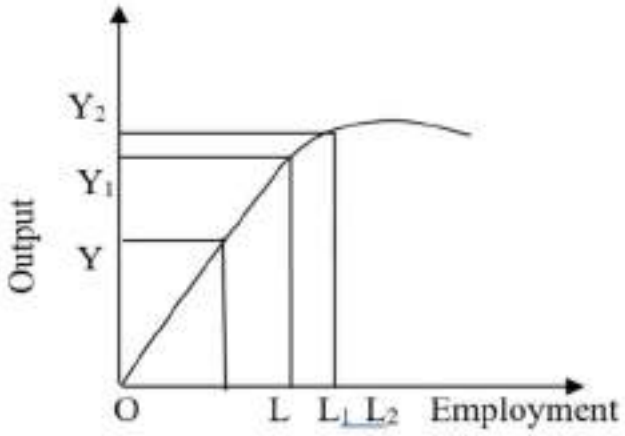

Figure 10

The equilibrium level of employment is determined by equating demand for and supply of labour and determination of output can be shown by putting together the production function with labour market equilibrium (Figure 11).

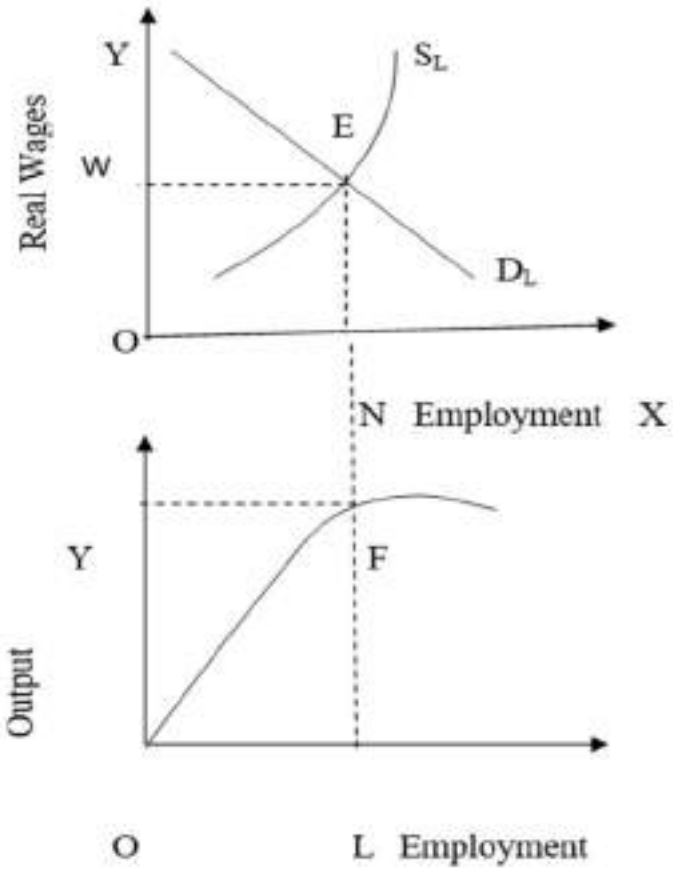

Figure 11

In labour market, the level of employment (ON) and wage rate (OW) is determined. The line ON extended downward to the production function which intersect the production function at point F. A line drawn from point F to Y-axis determines the equilibrium level of output at OY. Thus, employment and output are simultaneously determined in the classical model.

According to classical thoughts there is full employment in economy and prolonged unemployment is impossible in the long run because quick adjustments in prices, wages and interest rates keeps resources fully employed.

2.3.6 Criticism of Classical Economics

With the occurrence of Great Depression in 1930, the basic postulates of classical economics were proved wrong. Keynes challenged the classical thinking in 1936 on following grounds:

1) Keynes criticized the classical postulate of state of equilibrium and full employment in the economy. During Great Depression, economies suffered a long-run disequilibrium and a prolonged state of involuntary unemployment.
2) Another postulate of classical economics is Say's law i.e. aggregate demand is always equal to aggregate supply in classical system. In the US, due to depression, the supply of labour as well as goods and services was there but demand lagged far behind.
3) According to Keynes, increase in savings due to decrease in consumption may not matched by equal increase in investment. Thus, with decrease in total expenditure aggregate demand will fall.
4) Keynes challenged the classical economist's belief that saving and investment depend on the interest rate. According to Keynes there are number of factors such as income and business expectations that determines the level of savings and investment.
5) Keynes believed in government intervention to influence the level of output and employment.

Thus, classical economics was failed to explain the causes of unemployment and disequilibrium in economy during Great Depression. Hence classical system collapsed and it gave rise to Keynesian economics.

Check Your Progress- II

Q1. Which type of adjustments keeps resources fully employed in classical framework?

Ans. .....

Q2. How Keynes challenged classical thinking?

Ans. .....

2.4 Determination of Income, Output and Employment: Keynesian Approach

After discussing the classical theory, we now move to Keynesian theory of income, output and employment determination. Keynes had developed his theory of income and employment determination in contrast to classical model. He criticized the Say's law and emphasized the role of demand in the determination of output and employment. He also challenged the classical postulates of Laissez faire, self-regulating economy and wage, price and interest rate flexibility.

2.4.1 Assumptions

Before we start the Keynesian theory, let us go through the assumptions on which Keynesian theory is based.

1) In Keynesian theory prices are assumed to remain constant even if aggregate demand or aggregate supply change.
2) Keynesian theory holds good in short period because Keynes believed that, -in the long run we are all dead.!
3) According to Keynes, medium of exchange is not the only function of money. It also performs store of value function.
4) In contrast to classical economists, Keynes believed that interest is monetary phenomenon and it is determined by demand for and supply of money.
5) There is no foreign trade.

Given these assumptions, we can now study the determination of income, output and employment in Keynesian economics. Before discussing the output and employment determination we need to know the views of Keynesian on wage, price and interest rate flexibility.

In contrast to classical economists, many economists believe that wages and prices are slow in adjusting, especially downwards. This tendency for wages and prices to adjust slowly downward to change in economy is known as wage-price inflexibility. Empirical evidences support the wages and prices to be sticky downwards. Due to long-term labour contracts and efficiency wages (higher wages attract productive workers); firm may not be able to cut wages

which causes downward stickiness of wages. Prices could also be inflexible due to menu cost i.e. cost of printing new catalogs and new advertisement etc.

Keynes also argued that wages and prices are inflexible downward. Wages could be sticky due to long-term labour contracts, trade unions and minimum wage laws. Due to stickiness of wages, price-level will not fall (because some firms adjust price slowly) in response to reduction in aggregate demand. Further Keynes argued that internal structure of economy is not always competitive enough to allow prices to fall. The monopolistic elements in economy sometimes prevent prices from falling.

This stickiness of wages and prices causes the sufficient excess capacity in economy and therefore short run aggregate supply curve is flat. Keynes believed that the time required for wages and prices to adjust downward is long enough to say that the economy is not self-regulating.

2.4.2 Aggregate Demand and Aggregate Supply Framework

According to Keynes, equilibrium level of output is determined by the equality of aggregate demand and aggregate supply.

A. Aggregate Demand: Since there is no foreign trade, aggregate demand consists of consumption, investment and government expenditure. Any change in these variables can cause shift in aggregate demand. For example, rise in autonomous consumption will raise consumption expenditure and hence there would be increase in aggregate demand depending on the multiplier. According to multiplier process, consumption of one person would increase with an initial rise in autonomous consumption level. This increased consumption generates additional income for another person leading to additional consumption spending by that person and so on. The value of multiplier is calculated by following formula.

$$\text{Multiplier} = \frac{1}{1-MPC}$$

Where, MPC is marginal propensity to consume i.e. change in consumption expenditure with change in income.

B. Aggregate Supply: Since the price level is assume to be constant until economy reaches at full employment, the aggregate supply curve must be horizontal. The Keynesian aggregate supply curve is horizontal until economy reached at full employment.

Now we can observe the effects of change in aggregate demand given the aggregate supply curve in Keynesian model (Figure 12). An increase in aggregate demand (from AD_1 to AD_2) before full employment level raises output but price remained same. Once economy has reached full employment level an increase in aggregate demand (from AD_3 to AD_4) raises the price level (from P_2 to P_3).

Therefore, changes in aggregate demand before full employment (in the horizontal section of aggregate supply curve) do not change any price level, but change in aggregate demand after full employment (in the vertical section of aggregate supply) do change in price level.

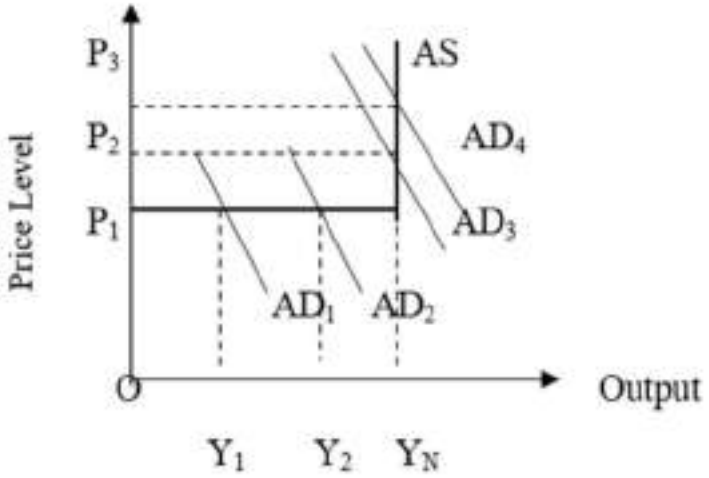

Figure 12

According to classical economists, disequilibrium in economy is temporary state. But Keynes believed that economy could get stuck in a recessionary gap because consumption and investment would not rise enough to shift the aggregate demand curve. Keynes argued that investment spending not always respond the change in interest rate. The pessimistic business expectations may resist people to invest more at lower interest rate.

Therefore, Keynes believed that the economy is not self-regulating and economic instability is possible. Hence government intervention can help to shift aggregate demand.

Check Your Progress- III

Q1. What are the views of Keynes on wage-price flexibility?

Ans. .....

Q2. What is the shape of aggregate supply curve in Keynesian framework?

Ans. .....

2.4.3 Aggregate Expenditure and Output Framework

1. Aggregate Expenditure: In two-sector model, there is no government taxes or subsidies. Hence, aggregate expenditure (aggregate demand) consists of two elements i.e. consumption expenditure and investment expenditure. That is,

$$\text{Aggregate Expenditure (AE)} = C+I$$

Where, C is consumption Expenditure and I is Investment

A. Consumption Expenditure: Consumption Expenditure is positive function of current absolute income. That is, if income increases, consumption expenditure also increases but less than proportionately.

$$C = f(Y)$$

The value of marginal propensity to consume lies between zero and one i.e. $0<MPC<1$. Marginal propensity to consume is the change in consumption expenditure with rise or fall in disposable income. The consumption function can be written as:

$$C = a + bY$$

Where, C is consumption expenditure,

a is autonomous consumption and b is MPC= $\frac{\Delta C}{\Delta Y}$

Figure 13

B. Investment: To simplify things, investment is assumed to be constant and the investment curve is horizontal. **I = *I***

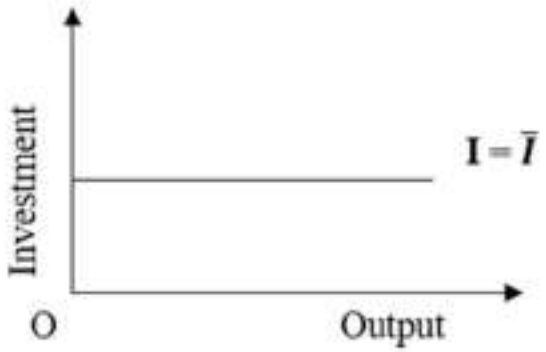

Figure 14

2. Aggregate Supply: Aggregate supply refers to the total supply of goods and services in an economy. Keynes used the classical production function to derive aggregate supply function where short run output depends on level of employment. It means aggregate demand is always equal to aggregate supply (AD = AS i.e. C + I = C + S).

Keynes form aggregate supply function on basis of this relationship between AD and AS. In diagram (figure 15) the relationship between aggregate demand and aggregate supply is shown by 45^0 line. At each point of this line output and aggregate expenditure are equal.

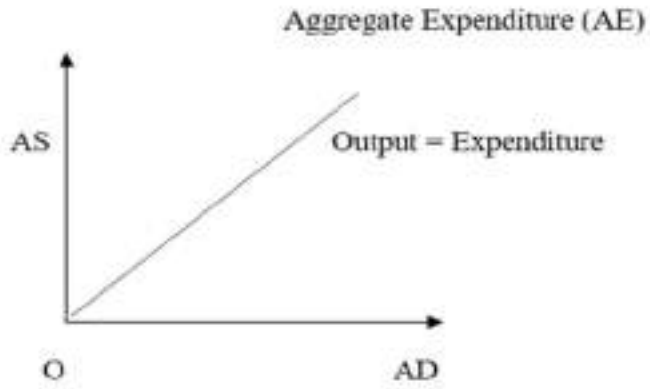

Figure 15

The concepts of aggregate supply and aggregate demand were first used by Malthus. Malthus, in contrast to classical, argued that aggregate demand might fall short of the aggregate supply leading to overproduction, but could not prove it. Keynes used this idea to develop his theory of income and employment determination.

3. Equilibrium: According to Keynes, equilibrium level of output is determined at a point where aggregate demand (C+ I) is equal to aggregate supply (C + S). That is,

$$AD = AS$$

$$C + I = C + S$$

But Keynes argued that aggregate demand and aggregate supply are not always equal. Because aggregate demand depends on households' plan to consume and to save and invest and aggregate supply depends on producers plan to produce goods and services. Therefore, if households' plan coincides with producers'' plan only then aggregate demand could be equal to aggregate supply. Thus, national income is in equilibrium at unique level of output and income at which aggregate demand equals to aggregate supply, hence equilibrium condition is:

$$S = I$$

2.4.4 Saving-Investment Approach

Saving investment approach can be derived directly from aggregate demand-aggregate supply approach. The equilibrium condition is

$$AD = AS$$

or

$$C + I = C + S$$

or

$$I = S$$

That is, savings equals to investment. Where investment is assumed to be constant and saving is function of income. Since people spends something on consumption at zero level of income, therefore savings are negative till individual is unable to meet his consumption requirements out of his income. When income rises above the consumption expenditure, positive savings takes place and after that savings increase with increase in income.

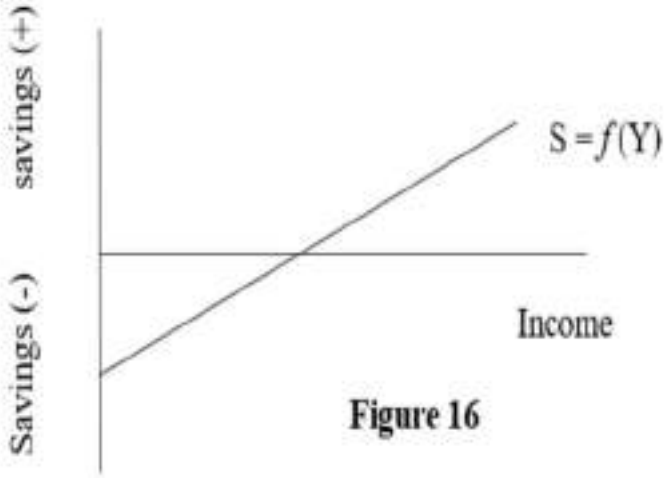

Figure 16

Saving investment approach determines the same equilibrium level of the national income as determined by the aggregate demand and aggregate supply approach as shown in figure 17.

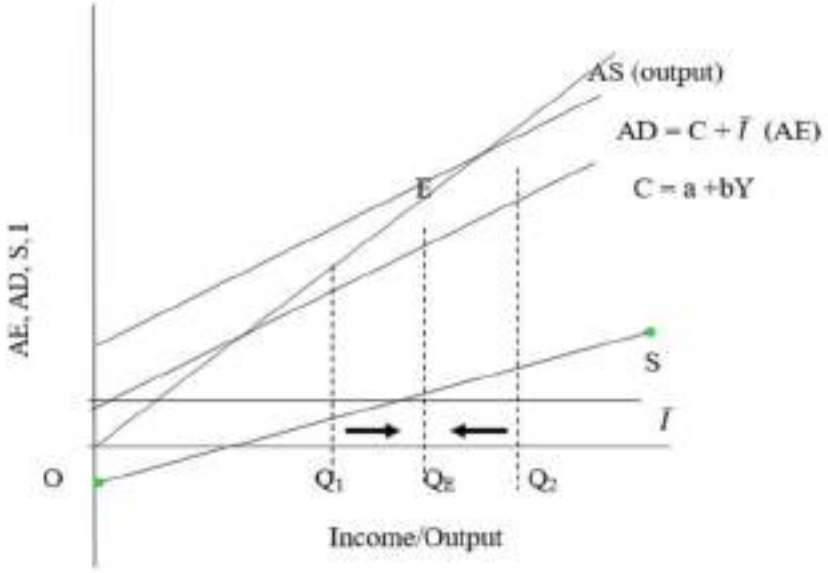

Figure 17

The point of intersection of AD curve and AS curve (i.e. AD = AS) is the point (shown by point E in the diagram) of equilibrium of national income. This point of intersection is called _the Keynesian cross.' The output level other than QE when aggregate demand, the amount the

people want to buy, is not equal to output produced shows disequilibrium in the economy and this disequilibrium is corrected through change in inventories. Inventory is the stock of goods that a business firm hold to meet unexpected change in demand. For example,

- At output level Q_1, aggregate expenditure (AE) > Output produced unexpected decrease in inventories since firm have to meet this rise in demand from stock held firm will realize underproduction increase in production output move to QE.
- At output level Q_2, aggregate expenditure (AE) < output firm has produced more than demand difference is added to inventories unexpected increase in inventories firm will realize overproduction production cut output move to QE.

Therefore, we can say that any change in aggregate expenditure (AD) will shift equilibrium from one point to other and accordingly output level will change. For example, increase in aggregate demand will cause an upward shift in aggregate demand curve, hence shift equilibrium point towards right will cause output to increase. We can further note that change in aggregate demand could be due to change in consumption or change in investment or both. Consumption is a stable function of income. On the other hand, investment is determined by business expectations, innovations, rate of interest etc and how national income changes with change investment depends on investment multiplier.

2.5 Differences in the Views of Classical Economists and Keynes

After discussing the classical and Keynesian approach of output and employment determination, we can easily differentiate the views of both schools of thought.

1) Classical economists believed Say's law of market. That is according to classical economists, supply creates its own demand. But Keynes believed that overproduction is possible due to lack of aggregate demand.
2) Classical school of thought focused on supply side while Keynes emphasized the role of aggregate demand.
3) According to classical economists, savings are directly related to rate of interest. But Keynes believed that it depends on savings goals of savers.
4) In classical system, investment is inversely related to interest rate. But in Keynesian economics, if business expectations are pessimistic investor may invest less at lower rate of interest.

5) Savings are leakages and investment is injection in the spending stream. So savings are equal to investment in classical system. But according to Keynes, income can be hoarded (in cash or banks) to avoid risky lending of money. In such situation savings will exceed investment.

6) Classical economists believed in wage price flexibility. According to Keynes, wages and prices may be inflexible downwards.

Check Your Progress- IV

Q1. Which side Keynes focused upon?

Ans.....

Q2. Does saving investment approach determines the same equilibrium level of the national income as determined by the aggregate demand and aggregate supply approach?

Ans.....

2.6 Summary

The classical economists believed that economy is always in equilibrium given the perfect competition in the market. If there is disequilibrium caused by external forces, the market forces of demand and supply bring it back to equilibrium. The classical economics is based on Say's law which states that aggregate demand is always equal to aggregate supply. The classical economics was dominating the macroeconomic ideas until the Great Depression, when ideas of classical economists were challenged by Keynes. Keynes argued that classical economics is failed to explain the phenomenon of US economy during the Great Depression. He criticized the Say's law and emphasized the role of aggregate demand. Keynes believed that there is possibility of overproduction due to deficiency of aggregate demand. He also questioned the classical economists' postulate of wage-price flexibility and argued that wages and prices may be inflexible downwards.

2.7 Question for Practice

A. Short Answer Type Questions

Q1. Define aggregate demand and aggregate supply.

Q2. What is principle of laissez-faire?

Q3. Do Keynes believe in laissez-faire?

Q4. Explain wage-price flexibility.

Q5. What is interest rate flexibility?

Q6. Derive Keynesian aggregate supply curve.

Q7. Why wages and prices are sticky?

Q8. Differentiate between classical and Keynesian views.

B. Long Answer Type Questions

Q1. Explain in detail the classical theory of output and employment.

Q2. Explain in detail the Keynesian theory of output and employment.

Q3. Critically examine the classical approach to income, output and employment determination.

Q4. How equilibrium level of output is determined under AD-AS framework ofKeynes.

2.8 Suggested Readings

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M.A (ECONOMICS)

SEMESTER–II

COURSE: MACRO ECONOMICS

UNIT 3: KEYNES' PSYCHOLOGICAL LAW OF CONSUMPTION, DETERMINANTS OF PROPENSITY TO CONSUME, ABSOLUTE AND RELATIVE INCOME HYPOTHESIS

STRUCTURE

3.0 Learning Objectives

After reading this unit, learner will be able to:

- Know the concept of consumption function.
- Describe Keynesian consumption function.
- Describe Relative Income Hypothesis.
- Identify the factors influencing consumption decisions.

3.1 Introduction

The consumption decisions of households, i.e. how much to consume and how much to save, are crucial. The classical school of thought tends to view consumption in negative sense because in their perspective, consumption spending is unproductive. The classical economists, based on Say's law, focused on supply side. Keynes, on the other hand, emphasized on demand side. He rejected the view of classical economists and appreciates the central role of consumption expenditure in determining effective demand. Keynes focused on propensity to consume in his theory to explain aggregate consumption expenditure.

3.2 Basic Concepts of Consumption

In the unit, we are going to discuss the consumption behavior of individual household. While studying the consumption behavior of individual household, we will go through Keynes' Psychological Law of Consumption, Determinants of Propensity to Consume, Absolute and Relative Income Hypothesis. Before we discuss these laws related to consumption expenditure, weneed to have some idea of the concepts related to these laws such as consumption function, propensity to consume, propensity to save etc. Let us discuss these concepts first.

A. **Disposable Income:** All personal income is not disposable. Individuals have to pay taxes and they are free to spend left over income after payment of taxes. Thus, Disposal income is the income after receipt of government transfers and payment of taxes.

Personal Disposal Income = Personal Income – (Payable Taxes + Other Deductions)

We can observe from our daily life that people with high disposable income on an average

Spend more than people with lower disposable incomes.

B. Consumption Function: A functional statement showing relationship between consumption expenditure and its determinants is known as Consumption Function. Consumption expenditure of an individual or household depends on many factors such as income, wealth, expected future income, consumption of other people, age etc. Income is the primary determinant of consumption out of these factors, hence general form of consumption function shows the relationship between consumption expenditure and disposable income. It can be written as:

$$C = f(Y)$$

Where, C – Consumption Expenditure, and Y – Disposable Income.

C. Propensity to Consume: Propensity to consume is a functional relationship between given level of income and consumption expenditure out of that level of income.

i) **Average Propensity to Consume (APC):** The proportion of disposable income which is spent on consumption expenditure is called average propensity to consume.

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

ii) **Marginal Propensity to Consume (MPC):** The change in consumption expenditure with rise or fall in disposable income is called marginal propensity to consume. It is the amount consumed out of additional rupee of income and calculated by dividing change in consumer spending by change in disposal income.

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

Where, ΔC – change in consumption expenditure and ΔY- change in disposable income

D. Saving Function: As we know that income is either consumed or saved therefore

$$Y = C + S$$

$$S = Y - C$$

Where S- Savings,

Therefore, saving function is counterpart of consumption function and it shows the relationship between savings and disposable income.

1. **Average Propensity to Save (APS)**: The proportion of disposable income which is not spent on consumption expenditure or saved is called average propensity to save.

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

2. **Marginal Propensity to Save (MPS):** It is the amount saved out of additional rupee of income and calculated by dividing change in savings by change in disposal income.

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

Where, ΔS – change in savings and ΔY- change in disposable income

E. Relationship between Marginal Propensity to Consume (MPC) and Marginal Propensity to Save (MPS): We know that that part of income which is not spent on consumption expenditure is saved i.e.

$$Y = C + S$$

$$S = Y - C$$

$$\Delta S = \Delta Y - \Delta C$$

Divide both sides by ΔY

$$\frac{\Delta S}{\Delta Y} = \frac{\Delta Y}{\Delta Y} - \frac{\Delta C}{\Delta Y}$$

$$MPS = 1 - MPC$$

Or

$$MPS + MPC = 1$$

Therefore, total of marginal propensity to consume or marginal propensity to save is equal to one.

F.Autonomous Consumption Expenditure: Till now we have studied that consumption expenditure of a household depends on disposable income. But we can imagine a situation, when disposable income of household is nil. What would be the consumption expenditure of a household with zero disposable income? A household with zero disposable income would fund some consumption using its savings or by borrowing from someone. So, the expenditure of a household on consumption if it had zero disposable income is called autonomous consumption expenditure and the level of consumption independent of disposable income is called autonomous consumption.

3.3 Keynes' Psychological Law of Consumption

When we think about consumption function, some mathematical functional relationship comes to our mind. The economists, who study the consumption behavior, rely on data collected on income and consumption expenditure to analyze the behavior of households. However, Keynes, who wrotehis book in 1936, made certain assumptions about consumption function based on introspection and observations.

3.3.1 Assumptions

Keynes' Psychological law of consumption is based on following assumptions:

1) Households decide their current consumption expenditure on the basis of their current income.
2) The marginal propensity to consume (MPC) is between zero and one.
3) The average propensity to consume (APC) falls as income rises.

Based on above assumptions Keynes developed a theory of aggregate consumption.

3.3.2 The Fundamental Psychological Law

Keynes' theory of aggregate consumption, what he calls a fundamental psychological law, is basedon the concept of propensity to consume.

Keynes' defined this law as -the fundamental psychological law, upon which we are entitled to depend with great confidence, both a priori from the knowledge of human nature and from the detailed facts of experience, is that men are disposed, as a rule and on the average, to increase their consumption as their income increases, but not by as much as the increase in their income."

In the opinion of Keynes, when a person earns an extra unit of income (say rupee), he typically spends some part of it and saves remaining part of it. But as income increases, people spend less and less proportion of marginal income on consumption i.e. marginal propensity to consume decreases with increase in income. Thus, Keynes talked about non-linear consumption function. We can see from table below that marginal propensity to consume do not remains

constant. It decreased as income increases. This relationship is also shown with the help of Table 1and the diagram (Figure 1).

Table 1

Income (Y)	Consumption (C)	Savings (S)	MPC $= \frac{\Delta C}{\Delta Y}$
0	50	-50	-
100	130	-30	0.8
200	200	0	0.7
300	250	50	0.5
400	275	125	0.25

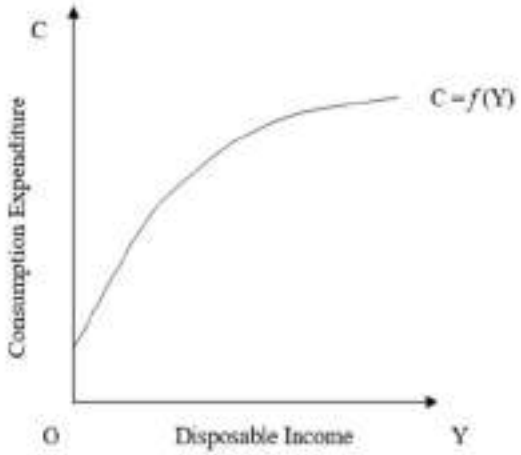

Figure 1

The consumption function produced by Keynesian theory is relevant for individual household's consumption behavior not for the economy as a whole or at the aggregate level. However, Keynesian economists empirically estimated the consumption function for economy of US and found that the relationship of income and consumption expenditure is linear i.e. marginal propensity to consume remains constant. Thus, propensity to consume is central to the consumption theory of Keynes and Keynesian economists.

Check Your Progress-1

Q1. Define consumption function.

Ans.....

Q2. What do you mean by propensity to consume?

Ans .....

Q3. Define saving function.

Ans .....

3.3.3 Determinants of Propensity to Consume

The propensity to consume out of disposable income is centre-piece of Keynes' theory of aggregate consumption. Although income is the main determinant of consumption spending, but there is other which determine the value of propensity to consume. These are subjective, objective and habitual factors.

3.3.4 Subjective Factors

The subjective factors consist of such factors which motivate people to consume more or which put pressure on people to save more. These motivations may be different in different societies and depends on culture, history and beliefs of the society. We can broadly categorize the subjective factors into two types of motivations.

A) **Motivation to Consume:** If a community believes in enjoyment and extravagance, it shows that subjective motivations to consume are strong in that society. Hence the propensity to consume out of given income will increase.

B) **Motivation to Save:** If in a society, there are subjective motivations to refrain from consumption, people will believe in precaution, greed and saving. Hence subjective motivations to save are strong and propensity to consume out of given income will fall.

Keynes believed that subjective factors are unlikely to influence propensity to consume in short period. According to Keynes, subjective factors will only occur over long period of time.

3.3.5 Objective Factors

Keynes also identified some objective factors which can influence propensity to consume. These factors are:

1) **Windfall Gain and Loss:** Windfall gains and losses are unexpected. Therefore,

Propensity to consume increases with windfall gains and it falls with windfall losses.

2) **Expected Future Change in Rate of Interest:** The propensity to consume is likely to increase with low rate of interest. But according to Keynes, propensityto consume is not responsive to small changes in interest rate.

3) **Change in Distribution of Income:** If the distribution of income moves towards poor people of the society, propensity to consume will increase.

4) **Change in Fiscal Policy:** Due to change in taxation policy, if the distribution of income changes, then it can influence the value of propensity to consume.

5) **Change in Aggregate Net Income**: Entrepreneurs set aside financial provision to cover supplementary costs. If aggregate net income falls due to increase in these supplementary costs, propensity to consume will fall.

3.3.6 Habits of Consumer

According to Keynes, another factor along with income, objective factors and subjective factors that can influence the propensity to consume is the habits of consumers. Due to short-period changes in level of income, the habits of consumers do not adjust to the changes instantly. This can cause value of the propensity to consume to fluctuate. However, if the change in incomeis sustained then eventually the consumer's habits will adjust to the changes.

However, Keynes assumed these subjective, objective and habitual factors remained constant and hence propensity to consume is a reasonably stable function.

3.4 Absolute Income Hypothesis

Keynesian fundamental law of consumption was the first systematic theory of consumption expenditure. However, Keynes' theory of consumption was challenged on the basis of argument that consumption expenditure depends not only on current income but also on other factors like wealth, expectations, income distribution etc. Although the economists have the view that consumption expenditure is function of income but different economists have different concept of income like absolute income, relative income, current income, expected income and permanent income etc. The main theories of consumption are- Absolute Income Hypothesis, Relative Income hypothesis, Permanent Income Hypothesis and Life-cycle hypothesis.

In this unit, we are going to discuss first two theories viz. Absolute Income Hypothesis and Relative Income Hypothesis. This sub-section deals with absolute income hypothesis.

Based on the psychological law of consumption, the absolute income hypothesis states that the current consumption expenditure is function of current and absolute level of income. That is

$$C = f(Y)$$

Where, C- current consumption and Y – Current income

3.4.1 Short-Run Consumption Function

Keynesian theory deals in short-run. Therefore, theory of consumption is also treated as short-runtheory.

- Change in income leads to change in consumption as well as change in savings. That is,
  - $\Delta Y = \Delta C + \Delta S$
- Consumption Expenditure is positive function of current absolute income. There is positive relationship between consumption and income. That is, if income increases, consumption expenditure also increases.
  - $C = f(Y)$ and $\frac{\Delta C}{\Delta Y} > 0$
- Consumption income relationship is reversible i.e., if income decreases, consumption expenditure also decreases.
- Consumption expenditure of individual household does not depend on consumption expenditure of other consumer.
- Relationship between consumption and income is non-proportional in nature. That is if income increases, consumption expenditure will increase less than proportionately.
- The value of marginal propensity to consume lies between zero and one i.e. 0<MPC<1.
- The marginal propensity to consume is less than average propensity to consume i.e.
  - $MPC < APC$ or $\frac{\Delta C}{\Delta Y} < \frac{C}{Y}$
- There is negative relationship between average propensity to consume (APC) and income (Y).
- The marginal propensity to consume declines as income increases.

Therefore, according to absolute income hypothesis, marginal propensity to consume decreases with increase in income. That is, households with lower income have higher marginal propensity to consume than households with higher income. However, Keynesian economists, on basis of empirical data, found that marginal propensity to consume is stable in nature andrelationship between consumption and income is linear.

Thus, in absolute income hypothesis, consumption function can be written as:

$$C = a + bY$$

Where, C is consumption expenditure,

a is autonomous consumption and

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

Example: Keynesian economist's consumption function with constant MPC can be shown (Table2) as follows (hypothetical example):

Table 2

Income (Y)	Consumption (C)	MPC= $\frac{\Delta C}{\Delta Y}$
0	100	0.65
100	165	0.65
200	230	0.65
300	295	0.65
400	360	0.65

The equation of consumption function representing above example can be written as:

$$C = 100 + 0.65\ Y$$

Where, C is consumption expenditure and the value 100 shows the autonomous consumption i.e. level of consumption at zero level of income. Y is income and marginal propensity to consume is 0.65. We can note here that although MPC is less than one but it remained constant with increase in income. This consumption function can also be shown with the help of figure 2.

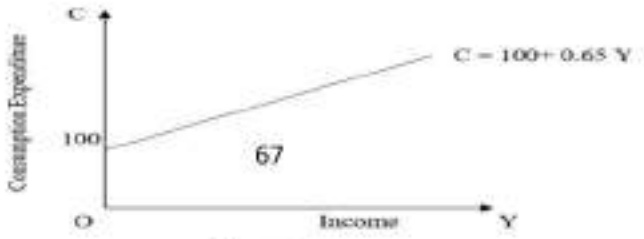

Figure 2

Thus, based on postulates of absolute income hypothesis, short run consumption function reflects that as income increases, people tend to spend a decreasing percentage of income or tend to save an increasing percentage of income. Therefore, marginal propensity to consume is less than average propensity to consume. If with increase in income, the ratio of consumption to income (APC) falls then the ratio of increment to consumption to increment to income (MPC) must be smaller than APC.

3.4.2 Long-Run Consumption Function

In long-run, consumption is determined by income, objective factors and subjective factors.

$$C = f(Y, O, S)$$

Where, C is consumption expenditure, Y is income, O is objective factors and S is subjective factors.

In 1946, Simon Kuznet studied the consumption and saving behavior. The study showed that average propensity to consume does not fall with increase in income and it is equal to marginal propensity to consume over the long run. Therefore, by late 1940s, it was observed that

> Cross-sectional budget studies and business cycle or short run data show that MPC<APC.

Long-run trend data show that MPC = APC.

3.4.3 Criticisms

The Keynesian consumption function is criticized on following grounds:

- Keynes' absolute income hypothesis is based more on _introspection' than on observedfacts.
- Concept of income used by Keynes is wrong. Current consumption not only depends oncurrent income but also on past savings.
- Role of wealth is not fully integrated into this theory.
- Keynesian consumption function is unable to explain the long run constancy of APC.
- It has ignored the role of expectations in consumption decisions.
- Role of relative income in determining consumption expenditure is also ignored inabsolute income hypothesis.

Inspite of these criticisms, Keynesian theory is the first theory of consumption and other theories are improvements of this theory. This theory is able to explain the cross-section consumption function.

Check Your Progress- II

Q1. Define absolute income hypothesis.

Ans .....

Q2. Define long run consumption function of propensity to consume.

Ans .....

3.5 Relative Income Hypothesis

We have noted that Keynes' consumption theory could not be supported by empirical data. Therefore, economists tried to develop a consumption theory based on empirical data. The model developed by Duesenberry in 1949 differs from absolute income hypothesis. Duesenberry by usingincome-consumption data propounded the theory of consumption based on two Relative Income Hypotheses.

A) According to first hypothesis, consumers are not so much concerned about their absolute level of consumption as they are with their consumption relative to that of the rest of the population.

B) Duesenberry's second hypothesis is that present consumption is not only influenced by present levels of absolute and relative income but also by levels of consumption attained in previous period.

3.5.1 Assumptions

Relative income hypothesis of consumption is based on following assumptions:

Consumption decisions of households are interdependent.

The interdependence of consumption decisions is based on strong demonstration effect i.e.imitation of consumption decisions of other households in the same relative income group.

Consumption habits are irreversible. Once acquired cannot be changed easily.

3.5.2 Demonstration Effect

According to relative income hypothesis, the consumption expenditure of a household does not depend on its absolute income but on the level of its income in relation to the households with which it identifies itself. That is households having a relatively lower income and living in the community of higher incomes tend to spend a higher proportion of their income than the households with higher incomes. This is called demonstration effect on consumption.

This hypothesis is particularly based on social pattern of consumption. Consumption is not independent. Consumption behavior of a person is affected by consumption of society. A statement showing social pattern of consumption, known as *Joneses Effect* is:

- To keep up with Joneses

The statement indicates that middle class people try to keep their standard according to high standard families

Therefore, implications of the relative income hypothesis are:

- MPC remains the same for all the households if their income changes by the same amount.
- If the income of other households remains same, MPC remains same with increase in absolute income of household.
- If the income of other households of the group increases, then MPC of the household with constant income increases.
- If a household moves up from a lower income-group to a higher income-group then its MPC decreases.

The proposition of fall in MPC as household move to higher income group is same as Keynes' propositions. However, the relative income hypothesis makes a significant deviation from the absolute income hypothesis.

While absolute income hypothesis holds that relationship between consumption expenditure and absolute income is positive, the relative income hypothesis holds that consumption does not decrease in proportion to decrease in income. Duesenberry explained it in the form of so called, the Ratchet Effect.

3.5.3 Ratchet Effect

According to Duesenberry it is much more difficult for a family to reduce consumption level once attained than to reduce savings. Thus, previous income put forth its influence on current consumption. Duesenberry maintains that basic consumption-income relationship is proportional. During expansion, the higher current income tends to raise consumption in proportion to it. But thedepressant pull of previous lower income permits it to rise only less than proportionately and APC falls with a rise in income. On the other hand, decline in current income tends to reduce consumption in proportion to it. But as the people had become used to a higher consumption standard, the ascendant pull of previous higher income restrains people to cut consumption only less than proportionately and APC goes on rising with fall in income.

This type of consumption behavior gives us the Ratchet Effect. During period of recovery, as income increases, consumption increases slowly because of two reasons:

- Due to depressant pull of low level of income of previous period.
- People will like to compensate for decline in their savings due to previous decline in income. As soon as the previous dissavings are made good, consumption starts rising in long run in proportionate relation with income.

Thus, this hypothesis points out that consumer find it much easier to increase consumption than to reduce it. This is called the Ratchet Effect. It can be shown with the help of following diagram example and diagram.

Table 3

Income(Y)	Consumption (C)	MPC = $\frac{\Delta C}{\Delta Y}$	APC = $\frac{C}{Y}$	Relation between MPC and APC
Increase in Income				
100	80	0.8	0.8	MPC = APC
110	88			
Fall in Income				
100	80	0.5	0.83	MPC < APC
90	75			

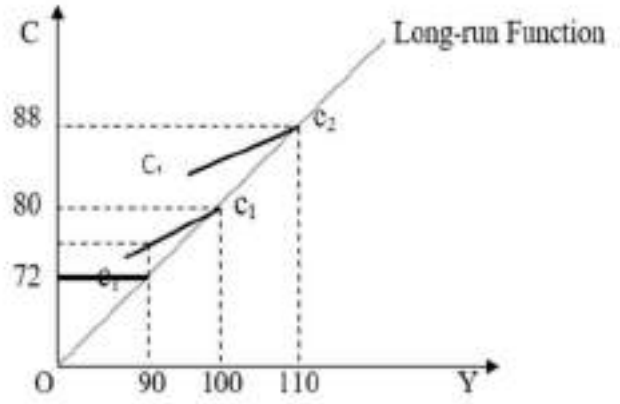

Figure 3

As income increases (from Rs. 100 to Rs. 110), consumption also increases (form Rs. 80 to Rs. 88) along the long run function with constant APC. But let us suppose at point C_1, there is recession in the economy and income falls off (from Rs. 100 to Rs. 90) then consumption expenditure decreases (from Rs. 80 to Rs. 75) along a short run function C_1C_1 not along long run (i.e. from Rs. 80 to Rs. 72). Ratchet effect keeps consumption at Rs. 75. Recovery of income take consumption back to previous level trend growth resumes along the long-run function.

Thus, Duesenberry's model implies a ratchet effect is that when income falls off, fall in consumption is less than it rises as income grows. Hence consumption-income relationship is not reversible.

3.5.4 Criticisms

The economists have pointed out following shortcomings in the relative income hypothesis:

1) This theory ignores the role of absolute income and wealth in consumer decisions.
2) Role of expectations has also been ignored.
3) This hypothesis is silent about the role of non-income determinants viz. subjective and objective factors in consumption decisions.
4) Consumer decisions are not only based on imitations but also on preferences.
5) This theory does not tally with latter empirical evidences. The empirical evidence however suggests that with unexpected increase in incomes, consumption increases less than

proportionately.

6) Consumption standards are reversible in long run. Because If there is a continuous fall in income, people cannot go on dissaving in the long run to maintain their earlier living standards. However, the relative income hypothesis does admit the reversibility of consumption expenditure with decrease in income but less than proportionately.

Thus, we can say that, despite its criticism, Duesenberry's relative income hypothesis is regarded as a significant improvement over the absolute income hypothesis as it taken into account the role of demonstration effect and past consumption habits in consumption decisions.

Check Your Progress- III

Q1. Explain the statement *To keep up with Joneses*.

Ans .....

Q2. Define Ratchet effect.

Ans .....

3.6 Summary

The consumption behavior of household is important in determining aggregate demand. Consumption expenditure of an individual or household depends on many factors such as income, wealth, expected future in come, consumption of other people, age etc. but income is the primary determinant out of these factors. Therefore, functional statement showing relationship between consumption expenditure and its determinants is known as Consumption Function. The change in consumption expenditure with change is income is shown by marginal propensity to consume. According to Keynes, current consumption expenditure depends on current income and marginal propensity to consume lies between zero and one. In his Fundamental psychological law, Keynes stated that as income increases, people spend less and less proportion of marginal income on consumption i.e. marginal propensity to consume decreases with increase in income. However, Keynesian economists based on empirical findings argued that marginal propensity to consume

although less than one but remains constant with increase in income. According to Keynes, along with income there are some objective factors, subjective factors and habitual factors which may influence the consumption behavior of individual. On the other hand, Duesen berry by using income-consumption data propounded the theory of consumption based on two Relative Income Hypotheses. According to Duesen berry, consumers are very much concerned about their consumption relative to rest of the population. He also highlighted the role of consumption attained in previous period in determining consumption levels.

3.7 Questions for Practice

A. Short Answer Type Questions

Q1. Explain briefly the concept of APC and MPC.

Q2. What is the relationship between APC and MPC?

Q3. What is autonomous consumption?

Q4. What do you mean by non-linear consumption function of Keynes?

Q5. Explain Demonstration Effect.

Q6. What is Ratchet Effect on consumption?

Q7. What are the subjective factors influencing consumption behavior?

B. Long Answer Type Questions

Q1. Explain in detail the Fundamental Psychological Law of Consumption.

Q2. What is Absolute Income Hypothesis?

Q3. Explain in detail the theory of consumption based on Relative Income Hypothesis.

Q4. How demonstration effect and Ratchet Effect influence the consumption behavior of individual?

Q5. What is propensity to consume? What are the determinants of propensity to consume?

3.8 Suggested Readings

Branson, W.H. (1979). *Macroeconomic Theory and Policy*. Harper and Row Publishers New York.

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M.A (ECONOMICS)

SEMESTER –II

COURSE: MACRO ECONOMICS

UNIT 4 A : INVESTMENT FUNCTION AND MARGINAL EFFICIENCY OF CAPITAL

STRUCTURE

4.0 Learning Objectives

After going through this unit, learner will be able to:

- Describe the concept of Investment function
- Differentiate between different types of investment
- Identify the factors affecting the investment decisions
- Interpret the concept of marginal efficiency of capital

- Illustrate the investment demand schedule
- Recognise the relationship between MEC, rate of interest and investment.

4.1 Introduction

Term investment is a very common phrase and it usually refers to the addition in the existing stock of capital. In macroeconomics literature, investment has always been an important factor. This importance has been enjoyed not only in the Keynesian and post-Keynesian theories but also in the pre-Keynesian business cycle theories. This is so because aggregate investment expenditure is an important and volatile component of the aggregate demand function. Investment expenditure is found to be at higher levels in course of prosperity due to high rates of profitability, whereas it is found to be at lower levels in times of depression due to very low rates of return. In course of depression, investors become risk-averters and even reluctant to incur expenditure even for replacing the depreciated capital equipment. Therefore, we can say that investment plays a crucial role in determining the level of national income/output/employment in the country. Moreover, higher level of investment provides a push factor to productive capacity and hence assists in generating higher level of aggregate demand and supply, which will further help in achieving the goal of full employment in the economy.

In the light of above introduction, this unit will first of all provides the meaning of investment concept, then we will differentiate between different types of investment- gross and net; induced and autonomous and ex-ante and ex-post investment. After this, unit will focus on the determining factors of investment decision. From this, you shall be able toderive the meaning and determinants of the MEC. Finally, in the last sections of the unit, you will be able to analyse that how the investment decisions are undertaken by the investors in particular capital asset or project.

4.2 Basic Concepts of Investment

In common parlance investment in considered as the purchase of the existing stocks, shares, debentures and securities. But this is not generating or adding any increment to the productive capacity of the economy, which is regarded as the general

outcome of the investment. So, in economics, such kind of expenditure on the purchase of stocks, shares, bonds and other financial instruments is not regarded as the investment, rather it is referred to as the financial investment, in which money merely transferred from one hand to another. In economics, investment is usually defined as the addition in the existing stock of capital.

In Keynesian economics, there is difference between real and financial investment. Real investment means, the investment undertaken in the purchase of new machines, construction of new factory buildings, roads, bridges and other forms of productive capital stock of the community, including the increase in inventories. On the other hand, financial investment refers to purchase of financial instruments (stocks, bonds, debentures, securities etc.), which comprises a transfer of money from one party to another party involved in the transaction. Financial investment does not lead to any change in the employment level in the economy. Itis the real investment, which leads to change in the employment in the economy. An increasein the real investment will results in increase in demand for labour as well as for other physical resources and hence increasing the employment in the economy. Therefore, investment plays a strategic role in achieving the major goals of the economy. From above discussion it is clear that in economics, we are concerned with the Keynesian sense of investment.

Different economists have defined the term investment differently. In the words of J.M. Keynes, 'investment refers to the increment of the capital equipment.' According to Edward Shapiro, 'investment is that part of the economy's output for any time period that takes the form of new structures, new producer's durable equipment and change in inventories.' According to Rosalind and Rebmann, 'Investment refers to the accumulation over time by firms of real capital goods, which will yield a future flow of services. Real capital goods can be subdivided into two types- fixed capital and working capital. Fixedcapital comprised of plant, machinery, buildings and transport infrastructures, which keep their particular physical form throughout their working life. Working capital consists of stocks of raw materials, manufactured inputs and final goods.'

In simple terms, investment refers to the addition in the existing physical stock of capital in a given time period.

4.3 Types Of Investment

There are different types of investment and their classification is based on the purpose, which they are solving. In this unit, we have emphasised on the following types of the investment-

1. Autonomous and Induced investment
2. Gross and Net Investment
3. Ex-ante and ex-post investment

4.3.1 Autonomous And Induced Investment

On the basis of returns from investment, it can be classified into two categories autonomous or induced type. Induced investment is usually associated with private sector and autonomous is associated with public sector. Induced investment, as its name suggest, is induced by the profit motive, this type of investment is determined by the changes in the income i.e. induced investment increases as income increases. The functional relationshipbetween the investment and the income, indicating the induced investment in the economy can be illustrated with the help of Figure 1. On the x-axis income is measured and along with y-axis corresponding changes in the investment level are measured. II is the induced investment curve having positive slope. It is clearly shown in the figure that induced investment curve is upward sloping, implying the increase in investment level as a result of increase in the income level.

Figure 1: Induced Investment

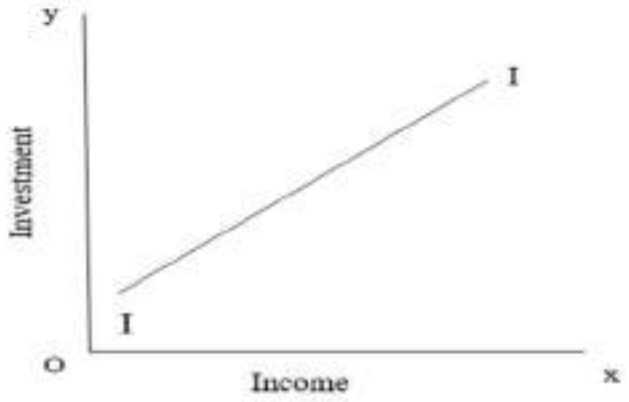


Figure 2: Autonomous Investment

Autonomous investment is not motivated by the profits. Autonomous investment is independent of the fluctuations in the output/income/profits level. Such type of investment is usually undertaken by the government- either central or state level or both. In simple words, autonomous investment is the expenditure incurred on the capital formation exclusively by the government, and which is independent of the change in income, output, rate of interest (profit rate) etc. The curve of autonomous curve is shown in the Figure 2. Figure is depicting the relationship between the investment and the income variables in the economy. II' is the autonomous investment curve. Shape of autonomous investment curve is horizontal, parallel to x-axis, representing income-inelasticity. Thus, we can say that autonomous investment is independent of economic activity. During the period of depression, government tries to boost the economic system by increasing the level of autonomous investment. Therefore, autonomous investment is one of the components of the welfare state.

4.3.2 Gross and Net Investment

Gross investment is defined as, the expenditure incurred on purchase of new fixed capital goods and on the maintenance of the existing stock of capital, in a given time period. Expenses incurred on the maintenance of the existing stock of capital are known as the replacement investment. Replacement investment is undertaken to offset the depreciation, wear and tear and obsolescence in the existing stock of capital. On the other hand, net investment can be obtained by subtracting the replacement investment from the gross investment. Thus, net investment actually shows the net addition to the

stock of capital in a given year. It is the change in net investment, which leads to changes in the income, outputand employment level in the economy. We can show the relationship between gross and net investment symbolically also-

$$I_g = I_n + I_r$$

I_g refers to the gross investment taking place in the economy in a given period; I_n refers to net investment- net addition to stock of capital and I_r shows the replacement investment in a given year. From the above equation three possibilities can be drawn regarding addition inthe productive capacity of the economy

$I_g > I_r$: If in the given period value of I_g is more than I_r, it means I_n is positive and there is actual increase in the stock of capital in that year and hence increase in the productive capacity of the economy.

$I_g < I_r$: If in the given period, value of I_r is more than I_g, then I_n would be negative for that year, indicating decline in the productive capacity of the economy on account of depreciation and obsolescence expenses.

$I_g = I_r$: When the value of gross investment is equal to the value of replacement investment, then the value of net investment is found to be zero, indicating zero addition to the productive capacity of the economy.

Therefore, net investment is an addition to the stock of capital in a given time period and the gross investment is made up of new structures and new producers' durable equipment and allowance for the wear and tear and obsolescence of the existing stock of capital. Shapiro (2001) has classified the gross investment into three components- non-residential investment (which is essentially business fixed investment); residential investment (largest component of which is single unit houses) and the inventory investment (non-fixed component, change in the business inventories).

4.3.3 Ex-Ante and Ex-Post Investment

Ex-ante investment, also known as planned or intended investment, is usually undertaken by the firms in a planned way so that pre-determined targets can be achieved. The reason behind such type of investment by the firms is that- firstly, firms

have anticipation that there will be increase in demand, so in order to earn profits, firms make planned investment. Secondly, ex-ante investment is required when the government want to achieve the goal of certain level of employment in the economy. On the other hand, ex-post investment is also termed as unplanned or unintended investment. As the name suggest, it is not planned investment, it takes place due to unexpected changes in the economic activity (demand in particular) in the economy. Simply, such type of investment is not intended or anticipated by the firms and the firms increase the stock of capital all of sudden in order to offset the fall in demand.

Check Your Progress- I

Q1. What do you understand from autonomous investment?

Ans. .....

Q2. Differentiate between gross and net investment.

Ans. .....

4.4 Investment Function

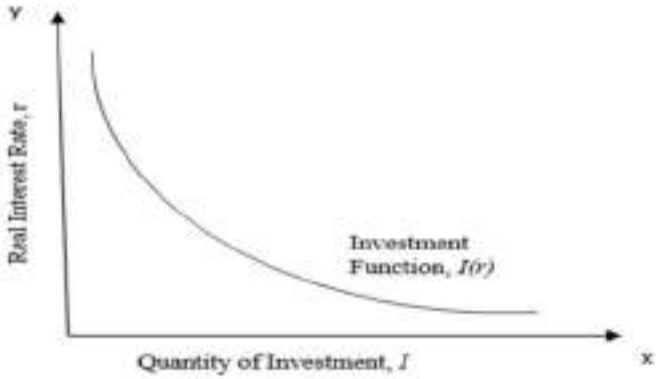
Investment function refers to the functional relationship between the level of investment and the real interest rate. In any economy volume of investment depends on therate of interest. Interest rate reflects the cost of the borrowed funds, utilised for the investment purpose. Investment in profitable manner will take place only when the returns from the investment are more than the cost of borrowing the funds. In the context of interest rate, it is essential to distinguish between two types of interest rates i.e. nominal and real interest rate. Nominal interest rate is that interest rate, which is usually reported and investors pay in order to borrow money. Real interest rate, on the other hand, is that rate of interestwhich is corrected for the effects of inflation (Mankiw, 2008). For example if in year 2020, the nominal interest was found to be 6 per cent and the inflation rate was 2.6 per cent, in that case our real interest rate would have been 3.4 per cent. From the above distinction it is clear the real interest rate is most important because it helps us in calculating the actual cost of borrowing. Therefore, real interest rate is an important determinant of the investment decision.

We can depict the investment function in the functional form as-

$$I=I(r)$$

This equation shows that investment *(I)* is function of the real rate of interest (cost of borrowing). Further this functional relationship between investment and real rate of interest can be illustrated with the help of figure. Figure 3, shows the investment function. I(r) curve shows the change in quantum of investment due to changes in the real rate of interest. Real interest rate (r) and quantity of investment is measured along y-axis and x-axis respectively.

Figure 3: Investment Function



From the figure it is clear that, slope of the investment function is negative (downward) implying inverse relationship between the interest rate and quantity of investment. When the interest rate is lower, more quantity of investment will be demanded and vice-versa. If there is change in interest rate then it will be depicted on the same investment demand curve. But if interest rate remaining the constant and there is change in other factors such as technological progress, future expectations, change in cost etc. then it will be shown by shift in investment demand curve either rightward or leftwards depending upon the direction of change in other variables.

4.5 Factors Affecting Investment Decisions

As it is known fact that capital goods are useful for long time, so producers or firms usually take the decision to invest after considering returns from the investment. Decision to invest is affected by the cost of borrowing funds and expected returns out of this particular investment. Entrepreneur's estimate of the profit or loss that will accrue

from any particular investment is based on the relationship among three components- the expected income flow from the capital good, purchase of price of the capital good and the prevailing market rate of interest. Although, there are several factors influencing the investment decision of the entrepreneur but Keynes has focused on two major determinants namely, market rate of interest and marginal efficiency of capital. Usually, entrepreneurs compare the marginal efficiency of capital with the market rate of interest; decision to investment will be taken only when the former is more than the later. If the rate of interest comes out be more than the marginal efficiency of the capital, then no investment will be undertaken by the entrepreneurs. In the following section we will elaborate the case of marginal efficiency of capital and rate of interest and their relationship with investment.

4.5.1 Marginal Efficiency of Capital (MEC)

This is an important variable in the Keynesian theory of investment. Marginal efficiency of capital is also termed as Internal Rate of Return (IRR). Keynes has defined the MEC as, that rate of discount which makes the present value of the series of annuities givenby returns expected from the capital asset during its life just equal to its supply price. So, MEC can be considered as that rate of discount which makes the discounted present value of expected income stream equal to the cost of capital. Keynes has termed the expected rate of return from capital asset as the prospective yield and cost of capital as supply price. Therefore, marginal efficiency of capital is determined by these two factors i.e. prospective yield and supply price of capital asset.

A. Prospective Yield: It actually shows the net return which is expected from the capitalasset, over its whole life. In order to find out the net return, all costs like maintenance, wear and tear expenditure, depreciation or obsolescence cost etc. are deducted from gross returns. If the expected life of the capital asset can be segregated into number of series of years, then the returns per annum can be converted into series of annuities. Here the term annuity refers to the returns of a fixed amount at uniform intervals of time. Let us assume that series of annuities is shown by-

$$R1, R2, R3, \ldots\ldots, Rn,$$

where *R1* refers to returns in 1st year, *R2* as returns in 2nd year and similarly, *Rn* means returns in the nth year of the capital asset. By adding these annual returns over the life time of capital asset, we will be having prospective yield of the asset.

B. Supply Price: Supply price is also known as replacement cost. Supply price reflects thecost of the asset, particularly of new asset not the existing one. In simple words, supply price is the purchase price of the new capital asset.

After discussing the relevance of prospective yield and supply price, we can focus on the MEC. According to Kurihara, marginal efficiency of capital can also be represented in the form of ratio of prospective to the supply price, symbolically $i=y/p$, i is the marginal efficiency of capital; y is perspective yield and p is the supply price of the capital asset. For example, cost of new capital asset to investor is Rs. 10 lakhs, further, suppose that net return from this asset over its life time is expected to be Rs. 5000 per annum. So, MEC of this capital asset can be calculated by the ratio of annual return to its supply price, i.e.

$$MEC = (5000/100000) * 100 = 5\%.$$

So the value of MEC, in this project is found to be 5 per cent, which is actually showing expected annual return on the investment of Rs 10 lakhs. From this result, it is clear that any increase or decline in supply price of asset will reduce or increase the MEC, given the value of prospective yield. So, it can be stated that MEC is having a direct relationship with the prospective yield and inverse relationship with supply price.

But in this uncertain or dynamic world, it is not so easy to calculate the expected return with so much accuracy. So, there is need to calculate the discounted value of returns with respect to future. Therefore, Keynes has considered the MEC as that rate of discount, which will equate the discounted present value of the expected income with the supply price of cost of capital asset. Accordingly, the formula for estimating the MECwill be,

$$MEC = R/1+r = C$$

In above equation, r is the rate of discount which makes the discounted value of expected returns (R) equal to the supply price of the asset (C). So, r actually shows

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the marginal efficiency of capital or internal rate of return. The value of r can be obtained from the above equation, i.e.

$$r = (R/C)-1$$

In order to illustrate, we can take an example, let us assume that an entrepreneur undertake an investment in capital asset having life of one year, which costs Rs 100 million and the expected returns from investment are Rs 125 million at the end of one year. Putting these values in the above-mentioned formula, we will get the value of MEC as,

$$MEC = r = (125/100)-1=0.25 \text{ or } 25 \text{ per cent}$$

If the same capital asset is having life of two years and expected return at the end of second year is Rs 144(it is expected to give no return in first year), then the MEC would be-

$$MEC= 144/(1+r)^2=100 = 20 \text{ per cent}$$

Similarly, if the life of the capital asset is extending to n number of years, in that caseMEC can be estimated with the help of following formula-

$$MEC = R1/(1+r)+ R2/(1+r)^2+R3/(1+r)^3.....+Rn/(1+r)^n = C$$

For any investment, value of discount rate can be estimated only if we are having theinformation regarding C and $R1, R2, R3, \ldots, Rn$ variables.

Check Your Progress- II

Q1. Define investment function.

Ans. .....

Q2. What is the meaning of supply price of capital asset?

Ans. _____

4.5.2 Marginal Efficiency of Investment (MEI)

This concept is general form of the marginal efficiency of capital. Difference between the two is, MEI is related to particular project, whereas MEC is related to particular capital asset. Marginal efficiency of investment (MEI) is that rate of discount which will make the present value of expected returns from the given investment to the cost of financing that project. Symbolically-

$$C = R1/(1+d) + R2/(1+d)^2 + R3/(1+d)^3 + \ldots R_n/(1+d)^n$$

Here C is the cost of financing the given investment project, R is the expected returns or prospective yield from the given amount of investment and d implies the rate of discount or marginal efficiency of investment, which makes the expected yields equal to the costs. Importance of this concept is that it assists us in ranking the investment projects or making the choice among different investment projects. If the value of the MEI is found to be high, then obviously ranking of that investment project would be higher and vice-versa.

Difference Between the MEC and MEI

Marginal efficiency of capital is related to the most gainful capital asset, on the contrary, marginal efficiency of investment is related a fixed amount of investment in particular project.

Marginal efficiency of capital is a stock concept, whereas marginal efficiency of investment is a flow concept.

Under marginal efficiency of capital, supply price is important variable, while under marginal efficiency of investment, cost of financing the project is determining factor.

4.5.3 Market Rate of Interest

Assessment of the decision to investment cannot be done on the basis of MEC or MEI alone. Market rate of interest also plays a determining role in the investment

decision of the firms. If the investment decision is undertaken solely on the basis of MEC, then in that case it is presumed that market rate of interest is zero and funds are easily available. But in reality,this is not the case. We have to pay a positive price for using the borrowed funds. Therefore, entrepreneur or firms considers both the MEC i.e. expected returns from the investment andthe market rate of interest i.e. cost of borrowing funds for investment purpose.

Market rate of interest is defined as the rate at which the funds are borrowed. The relationship between level of investment and rate of interest is inverse type i.e. higher rate of interest implies the higher cost of borrowing the funds and it will discourage the investments. On the other hand, if the rate of interest is lower, then it will encourage the investments in the economy.

4.6 Investment Demand Schedule

This is also known as schedule of marginal efficiency of capital. Investment demand schedule depicts a functional relationship between the marginal efficiency of capital and amount of investment/stock of capital. According to this relationship, demand for capital asset/investment is inversely related to the marginal efficiency of capital. That is MEC diminishes with the increase in investment in capital assets and vice-versa. Causes for such diminishing nature of MEC are as- firstly, due to increase in the investment in capital asset during a given period, prospective yields will decline. The reason being that more assets are produced and ultimately, they will give competition to each other in order to meet the demand for product, subsequently, prospective returns from the investment will decline. Secondly, supply price of capital asset will rise as more capital assets are produced. Thus, we can say that MEC diminishes with an increase in investment level, either due to falling prospective yield or rising supply price of the capital asset.

Investment demand schedule can be illustrated with the help of an example, described in the following Table 1. Table depicts the relationship between stock of capital and marginal efficiency of capital. We can observe from the table that when the investment was of Rs 20 millions, MEC was the highest. As the quantity of investment increased to 100 millions ,marginal efficiency of capital reduced to 7 per cent only.

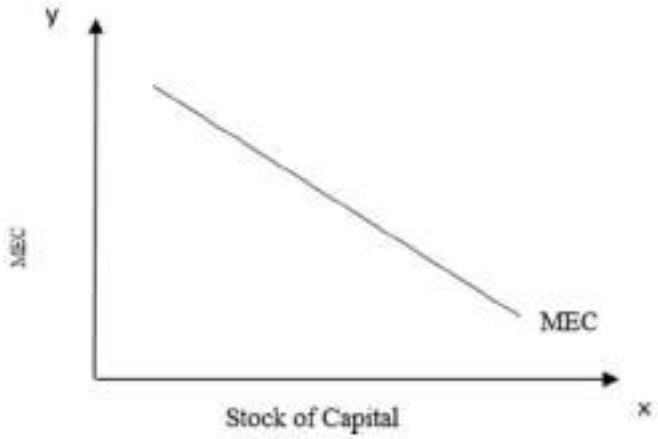
Table 1: Marginal Efficiency of Capital and Quantity of Investment

Investment (in Million Rs.)	Marginal Efficiency of Capital (%)
20	25
40	18
60	13
80	10
100	7

Investment demand schedule can be illustrated with the help of a diagram, as shown in Figure

4. On vertical axis MEC is measured and on horizontal axis stock of capital is measured.

Figure 4: Investment Demand Schedule



It is clearly depicted in the diagram that investment demand schedule is downward sloping showing inverse relationship between MEC and stock of capital. Investment demand schedule can shift rightwards or leftwards depending upon the changes in MEC. If at the given market rate of interest, there is expectation that expected returns on investment will increase then subsequently, MEC schedule will shifts rightwards. On the other hand, in times of depression, due to lesser business confidence, there are expectations of falling expected returns on investments and hence MEC schedule will shift leftwards.

4.7 Relationship Between MEC, Rate of Interest and Investment

From the above discussion, it is clear that marginal efficiency of capital and marketrate of interest are two determining factors in investment decision. Interest rate shows the cost of borrowing the funds, which is determined by the demand for and supply of funds. Marginal efficiency of capital is the anticipated rate of profitability on the investment/capital asset. For taking a wise decision i.e., whether to undertake the investment in new project ornot, an entrepreneur usually compares the value of MEC with rate of interest. Investor will be interested in undertaking the investment in new capital stocks as long as the value of MEC is more than market rate of interest, as it indicates the excess of expected returns over the costof borrowing the funds. If the value of MEC is found to be equal to market rate of interest then investor can be neutral in this situation. If the value of MEC is less than interest rate then no investment will take place because cost of borrowing funds is more than expected return from this particular investment. This relationship between MEC, rate of interest and investment can be depicted with the help of an illustration, shown in Table 2.

Table 2: Relationship Between MEC And Rate of Interest and Investment Decision

Supply Price(C) (in Rs)	Expected Annual Returns (R) (in Rs)	MEC(r) (in %)	Rate of Interest (i) (in %)	Investment Decision
25000	1000	4	4	Neutral
25000	1000	5	4	Profitable to undertake investment
25000	1000	2	4	Unfavourable

From the above table it is clear that supply price of capital asset is Rs. 25,000, having annual return of Rs. 1,000. Now the decision of the investor will depend on the cost of borrowing the funds and the corresponding returns on that investment. In the three different scenarios, investment seems to be profitable when the MEC>i, i.e. in second case where the MEC is 5per cent and rate of interest is 4 per cent, clearly indicating

the positive difference.

4.8 Decision Rule for the Entrepreneur

After estimating the marginal efficiency of capital and market rate of interest, entrepreneur can take decision about the investment. There are rules of thumb in this context-

A. If value of MEC>i, then investment project is acceptable to the entrepreneur
B. If value of MEC=i, then the project is acceptable to entrepreneur only on the non-profitbasis.
C. If value of MEC<i, then the investment project is rejected by the entrepreneur

Check Your Progress- III

Q1. Define Marginal Efficiency of Capital.

Ans. .....

Q2. Explain market rate of interest.

Ans. .....

Q2. What are the different rules of thumb for investment decision?

Ans. .....

4.9 Summary

Investment refers to the addition in the existing physical stock of capital in a given time period. Investment can be classified in to different types, like- gross and net investment, autonomous and induced investment, ex-ante and ex-post investment. Gross investment is sum of net investment and replacement investment, whereas net investment refers to the net addition in the existing stock of capital. Autonomous investment undertaken usually by government on non-profit considerations, whereas, induced investment is intended by the profit motive. There are two main determinants which affect the investment decision- marginal efficiency of capital and market rate of interest. MEC is that rate of discount which makes the discounted present value of

expected returns equal to the cost of capital. Investment decision will be undertaken when the marginal efficiency of capital is more than the market rate of interest.

4.10 Questions For Practice

A. Short Answer Type Questions

Q1. What is an investment function?

Q2. Differentiate between induced and autonomous investment.

Q3. Explain the followings:

a) Gross and net investment

b) Ex-ante and Ex-post investment

Q4. Explain Marginal Efficiency of Capital.

Q5. Define Marginal Efficiency of Investment.

Q6. Difference between the MEC and MEI.

Q7. Explain the decision rules of the entrepreneur.

B. Long Answer Type Questions

Q1. Elaborate the factors affecting investment decision

Q2. What do you mean by investment? Briefly explain its types.

Q3. Explain MEC, also discuss the relationship between MEC, rate of interest andinvestment decision.

4.11 Suggested Readings

- Abel, A.B.; Bernanke, B.S. & Croushore, D. (2014). Macroeconomics. New York:Pearson Publishers, 8th edition.
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M.A(ECONOMICS)

SEMESTER –II COURSE:

MACRO ECONOMICS

UNIT4B: STATICS AND DYNAMIC MULTIPLIER AND ACCELERATION THEORY

STRUCTURE

4.0 Learning Objectives

After reading this unit, learner will be able to:

- Define the concept of multiplier
- Differentiate between static and dynamic multiplier
- Derive the working of multiplier
- Interpret the accelerator principle
- Illustrate the operation of accelerator principle

4.1 Introduction

In general, equilibrium level of income and output is determined by the aggregate spending level in the economy. Any change in aggregate spending will consequently affect the income and output level and this will further result in either unemployment or full employment depending upon the direction of change. Increase in the aggregate spending or consumption expenditure leads to multiple times increase in the income and output level and vice-versa. Ratio of this change in income and output to the change in consumption expenditure is known as the multiplier. So, the analysis of multiplier mechanism helps us in understanding, the change in circular flow of economic activity due to change in any component of aggregate spending/demand (consumption, investment, government spending or net exports).

Concept of multiplier was first embraced to macroeconomics analysis in the 1930s, when Keynes used it in his analysis of income determination for explaining the Great Depression of 1930s. However, this concept was introduced by FA Kahn in early 1930s and later on refined by Keynes. Kahn has focused on the employment multiplier, whereas Keynes has emphasised on investment multiplier. Employment multiplier indicates that for any increase in employment, there will be multiple times increase in aggregate employment level. Similarly, investment multiplier refers to manifold increase in income/output/employment due to initial increase in investment level in economy. Another concept related to multiplieris the accelerator, which is opposite to multiplier. Accelerator refers to the change in investment level due to change in aggregate spending/consumption expenditure.

4.2 Basic Concepts of Multiplier

In Keynesian approach to income/output determination, multiplier occupies an important position. Not only this, it is an important variable in the business cycle

theories too. Keynes believed that in any economy employment relies on the effective demand, which is, further determined by the consumption and investment expenditure. Since, consumption remains constant in the short-run, it is the investment which led to change in income/output level in economy. According to Keynes, it is the initial increase in the investment which plays a significant role in income determination process. So, this relationship in investment and change in income or employment or output can be expressed in terms of multiplier.

An injection to circular flow of economic activity leads to an increment in national income, this increment is usually larger than the extent of the injection. The ratio of incremental increase in income to the quantum of fresh injection is referred to as multiplier. The injection to circular flow of economic activity can take any form, such as- investment, government spending and exports. These forms of injection, results in upward shifts in the national income/output. For example, if the economy is injected with the investment of Rs.1 crore, consequently national income of the economy boost up by Rs.3 crores. In this illustration income has increased by three times, simply implying that increase in investment has resulted in multiple times increase in the national income/output level in the economy.

We are concerned with the autonomous investment expenditure incurred by the government which will take the form of injection to circular flow of economic activity. In short, investment multiplier can be described as the ratio of change in income to the change in autonomous investment expenditure.

4.3 Multiplier Theorem: Derivation of Investment Multiplier

Investment multiplier can be derived with the help of aggregate spending function in the two-sector economy. We know that in the equilibrium position, aggregate spending function is composed of consumption function and investment function. In simple terms, income is either consumed or saved (=investments under equilibrium), accordingly the income expenditure is sum of consumption expenditure and investment expenditure in the economy. In algebraic form, we can define the above relationship as-

$$Y=C+I \qquad \ldots(1)$$

Where, Y, is initial income level; C, is the consumption expenditure and I, is the autonomousinvestment expenditure. Equation 1, shows the initial equilibrium in the economy.

Suppose that investment expenditure increased in the economy from I to ΔI and thisleads to increase in the Y and C as well. So the 1 equation becomes,

$$\Delta Y = \Delta C + \Delta I \qquad \ldots(2)$$

ΔY, shows the change in income; ΔC, change in consumption and ΔI, change in investmentspending. Rearranging the above equation, we will get-

$$I = \Delta C/\Delta Y + \Delta I/\Delta Y \qquad \ldots(3)$$

Here the ratio of change in consumption expenditure (ΔC) due to change in income level (ΔY)is known as the marginal propensity to consume (MPC). Using this identity in equation 3, we will obtain-

$$I = MPC + \Delta I/\Delta Y \qquad \ldots(4)$$

$$\Delta I/\Delta Y = I - MPC \qquad \ldots(5)$$

Taking reciprocal of equation 5 on both sides,

$$\Delta Y/\Delta I = I/(I - MPC) \qquad \ldots(6)$$

By putting $\Delta Y/\Delta I = k$, which is actually our multiplier's coefficient, so equation 6 becomes-

$$k = I/(I - MPC) \qquad \ldots(7)$$

Since, we know that $MPC + MPS = I$(sum or marginal propensity to save and marginal propensity to save is equal to unity), so $I - MPC = MPS$, by using this identity in above equation,

$$k = I/MPS \qquad \ldots(8)$$

Finally, value of multiplier coefficient can be determined either with the help of MPC or MPS. Equation 7 and 8 are describing the value of multiplier and also the relationship between k and MPC and k and MPS. Following are the major results of this functionalrelationship-

1) As the value of MPC varies between zero and unity, similarly, the value of

multiplierlies between 1 and ∞.

2) There is a positive relationship between MPC and *k*. If the value of MPC ishigher/lower, value of multiplier will be also higher/lower.
3) There is negative relationship between MPS and k. If the value of MPS is higher, thenvalue of multiplier (*k*) will be lower and vice-versa.

For example, if the value of MPC= 1, then putting this in above formula,

$$k = 1/(1-MPC) = 1/(1-1) = 1/0 = \infty$$

Similarly if the value of MPC=0.5, then value of multiplier will be,

$$k = 1/(1-0.5) = 1/0.5 = 2$$

On the other hand, if the value of MPS= 0.3, multiplier will be equal to-

$$k = 1/MPS = 1/0.3 = 3.33$$

for the value of MPS= 0.7, value of multiplier would be, $k = 1.43$.

4.4 Operation of Multiplier or Working of Multiplier

As discussed earlier, multiplier is the process through which income gets multiplied as an outcome of initial investment in the economy. How the operation of multiplier goes on? can be well explained with the help of working of multiplier. Let us assume that economy is in the position of equilibrium and government undertake an autonomous investment of Rs.1000 crores. So, in the first period/round, this will raise the income by Rs. 1000 crores in the economy, particularly to those engaged in the investment goods sector. Further, assume that marginal propensity to consume is worked out to be 0.8, which implies that out of every increase in income, 80 per cent is spent on consumer goods. Accordingly, 80 per cent of Rs. 1000 i.e. Rs. 800 crores, will be our consumption expenditure in the first round. This expenditure on consumer goods will form the income to consumer goods producers. This idea is based on the assumption that one person's consumption expenditure is forming another person's income. Therefore, those who received Rs 800 crores as income in second round, they will spend 80 per cent of this income on the consumption activity, i.e. Rs. 640 crores as consumption expenditure in this period. Similarly in third round, income of Rs 640 crores will be generated. Important point to mention here is that, this increases

in income in each successive round will goes on declining and this process will continue till additional increase in income tends to zero. Ultimately, this process will end up when additional income becomes equal to 5000 (k=1/(1-0.8)=5, which means income will increase five times of initial increment in investment).

Illustration of working of multiplier is depicted in Table 1, which clearly shows the process of income generation by an additional investment of Rs. 1000 crores in the system.

From table no.1 it is clear that injection in the circular flow of income will leads to multiple times increase in the income of the economy. It is generally perceived that it willtake around two-three months' time to actualise the expenditure incurred in each period. This gap in realisation of consumption expenditure is termed as the multiplier period or propagation period.

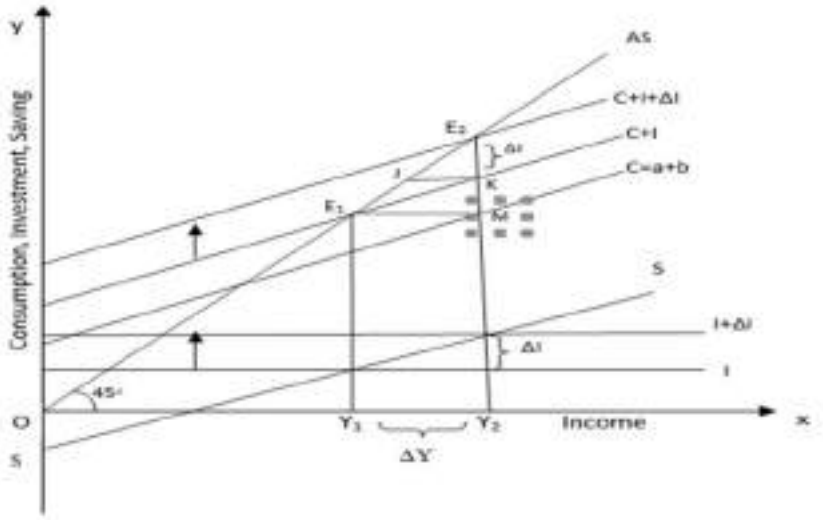
Table 1: Working of Multiplier

Period/Rounds	Change in investment (ΔI)	Income Generation or Change in income (ΔY)	Change in Consumption Expenditure (ΔC)(MPC=0.8)
1	1000	1000	800
2	--	800	640
3	--	640	512
4	--	512	409.6
5	--	409.6	327.68
.....	--	....	....
.....	--	....	....
.....	--	....	....
Last round	--	0	....
Total	1000	5000	4000

So, multiplier period can be defined as the mean/average time which will be involved in conversion of income-consumption-income, i.e. when income received is converted into consumption and this consumption expenditure becomes someone else's income. Shift from one round to another round, will leads to gradual fall in the consecutive additions in the income.

The working of multiplier is illustrated graphically in the figure 1. Consumption expenditure and savings are measured along y-axis and income/output measured along x-axis. It is assumed that economy is in equilibrium and it is indicated by consumption function $C=a+bY$ and initial investment given by the line I, which is parallel to horizontal axis. Further, with the given consumption function and investment level, aggregate spending/demand is indicated by $C+I$. Equilibrium level of income is determined at $Y1$, where aggregate demand ($C+I$) curve intersects with the aggregate supply curve (AS). Aggregate supply is equal to addition of consumption expenditure and savings ($AS=C+S$)

Figure 1: Working of Multiplier



With the injection of autonomous investment in the system, original investment curve) shifted upward to $I+\Delta I$ curve. This upward shift in the investment schedule results in shift in aggregate demand curve from $C+I$ to $C+I+\Delta I$. The new AD (Aggregate

Demand) demand curve intersects the *AS* (Aggregate Supply) curve at point *E2*, hence equilibrium level ofincome shifts rightwards from *Y1* point to *Y2* point. So, increase in national income (ΔY) canbe expressed as-

$$\Delta Y = Y2 - Y1 = Y1Y2 = E1M$$

This increment in income is the outcome of change in investment (ΔI). If we look at the figure, we can notice that increase in income is more than the increase in investment level

i.e. $\Delta Y > \Delta I$, which implies that there will be multiple times increase in the income due toinitial injection of investment. So, the multiplier can be expressed as the ratio of change in income due to change in investment level, algebraically,

$m = \Delta Y/\Delta I$, here m is the investment multiplier.

Check Your Progress- I

Q1. If the value of MPC=0.5, what would be value of multiplier.

Ans._____

Q2. What is the relationship between multiplier and MPC and MPS?

Ans._____

4.5 Static and Dynamic Multiplier

On the basis of time lag involved in consumption function, multiplier is considered as static and dynamic. Under static multiplier, no time lag is involved, whereas, dynamic multiplier considers the time involved in consumption response.

4.5.1 Static Multiplier

Actually, static multiplier is independent of time, this is the reason that static multiplier is also known as comparative static multiplier, simultaneous multiplier, logical multiplier, timeless multiplier and instant multiplier. According to static multiplier, if there is change in the investment in the economy, then it will cause immediate change in the income levels, means no time lag is involved in response. In

simple terms, static multiplier entails that change in investment results in instantaneous change in income. For example, if government injected the investment of Re 1 in the system, it will instantly increase the society's income by multiple of Re 1. Working of static multiplier is explained in the earlier section and the illustration shown in Table 1 is an example of static multiplier.

In real world, we are not dealing with timeless economic activities, we are living in dynamic world. So, time lag is involved in initial autonomous investment and final change in income, moreover, series of successive rounds happen in order to complete the working of multiplier. Therefore, limitation of static multiplier is that it does not consider the course of time involved in completion of the multiplier process.

4.5.2 Dynamic Multiplier

It is also termed as period multiplier or sequence multiplier. In contrary to static multiplier, dynamic multiplier, considers the time lag involved in working of multiplier. According to dynamic multiplier, change in investment will not cause immediate/instant change in income of the economy rather it is a gradual process through which the income will change. So, this multiplier is fundamentally a stage-by stage calculation of change in income due to change in initial investment and this process will continue till the full potential of multiplier is comprehended.

Let us assume that initially, our economy is in equilibrium position. Government injected the system with the autonomous investment of Rs 1000 crores. Suppose further that this investment is undertaken on the purchase of capital goods and labour, which leads to increment in income of capital goods producers and labourers by Rs 1000 crores in the period 1, denoting this by $\Delta Y1$. If the marginal propensity to consume is found to be 0.8 of the society, then it implies that who received this income (Rs 1000 crores), will make consumption expenditure of Rs 800 crores. Consequently, in next period, income of the consumer goods producers rises by Rs 800 crores, denoting it as $\Delta Y2$. Further, 80 per cent of this Rs 800 crores i.e. Rs 640 crores, will be increment in income in period 3, denoted by $\Delta Y3$. This procedure will go on until the increment in income and consumption expenditure is reduced to zero. This illustration is pre-assuming that there is one period

lag in the change in consumption expenditure due to change in income of the economy, i.e. change inconsumption expenditure to be incurred in t time period is the function of change in incomein t-1 time period.

This exercise of dynamic multiplier can be summed up in the following expression-

$$\Delta Y = \Delta Y1 + \Delta Y2 + \Delta Y3 + \Delta Y4 + \ldots\ldots\ldots\ldots + \Delta Y_{n-1} \quad \ldots(1)$$

So the aggregate change in income (ΔY) due to initial investment of Rs 1000 crores, will be-

$$\Delta Y = 1000 + 1000(0.8)^1 + 1000(0.8)^2 + 1000(0.8)^3 + 1000(0.8)^4 + .+ 100(0.8)^{n-1}$$

$$\Delta Y = 1000 + 800 + 640 + 512 + 327.7 + \ldots\ldots + \rightarrow 0 = 5000$$

In order to match this aggregate increase in income, we can compute the value of multiplier as, ratio of proportionate change in income to proportionate change in investmenti.e.

$$\Delta Y/\Delta I = 5000/1000 = 5$$

Since in period 1, increase in income is equal to the autonomous investment, so it can be written like this, $\Delta Y1 = \Delta I$ and dynamic multiplier can be generalised as-

$$\Delta Y = \Delta I + \Delta I(c)^1 + \Delta I(c)^2 + \Delta I(c)^3 + \Delta I(c)^4 + \ldots\ldots\ldots + \Delta I(c)^{n-1} \quad \ldots(2)$$

$$\Delta Y = \Delta I(1 + c^1 + c^2 + c^3 + c^4 + \ldots\ldots\ldots + c^{n-1}) \quad \ldots(3)$$

In equation 3, c is the marginal propensity to consume, replacing the sum of an infinite geometric series by $1/(1-c)$, we will get-

$$\Delta Y = \Delta I(1/(1-c)) \quad \ldots(4)$$

By putting the values of ΔI = Rs 1000 crores and c= 0.8, we get

$$\Delta Y = 1000 * (1/(1-0.8)) = 1000*(1/0.2) = 1000*5 = Rs\ 5000\ crores$$

From equation 4, it is clear that cumulative change in aggregate income is equal to a multiple of increase in autonomous investment expenditure. The term $1/(1-c)$, is termed as multiplier, whereas equation 2, implies the working of dynamic multiplier in the economy.

4.6 Limitations of Multiplier

Although, it has been realised that investment multiplier plays a determining role in economy and helps in bringing about desired results in income/output/employment. Still, it is not free from limitations. It has been seen that in order to achieve the target growth rate, nation just need to measure the exact requirement of investment, given the value of MPC. Butin reality, we can't compute the quantum of investment required to push the economy, with so much exactness. So, the limitations of working of multiplier can be classified into three main categories-

4.6.1 Leakages from income stream

4.6.2 Non-availability of consumer goods and services

4.6.3 Full employment situation

4.6.1 Leakages From Income Stream or Leakages in the Working of Multiplier

It is clear from the above discussion that value of multiplier is neither one nor infinity. We never spent the whole amount of increase in income and never saved the whole increased portion of income. Reason behind such behaviour is that there are many leakages under income stream, which reduced the speed of income propagation process and hence the working of multiplier gets affected. Moreover, under theory of multiplier it is assumed that certain portion of increased income will be spent on the consumer and capital goods. But in reality, society tends to spend on the various non-consumption and non-capital goods. These types of expenses are termed as leakages from income stream in the process of multiplier. These leakages include, like savings, debt cancellation, imports, hoardings, purchase of existing wealth etc. Detailed discussion on different types of leakages from income stream follows as-

1) **Payment of Past Debts:** If the increase in income is used for payment of loans purpose, then it will lead to fall in marginal propensity to consume. This decline in MPC, further, reduces the value of multiplier.

2) **Savings and Hoardings:** Savings are considered as an important leakage in the multiplier process. As we know that there is inverse relationship between marginal propensity to save and value of multiplier, therefore, more the share of additional income goes for savings; less effective will be the multiplier. On the other hand, activity of hoarding i.e. high liquidity preferences also restricts the value of multiplier.

3) **Purchase of Existing Wealth:** This is also an important type of leakage in the workingof multiplier. If the society have a tendency to spend the increased portion of their income on the purchase of existing stock of wealth and property such as real estate, second-hand consumer durables, purchase of shares, bonds, stocks and securities etc. then it will inhibit the process of income propagation because such types of expenses never come back in consumption stream, hence affecting the working of multiplier.

4) **Imports:** If the economy is open economy, then inflow of foreign products and services, negatively affect income propagation process of the economy. This is so because, income spent on the imported goods and services will flows out of the country and having the lesser chances to come back to income stream of the nation.

4.6.2 Non-Availability of Consumer Goods and Services

The theory of multiplier is based on the pre-assumption that there is efficient and instantaneous supply of consumer goods and services in the system. But in practice, this is not the case. Supply of consumer goods and services does not respond instantaneously to the increased demand, time lag is always there. So, time dimension involved in adjustment process has been ignored. In course of lag period, increased income generates additional demand for goods and services which in turn generates the demand pressure and thus resulting in rise in prices (inflation). Theses rise in prices reduce the consumption expenditurein real terms, which restraint the multiplier effect.

4.6.3 Full Employment

Working of multiplier is not compatible with full employment. If the economy is in full employment or close to full employment situation, then further

increase in production capacity is not possible. Thus, increase in autonomous investment will only result in inflation, not the generation of additional real income in the economy.

4.7 Multiplier And LDCs: Keynes' MPC And Multiplier Paradox

As per the multiplier theory, higher the value of MPC, more effective will be the multiplier and vice-versa. Further, lower the income, higher proportion will be spent (higher

MPC). In context of less developed countries (LDCs), it was found that income, saving and investment rates were low as compared to developed countries scenario. In the LDCs, usually the saving rates are lower, which implies relatively higher MPC. It is perceived under the multiplier theory that higher the value of MPC, higher will be the size of multiplier. Therefore, in LDCs, higher value of MPC should accommodate higher values of multiplier and hence given quantum of autonomous investment should result in higher employment and output and consequently high economic growth rates. But in practice, this whole scenario does not hold true in case of less developed countries. Generally, in LDCs value of multiplier and rate of economic growth are lower, despite the larger size of MPC. This shows a paradoxical situation in context of multiplier theory and is termed as Keynes' MPC and multiplier paradox. So, we can say that Keynesian investment multiplier is not compatible with the less developed countries.

The reasons behind, non-applicability of multiplier principle to less developed countries are the assumption taken by this principle. These assumptions are not fulfilled by the LDCs.

Assumptions:

1) High level of industrial development in the economy
2) Existence of involuntary unemployment
3) Existence of excess productive capacity
4) Price-elastic supply of goods and services
5) Absence of dynamic changes i.e. technological progress, capital formation andaccumulation, factor supplies etc. remains constant

6) Based on the closed economy model

7) Instantaneous changes in consumption expenditure as a result of change in income

Many of the above-mentioned assumptions do not hold in case of LDCs. According to V.K.R.V. Rao (1952), there are certain other reasons (along with these assumptions) behind this inapplicability of multiplier theory to LDCs. Other reasons include, the circumstances prevailing under LDCs, such as- pre-dominancy of agriculture sector, substantial portion of disguised unemployment, shortage of capital, outdated technology, existence of non-monetised sector (barter system) and production for self-consumption purpose. Due to these features of LDCs, multiplier does not work effectively in LDCs.

Check Your Progress- II

Q1. What do you mean by static multiplier?

Ans.....

Q2. What are the leakages in the process of multiplier?

Ans.....

4.8 Acceleration Theory and Its Working

In the previous sections related to principle of multiplier, we have seen that investment is treated as the autonomous and most important variable in income determination process. However, the post-Keynesian refinements in the investment theory has realised the interdependency of the investment and income on each other. That is level of investment relies on the national income and national income in turn depends on the level of investment. This interdependent correlation among income and investment is explained by super multiplier and accelerator principle. We are here concerned mainly with the acceleration principle, popularly known as accelerator theory of investment. Principle of acceleration was developed by A. Aftalion (1909), Hawtrey (1913) and C.F. Bikerdike (1914) and J.M. Clark (1917). The main idea of this theory is that accelerator is related to quantum of desired or optimum stock of capital rather than

change in autonomous investment. So, the basic relationship with which we are concerned, i.e. relationship between change in level of output and volume of investment spending, is known as the acceleration principle. As we know that ratio of capital stock to output is termed as capital-output ratio, this ratio is known as accelerator under this theory.

4.9 Assumptions of Acceleration Theory

This theory is based on some assumptions, which are as follows-

1) Capital to output ratio or accelerator coefficient is assumed to remain fixed. This fixedratio, further, implies that there is absence of technological progress in the economy.
2) Capital goods in the economy are fully utilised.
3) Absence of excess capacity.
4) There is no upper limit on investment, which implies that supply function is perfectlyelastic.
5) There is absence of time lag between demand and production, i.e. instantaneousadjustment in demand for and supply of product.
6) Net investment will increase instantaneously with the increase in output in theeconomy.
7) Supply of funds is elastic i.e. no financial restriction on availability of funds.

4.10 Working of Acceleration Principle

According to acceleration principle, investment enlarges the stock of capital as more capital is required to produce more output. Increase in output can be brought with the help of technological advancements also, but for simplifications we have assumed that capital-output ratio remains constant in the system.

Let us assume that the output of firms in the economy is measured by Y and the stockof capital required to produce it be measured by K. Capital-output ratio (K/Y) is indicated by v. So, the formal relationship between capital stock and the output can be articulated as-

$$K = vY$$

Or

$$v = K/Y$$

Here value of v is assumed to be more than unity i.e. $v>1$.

With fixed capital-output ratio over time, the desired stock of capital will change over successive time periods only with the changes in output levels. Considering the some particular time frame as t, preceding time periods as t-1 and t-2 and subsequent time periods as t+1 and t+2; according to this we can assume that in period t-1, desired stock of capital was required to produce the particular level of output in period t-1. Symbolically,

$$K_{t-1} = v\, Y_{t-1} \qquad \ldots(1)$$

When there is increase in output level from Y_{t-1} to Y_t, it will lead to change in desired stock ofcapital also, from K_{t-1} to K_t, i.e.

$$K_t = v\, Y_t \qquad \ldots(2)$$

If there is rise in desired stock of capital, then it is measured by $K_t - K_{t-1}$. In order to raise the stock of capital, net investment expenditure (I_t) is required, which is equal to the difference between the capital stock in t and t-1 time period. In equation terms-

$$I_t = K_t - K_{t-1} \qquad \ldots(3)$$

By using 1st and 2nd equations in 3rd equation, net investment can be expressed as-

$$I_t = vY_t - vY_{t-1} = v(Y_t - Y_{t-1}) \qquad \ldots(4)$$

This equation implies that net investment during t period relies on the change in output from t-1 to t period multiplied by capital-output ratio v. Possible outcomes related to net investment-

A. if $Y_t > Y_{t-1}$, then net investment would be positive in period t;
B. if $Y_t < Y_{t-1}$, then net investment turns out to be negative or disinvestment has taken place in the economy in t period and
C. if $Y_t = Y_{t-1}$, then there will be zero net investment in the economy. In simple terms, given the value of v, any change in output level from t-1 to t period is responsible for the change in net investment, which could be either positive or negative.

In order to check out the importance of gross investment under the acceleration principle, we can make addition of replacement investment in the equation system. As we have learned in the previous unit that gross investment is equal to the sum of net and replacement investment, thereby adding the replacement investment component in both sidesof the 4th equation, we get,

$$I_t+R_t = v(Y_t - Y_{t-1}) + R_t \qquad \ldots(5)$$

Since gross investment (I_{gt}, gross investment in t period in economy.) is sum of net and replacement investment, so equation 5 can be represented as-

$$I_{gt} = v(Y_t - Y_{t-1}) + R_t \qquad \ldots(6)$$

This is the final equal of the accelerator theory, here v is the accelerator coefficient. It is clear from the above equation that value of accelerator coefficient, v, depends on the output level also along with the capital-output ratio. Further, if the value of v is found to be more than one, then the required increase in capital stock must overweigh the increase in output.

Working of the acceleration theory can be better understood with the help of numerical example exhibited in Table 2. This example is based on certain assumptions, i.e. capital-output ratio is considered as two and rate of depreciation or replacement investment is considered as five per cent of the initial capital stock (in period 1).

Table 2: Working of the Acceleration Principle, With N=2 And RT=5%

Period	Output	Required/Desired Capital Stock	Actual Capital Stock	Replacement Investment	Net Investment	Gross Investment
1	200	400	400	20	0	20
2	210	420	420	20	20	40
3	220	440	440	20	20	40
4	250	500	500	20	60	80
5	270	540	540	20	40	60
6	260	520	520	20	-20	0
7	256	512	512	20	-8	12
8	250	500	500	20	-12	8

9	230	460	460	20	-40	20
10	200	400	400	20	-60	40

In this table column 1 refers to the time periods under consideration, column 2 provides us the information regarding output level in the economy in each period. Since capital to output ratio is taken as two, so we can estimate the required stock of capital by simply multiplying the output level with two, which is shown in column 3. Actual stock of capital is given in column 4 and in column 5, replacement investment is given, which is assumed to be five per cent of initial stock of capital. In our example, stock of capital in first period is given as Rs 400 crores, so replacement investment is Rs 20 crores (5 per cent of 400). Further, column 6 deals with net investment, which is estimated by subtracting the actual capital stock in t-1 period from actual capital stock in t period. In last column 7, gross investment is computed by simply adding column 5 and 6. The acceleration or deceleration in net investment can be seen from column 6. Upto period 5, there is acceleration in net investment, after that process of deceleration has started.

On the basis of above illustration, we can measure the change in output in period 1 and 2, i.e. 10 units increment in output level has been registered. Provided the value of v as two, gross investment required in order to achieve this increment of 10 units in output level can be estimated as-

$$I_{gt} = v(Y_t - Y_{t-1})$$

$$I_{gt} = 2(210-200) = 2*10 = Rs.\ 20\ crores.$$

Similar calculation can be worked for other periods as well.

4.11 Limitations Or Criticism of The Accelerator Theory

Accelerator theory suffers from serious defects and these defects are mainly based on the rigid assumptions taken by this theory. Some of the points of criticism are as follows-

1) **Constancy of Capital-Output Ratio:** Acceleration principle is based on fixed value of capital-output ratio. Under the dynamic and uncertain situations, we can't retain this constancy. Moreover, in reality this ratio is found to be

determined by changes in technology, expectations, uncertainty, changes in composition of output etc. factors.

2) **Absence of Excess Capacity:** It has been assumed that there is inexistence of excess capacity in consumer goods industries, which is totally wrong. In practice, firms always maintain reserve capacity in order to capture the sudden increase in demand. In such circumstances, acceleration principle becomes less effective or ineffective.
3) **Financial Limitation:** According to this theory there is no ceiling on availability of funds. But in practice, there are financial limitations on meeting the additional capital requirements.
4) **Time Lag:** It has been assumed that there is no time lag between demand and production process. In reality, existence of discontinuities and indivisibilities in the production function hampers the production process and prevents smooth and instant adjustments.
5) **Profitability Considerations:** According to this principle major objective of firms isto maximise their profits. Business firms do not always focus on profit maximisation goal, there are many other goals along with this goal. Such as, sales maximisation goal, securing certain market share, building reputation etc.
6) **Lacks Practical Utility:** This principle lacks practical utility. According to this principle, for acceleration coefficient to work in effective manner, full capacity is a pre-condition. Statistical evidences have shown that full capacity rarely exists.

Although, this theory is less practicable, still it can be used along with other factors by economists to explain the oscillations, which are observed in investment in the economy from time to time.

Check Your Progress- III

Q1. Define Accelerator

Ans.....

Q2. Discuss any two limitations of the acceleration theory.

Ans. .....

4.12 Summary

Investment multiplier can be described as the ratio of change in income to the change in autonomous investment expenditure. The value of multiplier depends upon the marginal propensity to consume and save. On the basis of time dimension, distinction is made between static and dynamic multiplier. Further, according to static multiplier, if there is change in the investment in the economy, then it will cause immediate change in the income levels, means no time lag is involved in response. According to dynamic multiplier, change in investment will not cause immediate or instant change in income of the economy rather it is a gradual process through which the income will change. Accelerator is related to quantum of desired or optimum stock of capital rather than change in autonomous investment. Relationship between change in level of output and volume of investment spending, is known as the acceleration principle. Theory of acceleration principle is criticised on the basis of rigid nature of its assumptions.

4.13 Questions for Practice

A. Short Answer Type Questions

Q1.Describe the meaning of investment multiplier.

Q2. Define dynamic multiplier with the help of example

Q3.Explain the concept of MPC and multiplier paradox.

Q4. Give assumptions of acceleration theory.

Q5.Discuss the leakages in the working of multiplier

Q6. Briefly explain the working of acceleration principle

B. Long Answer Type Questions

Q1. What do you mean by multiplier? Derive investment multiplier.

Q2. Differentiate static and dynamic multiplier and discuss in detail the working of multiplier.

Q3.Explain the limitations of multiplier in detail.

Q4.Critically examine the theory of acceleration.

4.14 Suggested Readings

Abel, A.B.; Bernanke, B.S. & Croushore, D. (2014). Macroeconomics. New York:Pearson Publishers, 8th edition.

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M.A (ECONOMICS)

SEMESTER –II

COURSE: MACRO ECONOMICS

UNIT 5: BUSINESS CYCLES AND INFLATION: MEANING, PHASES AND TYPES

STRUCTURE

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5.0 Learning Objectives

After reading this unit, learner will be able to:

- Know about the meaning of the business cycles
- Describe the different phases of business cycles
- Define the concept of the inflation
- Know about the different types of inflation
- Identify the causes and the effects of inflation

5.1 Introduction

This unit throws light on the concepts and types of business cycles as well as inflation. Most of the classical economic theories are based on the assumption that the economy is always in equilibrium. Any deviation from that is only for the short period and in the long run, the economy automatically reaches the full employment level, where the supply creates its own demand (Say, 1834) and aggregate demand is equal to aggregate supply. These theories also assume that the savings are passive in nature which means that they adjust themselves according to the demand for investment. Hence, there is no need of government intervention. But in real life, we find gaps in aggregate demand and aggregate supply along with the gaps in savings and investment. If government does not intervene, then these gaps continue to exist for a long period. This leads to inflationary or deflationary tendencies in to the economy. Keynes (1936), too, has pointed out that underemployment equilibrium is the general condition of the economy. He tried to show the gaps in aggregate demand and supply through his psychological law of consumption. He said that a marginal propensity to consume being less than one, causes the turning points in any business cycle. Schumpeter (1961) says that the innovations are the causes of cyclical fluctuations in the economy while according to Samuelson (1948), the business cycles are caused by the interaction of accelerator and the multiplier. All these theoreticians' emphasis that any market economy goes through several fluctuations. Therefore, it is important to know about the concept, types and causes of business cycles in general and inflation, in particular.

5.2 Meaning and Basic Concepts of Business Cycles

Business cycles, trade cycles, cyclical fluctuations are being identified by many economists since 19th century. In economic literature, Clement Juglar is supposed to be the first economists to talk about it in his writings. Some also call these cycles as Juglars after his name. Mitchell and Burns define a business cycle as a cycle which consists of expansions and contractions in various sectors of the economy at the same time or at different time periods,

giving an overall picture of expansion or contraction. This sequence of change is recurrent not periodic. The durations of the cycles may differ from sector to sector or from economy to economy, depending upon the macro economic policies. In short, a business cycle exhibits a wave-like fluctuation in economic activity which expansion or prosperity is followed by contraction and vice-versa. Some trade cycles are of shorter duration and may last for two to three years while others may last for longer period, of say 8-10 years or even larger. The experience of various economies has displayed that there is so fixed duration of a complete cycle. Even the cyclical movements within a single cycle may not be symmetrical, e.g., movement towards the peak can be gradual while to that of the trough can be sudden or vice-versa.

5.3 Phases of A Cycle

In economic theory, a trade cycle has four phases, which are mentioned below:

5.3.1 Prosperity

It is a phase that is characterized by rising income, employment and output, there are no unemployed resources, wages and consumption levels are high, prices are rising and profitability is also very high. Thus, during this phase, most of the economic activities are moving towards their peak levels. This period is also called as a period of inflation. General optimism prevails in the economy. This phase also witnesses the cumulative growth of consumption of durables as well as non-durable items, giving a boost to agriculture, industry as well as services. The confidence in future is so strong that people are increasing investments in financial and non-financial instruments and real estate. But this trend cannot go for ever. The forces of expansion get weaker with time. Marginal propensity to consume being lower than one leads to slower growth in consumption than income which results in to overproduction, further causing a stagnation in prices, profits, additional investments, employment etc. before they move to a declining phase.

5.3.2 Recession

As we have seen above that the slowdown starts in the period of prosperity itself and after all the economic activities reach their peak level, declining tendencies are set in. Since the optimism of the earlier phase did not bring the desired results, the investors, producers as well as

the households become skeptical in making new investments. The projects are halted, flow of credit to existing projects/ventures slows down or stops. This lead to declining prices, lower wages, higher rate of unemployment etc. The level of investment cannot be increased by reducing the rate of interest as the marginal efficiency of capital is declining during this phase. Thus, this phase is characterized by contraction of every economic activity, yet the real economic variables remain above the equilibrium path.

5.3.3 Depression

Depression is a dismal condition of the recessionary tendencies. This is the phase when all the economic variable attains a value below the equilibrium path. During this phase, the production, investment, employment, prices, profitability etc. undergo a substantial decline. The rate of interest remains at the lowest level, still the investors are not willing to make any investments. They rather prefer to keep the money with themselves. This phase experiences a liquidity trap and all sectors of the economy like manufacturing, construction and services experience a substantial fall in investment and many enterprises just shut down due to extremely pessimistic economic conditions. This phase is also termed as a phase of deflation. Bearish tendencies prevail in the financial sector, people lose money on the value of their securities, shares or other financial instruments. Unemployment is also at its highest level and there is a sharp fall in demand despite the fact that the prices are falling. However, this phase is also not permanent. After, many weaker enterprises have left the market, the gap in demand and supply narrows down. Though, the fall in income and employment leads to a fall in consumption but the fall in consumption is not as sharp as that of the income. This further leads to fall in gap in demand and supply. As a result, the fall in prices, profitability and employment is checked and the economy starts gaining some relief from the declining tendencies. Some sectors start gaining some confidence in the economy which lead the economy to the path of recovery.

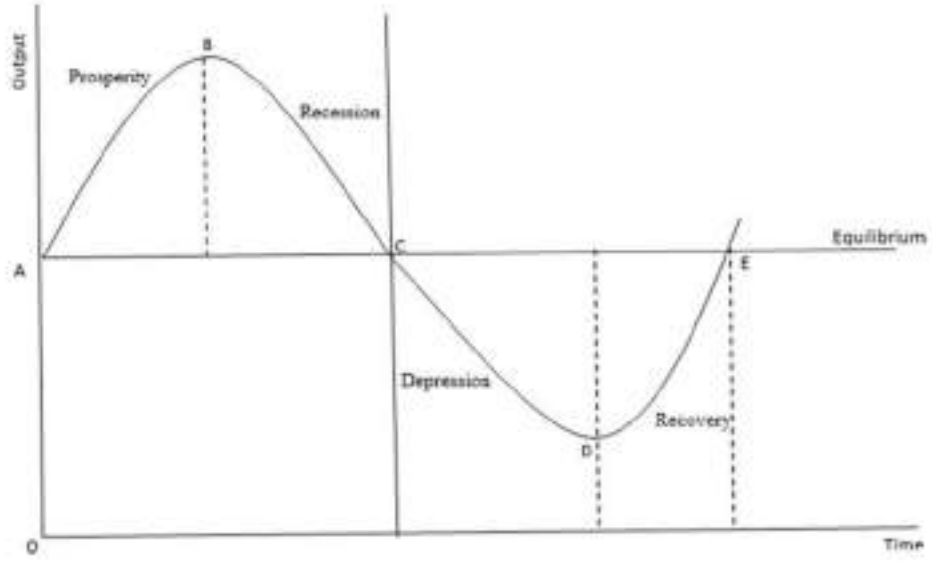
5.3.4 Recovery

This phase begins by the lower turning point from the period of depression and ends at the point of equilibrium from where, the prosperity starts. This phase shows the signs of restoring the business confidence and every economic activity starts improving. The level of income, output and employment starts increasing. The investors start making new investments, the stalled projects may restart during this phase. An increase in wages, profits and interest also leads to

increase in demand which further increases prices, profitability, rate of investment and hence, employment. The financial sector also regains the confidence of the investors as securities and shares start showing increase in their values. Thus, money starts flowing in, giving a renewed life to the economic activities, which leads to fading away of general pessimism that was prevailing in the economy during the preceding phase. But the economy still remains below the equilibrium level. The shorter this phase is, the quicker will be the transformation of the economy to the path of prosperity.

Above mentioned four phases of a business cycle can be observed from figure 1. In figure, the cycle starts from point A, where the economy was in original equilibrium. From A to B, we can see the prosperity phase which starts declining after the economy reaches its peak at point B. Then from point B to C, the economy witnesses the period of recession. This phase continues until the economy reaches the equilibrium level. But as the declining tendencies do not stop, the economy slips below the equilibrium level and enters the phase of depression which ranges from point C to D. Finally, the economy recovers from the declining tendencies and a turning point at the trough, marked by D leads the economy back to the point of equilibrium. This is known as the recovery phase. In figure, it is marked by the movement of the economy from point D to E.

Figure 1: Four Phases of a Business Cycle



Check Your Progress- I

Q1. What do you mean by recession?

Ans. .....

Q2. Define the business cycle of depression.

Ans. .....

5.4 Meaning of Inflation

In common parlance inflation often refers to a sustained increase in prices. Yet, the economists differ in their approaches while defining inflation. Some simply express it as fall in value of money at a constant rate of growth. They say that it is a purely monetary phenomenon when too much money follows too few goods. Thus, it follows that increase in money supply causes rise in prices along with the fall in purchasing power.

5.5 Types of Inflation

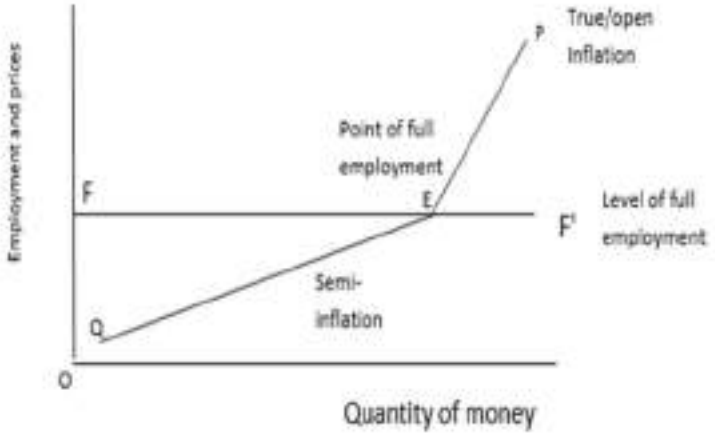
Inflation is further categorized on various scales. Some categorize it by its causes, some by its time of occurrence while some by its rate of change. These types are discussed below:

5.5.1 Types of Inflation by Level of Employment in the Economy

Most of the Keynesian economists think that inflation occurs after the level of full employment is achieved in the economy. They say, any rise in prices before the level of full employment only induces the investors to invest more which further leads to increase in demand for factors of production and pushes the economy towards the level of full employment. Keynes opined that the inflation is caused by the excess of effective demand and hence open inflation occurs only after the level of full employment is achieved in the economy. He says that any increases in quantity of money before the level of full employment increases the level of income, output and employment proportionately and any increase in prices during this phase is mainly due to the structural bottlenecks. Therefore, any inflation that occurs before the level of full employment is achieved is termed as semi-inflation, reflation or bottle-neck inflation. But as the level of full employment is achieved, any increase in money supply leads to pressure on demand for productive resources and since all the resources are already fully employed, therefore, it leads to sharper increase in prices. Keynes calls this phase as a phase of open or true

inflation. These types can be observed from the figure 2. The figure shows that FF' is the level of full employment, curve QEP shows the price level and E is the point where the full employment is achieved. Below the curve FF', as money supply increases, it leads to slower increase in prices than the period after level of full employment is achieved. This is shown by lower slope of the curve QE than that of the PE. Thus, we can observe that the economy faces semi-inflation, reflation or bottleneck inflation below FF' and open or true inflation above the curve FF'.

Figure 2: Types of Inflation by Level of Employment

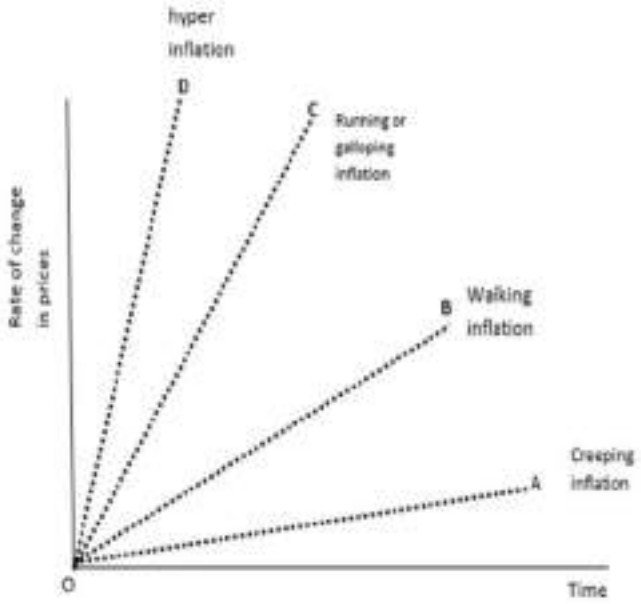


5.5.2 Types Of Inflation by The Rate of Increase in Prices

Open inflation may assume different types by the rate of change in prices. Initially, prices may rise at a lower rate but if the problem is not overcome by conscious policy actions, the situation may aggravate. Little doses of inflation are considered as the oxygen of the economy as it gives the investors a feeling of optimism that their profitability is rising. However, a very high rate of inflation may cut their profits drastically as the cost of inputs also increases. The economists believe that not all types of inflation are bad. A smaller rate of change in prices is good for the economy. They call this rate as creeping inflation while a rate of inflation higher than that may fall in to a category of walking or running inflation while the hyper-inflation is caused by wars, a catastrophy or some other emergency situation which halts the production with drastic economic consequences. Under such situations the purchasing power of the money people have in their hands is eroded overnight. However, under normal

circumstances, any economy may go through the phases of creeping, walking or running inflation. Figure 3 shows these types by the rate of change in prices. The curve OA shows that the prices are increasing at a very slow rate, usually less than 10 per cent per decade or less than 1 per cent per annum. This curve shows the case of creeping inflation. The curve OB shows the case of walking inflation i.e. the prices are rising at a rate of 30-40 per cent per decade or 3-4 per cent per annum while the running inflation (shown by curve OC) shows that the rate of change in prices is about 100 per cent per decade or 10 per cent per year. On the other hand, the curve OD shows the case of hyper-inflation which means that the prices rise by 100 per cent in a period of less than one year and the cumulative change in such cases can be more than 1000 per cent in a decade if it is left unchecked by any government. This will definitely lead to devastating conditions for any economy.

Figure 3: Types of Inflation by Rate of Change in Prices



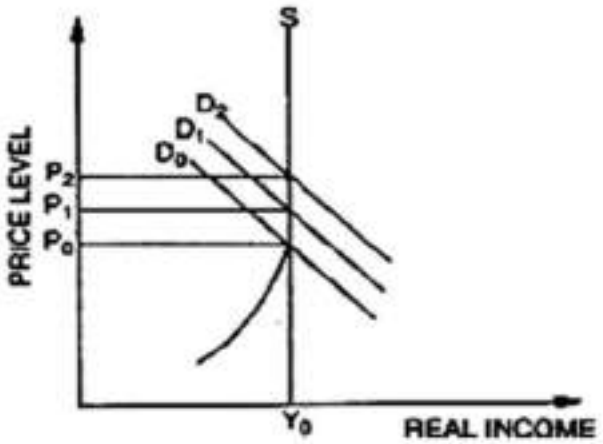
5.5.3 Types of Inflation by the Causes

In this section we will discuss the types of inflation by their causes. It is generally stated that inflation can be caused by both demand and supply sides. Hence, it can be called demand pull or cost push inflation. All other types like credit inflation, wage inflation or structural inflation can be put under these two broader categories.

5.5.3.1 Demand Pull Inflation

This type of inflation is caused by excess demand, relative to the available supply of goods and services. When the economy has already reached the full employment level, there is no possibility of increasing the supply of goods and services but increase in supply of money increases the demand. This leads to increase in prices in factors as well as goods market. This can be observed from figure 4. In this figure, S is the supply curve while D0 is the original demand curve. The original equilibrium is obtained at OP0 level of prices and the economy is at the level of full employment as we can see that after the point of intersection of original demand and supply curves, the supply curve becomes parallel to Y-axis which means that the supply of goods and services cannot be increased with existing resources. Hence, any increase in demand will lead to increase in prices. The figure shows that as the demand increases, the demand curve shifts upwards to D1 and the new equilibrium is attained at higher prices i.e. OP1. Similarly, when demand further increases to D2, the prices also increase to OP2.

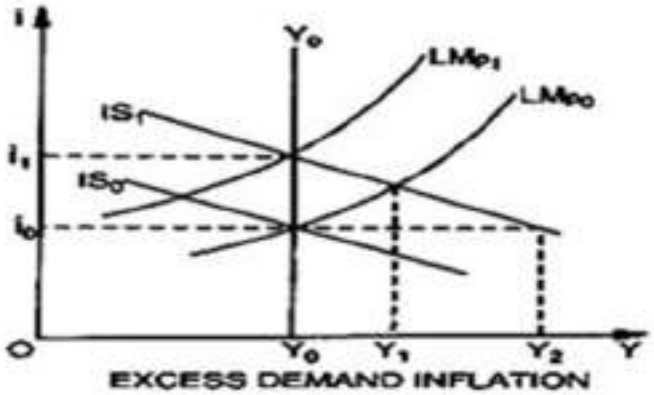
Figure 4: Demand Pull Inflation



The concept of demand pull inflation can also be understood with the help of the IS and LM curves. Figure 5 shows that the initial increase in excess demand is to the extent of Y0Y2 as the IS curve shifts from IS0 to IS1. This leads to increase in prices and new equilibrium is attained at Y1 at an interest rate higher than the original Oi0. During this process, the contraction in LM curve occurs due to two reasons, an increase in excess demand, shifts the existing resources to transaction purposes and there will be lesser demand for speculative purposes at higher rate of

Interest. Further, increase in prices resulting from this excess demand also reduces the real value of the money balances people have in their hands, this is just like a fall in money supply. Hence, the LM curve shifts inwards to LM_{P1} and the final equilibrium is restored at full employment level i.e., Y0 but at higher rate of interest and prices.

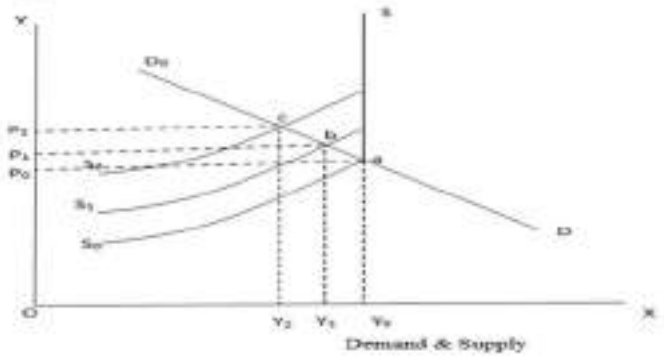
Figure 5: Demand Pull Inflation: IS And LM Curves



5.5.3.2 Cost Push Inflation

Another view point is that instead of excess demand, the prices rise due to increase in cost of production. It may occur due to demand for higher wages by the labour unions, increase in prices of raw materials or other inputs or due to a higher mark-up by the sellers, especially in an oligopolistic market. The idea of cost push inflation was put forth in its theoretical form by Thorp and Quandt (1959). Whenever, there is an increase in prices, the producer will ask for higher prices for the same level of supplies as their cost of production has increased.

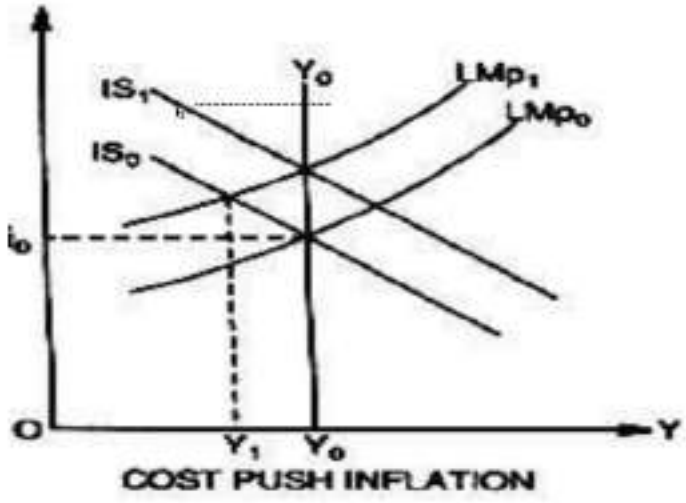
Figure 6: Cost Push Inflation



In figure 6, DD_0 is the demand curve and SS_0 is the original supply curve. The original equilibrium is attained at point 'a', where the economy is at the full employment level. After increase in cost of the inputs, the marginal cost of production increases as a result, the supply curve shifts from SS_0 to SS_1 and the new equilibrium is attained at point 'b'. This leads to increase in prices to OP_1 and unemployment is created to the extent of Y_0Y_1. A further is cost shifts the supply curve to SS_2 and the price level increases to OP_2 while the level of unemployment increases to Y_0Y_2. Thus, the increase in cost not only leads to rise in prices but also an increase in unemployment.

The working of cost push inflation can also be understood with help of the IS and LM curves, as shown in figure 7.

Figure 7: Cost Push Inflation: Is and LM Curves



In this figure, the original equilibrium is attained where IS_0 and LM_0 intersect each other and full employment is achieved at OY_0 and the rate of interest is i_0. With an increase in cost of production, more of the money is spent in purchase of inputs and less of the money is left for other purposes, this is like contraction of money supply, which is represented by inward shift of the LM curve to LMP_1. The new equilibrium is attained at OY_1 level of income which is less than the full employment level. The level of full employment can only be achieved if there is fiscal expansion and the IS curve shifts to IS_1. But it will cause a further rise in rate of interest

toi1 which is equivalent to increase in prices.

Check Your Progress- II

Q1. Define Demand Pull Inflation.

Ans. .....

Q2. Define cost push inflation.

Ans. .....

5.6 Effects Of Inflation

As we have discussed earlier lesson that every increase in prices, is not considered bad. Though, most of the theories assume that the money is neutral, indicating in simple terms that the increase in prices is similar for all the sectors and sections of the economy. But this does not happen in real life. When prices rise, different factors are affected differently. The lower income sections of the society, those with fixed income and consumers often suffer more than the richer sections and the producers or the sellers. So, it is important to discuss the effects of inflation on different sections of the society.

Some of these effects are discussed below:

1. **Effects on the Producers:** After the level of full employment is achieved, any increase in money supply may turn the rise in prices from a creeping inflation to walking or running inflation and if it remains uncontrolled then even to hyperinflation. Under such situations, the producers have to bear a very high cost of production. So they have only two options of either reducing the supplies or to maintain the supplies at higher prices. This will further have a negative impact on their sales and hence on the profitability.
2. **Effects on Distribution**: Inflation is often seen as an agent to increase the income inequalities as it does not increase the income of various factors of production in equal proportions. Big hoarders and speculators earn more while those with fixed income lose their purchasing power. The profits, rent etc. may increase while the wage rate may not change in proportion to the rate of inflation. This redistributes the resources from the hands of the low income groups to the high income groups. Thus, inflation increase the income inequalities.

3. **Effect on Debt:** As the increase in prices leads to deterioration in the purchasing power, the debtors are considered to be benefited from the inflation. If the rate of interest remains unchanged with increase in prices or the change in rate of interest is less than the rate of inflation, then the debtor will return lower amount of money in real terms. Under such cases, the creditors will suffer from inflation as they will not get back the same amount of money in real terms.
4. **Effect on Wage/Salaried Earners:** Many studies have indicated that the after inflation, the wages or salaries of the persons increase after a lag and more often this increase is not in proportion with the inflation rate. In coutries where agricultural sector employs a big proportion of its workforce and/or a majority of the workers belong to the unorganised sector (as in India), any increase in prices pushes the people towards the poverty line. With a small increase in prices, a big majority of them fails to make their both ends meet. Thus, with inflation, the middle class is pushed towards poverty; those who were earlier just above the poverty line, are pushed below the poverty line and poor become poorer.
5. **Effect on Human Capital Formation**: Inflation has a negative impact on standard of living of common masses. With limited income, when the prices increase, they find it difficult to maintain their original standards. This leads to cut in expenditure on education and health of the family members. During the periods of inflation, the school fees and cost of medical treatment also increases. Hence, people find it difficult to attain higher education, nutritional diets and proper medical care for their wellness. This has an adverse effect on the process of human capital formation.
6. **Social Problems and Political Instability:** Inflation aggravates the income inequalities. A big proportion of the population of developing economies live under the conditions of vulnerability to poverty. The growth does not percolate to the lower sections of the society and inequalities are in their worst form. This leads to wide spread unrest among the common masses. With a life full of deprivations, public often lose faith in the democratically elected governments. This results in to political instability. Wider inequalities also leads to social problems. When people do not get enough from their livelihoods and their labour is not adequately rewarded, they resort to other means such as looting, corruption, dowry, or other illegal ways to amass money.

5.7 Summary

Business cycle can be defined as the downward and upward fluctuations of gross domestic product (GDP) along with its natural growth rate over a long period of time. Business cycles influence business decisions enormously and set the tendencies for future business. In this unit, there are four phases of business cycles namely, Depression, Recovery, Prosperity and Recession. The period of prosperity opens up new and lager opportunities for investment, employment, and production and promotes business in the economy. Whereas, the period of depression reduces business opportunities and investment as well as employment in the economy. Thus, in order to earn maximum profit, an entrepreneur must analyze the economic environment of the period before taking his important business decision. We have further discussed about the meaning and types of inflation. Here, inflation means increase in money supply which causes rise in prices along with the fall in purchasing power. Demand pull and cost push inflation are the types of inflation. Demand pull inflation means rise in prices is caused by excess demand, relative to the available supply of goods and services, while cost push inflation means, instead of excess demand, the prices rise due to increase in cost of production.

5.8 Questions for Practice

A. Short Answer Type Questions

Q1.What do you mean by a business cycle?

Q2.Define prosperity.

Q3.How would you differentiate between recession and recovery?

Q4.What are the characteristics of the phase of depression in any business cycle?

Q5.What do you mean by inflation?

Q6.Define hyper-inflation

Q7.Do you think that all types of inflation are bad? If not, why?

Q8.Differentiate between cost-push and demand-pull inflation.

B. Long Answer Type Questions

Q1.What do you mean by a business cycle? Discuss various phases of a business cycle.

Q2.Discuss various types of inflation.

Q3.What is inflation? Discuss its causes and effects.

5.9 Suggested Readings

Thorp, Willard L. and Richard E. Quandt (1959). The New Inflation. McGraw-Hill Book Company Inc., New York.

Keynes, J.M. (1940). How to Pay for the War: A Radical Plan for the Chancellor of the Exchequer. Macmillan and Co., Ltd. London.

Samuelson, Paul A. (1948). Economics: An Introductory Analysis, McGraw–Hill.

Say, J. B. (1834). Treatise on Political Economy. 6th American Edition. Grigg and Elliot, Philadelphia.

Schumpeter, J.A. (1961). The Theory of Economic Development: An inquiry in to profits, capital, credit, interests and business cycles. Translated from German Edition (trans. Redvers, Opie). Oxford University Press, New York.

M.A (ECONOMICS)

SEMESTER –II

COURSE: MACRO ECONOMICS

UNIT 6 A: MONEY: DEFINITION, TYPES, FUNCTIONS AND ROLE

STRUCTURE

6.1 Learning Objectives

After reading this unit, learner will be able to:

- Know the Meaning and Origin of money
- Problems of barter system and stages of growth of money
- Identify the difference between money and near-money
- Identify the functions of money
- Know about evils and classification of Money

6.2 Meaning of Money

Basically, term money was derived in English language from Latin word 'Moneta'. Moneta is another name of the Raman Goddess Juno. The first regular mint was establishedin Rome in the temple of the Goddess Juno or Moneta. The early Roman coins minted on one side, the head of the Goddess with her name Moneta. With the passage of time, the name of money passed on to the product of the mint after the name of this Goddess. Money cannot be described on the basis of the matter it is made of it. It can be defined in terms ofits functions.

6.3 Origin of Money

The difficulties of barter made it essential for people to derive some meaning of money to overcome the problems of barter system, the method derived was the use of something which served as a medium of exchange and a measure of value which later on considered as money, has gradually become the central figure in an economy and revolution in the history of mankind. The need for money was realized long ago and the idea originated in the very early stages of man's economic life. The difficulties of barter were felt more and more as production increased and exchange expanded. Specialization developed exchange and the use of a medium and a standard became necessary. But money developed through a number of stages and its nature has been changing from time to time and from region to region.

However, there are two theories related to the growth of money.

1. **Theory of Spontaneous Growth of Money:** Spontaneous growth theory of money was propounded by Prof. Spalding. This theory states that money was not discovered by any particular individual. Its growth was just spontaneous. With the development of civilization, exchange increased and to overcome the problems of exchange, people started to use a particular commodity as a medium of exchange. Thus, with the passage of time, this commodity came to be accepted as money. In this way, money came into existence of its own.

2. **Theory of Evolution of Money:** This theory is associated with the name of Prof. Crowther. This theory states that money has come into being not on its own but due to specific human efforts. According to Crowther, "Money is one of the most fundamentalof all man's invention. It needed the conscious reasoning power of man to make the step from simple burden to money accounting. It was with a view to find a standard measure of value and a medium of exchange.

6.4 Stages of The Growth of Money

1. Commodity Money: As human civilization went on to develop, commodities were used as money. For instance, in the hunting stage, people used animal skins, bows and arrows etc.as money. In the animal stage, goats, sheeps, cows and oxes were used as medium of exchange. 'Similarly, in agricultural stage, grains were used as medium of exchange. Thus, in different stages, different commodities were accepted as medium of exchange.'

Demerits: The following are the main demerits of commodity money:

a. These commodities lacked profitability.
b. All cattle or other goods are not homogeneous.
c. Supply of commodities could abruptly change.

2. Metallic Money: Metallic money was introduced in 8th century by king Midas to overcome the difficulties of commodity money. With the growth of human civilization man discovered various metals like iron, gold, —brass, copper, silver etc. These metals wereused as money. In the beginning, people were indifferent to the weight of the pieces of these metals. But with the passage of time, different pieces of metals were weighted to ensure uniformity. As a result, the metal pieces were stamped and

their value was inscribed on them.

Demerits. Some of the elements of metallic money are as under:

a. Metal coins proceed to expensive form of money supply.
b. Supply of metallic coins could not always be adjusted to their demand.
c. Metal coins used to be very heavy in weight.

3. Paper Money: Paper money was first of all introduced in China in 1807 to remove the difficulties of metallic money. As is known, metallic money is inconvenient as well as risky affair to transfer. There is involved a lot of risk of being stolen. Therefore, to cope with these difficulties, traders in the past used to deposit their metal money with money lenders and ob- tain certificate of deposit. These certificates were used to obtain metal money at different stations. Therefore, these certificates came to be used as money.

Merits: The main Merits of paper money are as under:

a. This is a cheap source of currency.
b. It can easily be transferred from one place to other.
c. Its supply can be easily adjusted according to its need.
d. Credit Money. Banking system came into existence due to expansion of trade.

Growth of banking system led to the creation of credit money. It comprises of cheques, promissory notes etc. This is a very simple, convenient secured as well as less expensive form of monetary system.

4. Near Money: Near money means those promissory notes which are readily converted into money. Near money comprises of Treasury Bills, Exchange Bill, Bonds, Securities, Fixed Deposits with the Banks, Insurance policies and the like. Therefore, near money is less liquid as compared to paper money.

6.5 Definitions of Money

Money is not easily defined because it has many definitions due to its scattered subject matter. Still, it is controversial what money is and what we constitute in money. The near money assets perform the functions of money and satisfy the definition of money. It is possible to know the constituents of money, but it is very difficult to give its suitable and universal definition. Another reason due to which it is

not easy to define money precisely because of changing usages and customs. How can in a dynamic society, fixed or rigid definition of money can be given? In old times, precious metals were regarded as money like gold and silver coins. But in the modern times, paper notes and demand deposits, plastic money (ATM Cards, and Credit Cards) have become part and parcel of money. The present controversy has been cleared by including time deposits or fixed liabilities referred to by Milton Friedman, Radcliffe Committee and Gurley and Shaw, the non-banking financial in term diaries and liabilities of the saving banks into money.

H. G. Johnson in his "Monetary Theory and Policy" and *EL. Feige* in, "Demand for Liquid Assets: A Temporal Cross Section Analysis" have followed four approaches to the definition of money.

1. Conventional Approach.
2. Chicago Approach or Monetarists Approach.
3. Gurley and Shaw Approach or Liquidity Approach.
4. Central Bank Approach.

These approaches are discussed below:

1. **Conventional or Traditional Approach:** This is the oldest approach to the definition of money. According to this approach, money acts only as a medium of exchange. It means money is defined in terms of its characteristics like spend ability, and liquidity, etc. According to *G. Crowther* "if a thing that is fact generally acceptable in payment and generally used as a medium of payments, it is money." General acceptability depends upon the social and legal conventions. Keynes opined, "Money is that delivery by which debt contracts and price contracts are discharged and in the shape of which a store of general purchasing power is held."

   This definition of money includes in it the currency (which is the liability of the central bank) and demand deposits (which are the liabilities of the commercial banks.)

   $$M = C + D$$

   M - Money Supply, C- Currency, D- Demand Deposits.

2. **Chicago Approach or Monetarist Approach or Quantity Theorist Approach:**

Thisapproach is associated with the Nobel Prize Winner, Milton Friedman and other Quantity Theorists or Monetarists. The Chicago economists have broadened the scope of money by defining it as "a temporary abode of purchasing power" (Milton Friedman). It means money can function as a temporary abode of purchasing power if it is kept in the form of cash, demand deposits or any other asset which is close to currency: *i.e.*, near money asset. According to this approach money includes currency, demand deposits and time deposits.

$$M = C + D + T$$

M. Friedman and D. Meiselman have given two criteria to include time deposits in money.

3. **Gurely and Shaw Approach or Liquidity Approach**: This approach has been given by Professors John G. Gurley and Edward S. Shaw, in their book 'Money in a Theory of Finance', and the Radcliffe Committee. They have stated that there are many assets which have claims against financial intermediaries: currency and demand deposits are just two among them. They lay stress on large spectrum of financial assets. On the basis of this approach, they include in money *(M)*, the currency (C), demand deposits (Z)), time deposits (7), saving bank deposits *(SB)*, shares *(S)*, bonds *(B)* etc.

$$M = C + D + T + SB + S + B,$$

Thus, Radcliffe Committee and Gurley and Shaw approach include in money the Chicago definition plus the liabilities of non-banking financial intermediaries. Thus the

4. **The Central Bank Approach:** The central banking approach has further broadened the scope of the concept of the money. According to this approach, there is similarity between money and other means of financing purchases which are measurable and immeasurable. The *measurable-concept* means, it is the total amount of credit outstanding that matters and the money supply affects only because bank credit is a part of total credit. The *unmeasurable concept* means the concept of liquidity of the economy and credit can be substituted for money without limit. Money is the credit extended by a wide variety of sources. The credit has to be controlled to regulate the

economy. Thus, under this approach, money includes currency (C), bank credit *(D)*, time deposits *(T)* credit from non-banking financial institutions *(NBFI)* and credit from unorganized agencies *(CUA)* to economize its use.

$$M = C + D + T + NBFI + CUA.$$

Check Your Progress- I

Q1. Mention the names of the stages of the growth of money.

Ans.....

Q2. Define conventional or traditional approach of money.

Ans.....

6.6 Features of Money

The main features of money are as stated below.

1. **General Acceptability:** The main features of money are that people accept it as a medium of exchange. It is accepted as a standard of payment without any hesitation. In this regard Neralyn has rightly observed, "The essential function which money enables to identify money is that, it is generally accepted as a means of payment".

2. **Money is Not a Veil**: Economists regarded money as a veil. It was held that money acts as a medium of exchange without affecting the level of economic activity in any way. However, modern economists opined that money is not a veil. It is an active agent of the economic system. In this way, money is required in every economy before the process of production starts. Changes in the demand for and supply of money significantly in- fluence the nature and level of economic activity.

3. **Measure of Value:** It is possible to measure the value of goods and services in terms of money.

4. **Liquid Asset:** Money is considered as the most liquid asset. Liquidity refers to that asset which can be converted into goods and services as and when desired. Other assets, other than money, are not equally liquid. Thus, houses, land, furniture etc.

are not as liquid as money. One has to first dispose off these assets, convert them into money, before other goods and services are bought.

5. **Voluntary Acceptability:** Another important feature of money is that it has voluntary acceptability of the people. The people always wish to hold money. This does not need any legal sanction.
6. **Money is a Means and Not an End:** Money is useful only indirectly. It means, we can buy goods and services with money to satisfy our wants. Therefore, money is only a means to satisfy human wants. Thus, money is of no direct satisfaction.
7. **Medium of Exchange:** Money acts as the medium of exchange for the sale and purchase of goods and services.
8. **Government Control:** All economic problems are related to the flow of money in the economy. In the modern economies, the role of Govt. is not nearly restricted to the administration of the country. Rather, it is increasingly participating in economic activities. To control, the inflationary and deflationary tendencies in the system, the role of the Govt. is regarded as an unsuitable phenomenon. Generally, the Central Bank of country acts on behalf of the Govt. to regulate the flow of money in the system.

6.7 Functions of Money

Money came into existence due to various difficulties of the barter system. The functions of money are such that they are expected to remove the difficulties of barter. Even the best definition of money cannot bring out the exact features of money. We must, therefore, like Prof. Walker, say, *money is what money does*, i.e. anything that performs the functions of money. A proper understanding of the term money, therefore, necessitates a discussion of the functions of money. It will not be out of place to quote a couplet which describes the function of money as:

"Money is a matter of functions four,

A medium, a measure, a standard and a store."

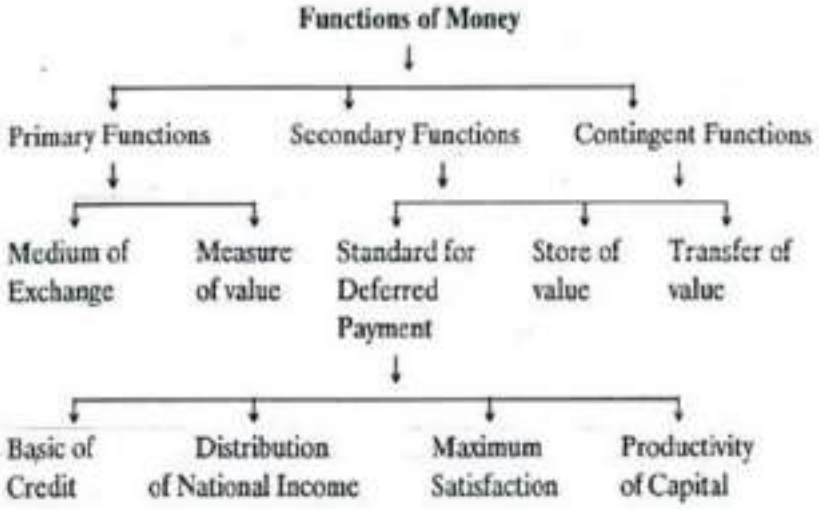
Prof. Kinley has classified the functions of money into three groups:

(i) Primary or essential,

(ii) Secondary, and

(iii) Contingent.

The following picture is illustrative of the functions which money performs in modern times:



6.7.1 Primary Functions

Primary functions of money are the following:

1) **Medium of Exchange:** The most important function which money performs is the medium of exchange. Medium of exchange implies that anything which is generallyaccepted in exchange of goods and services. The acceptance of money as a means of payment is a matter of social or legal convention. Each person accepts money with the influence that others will accept it in payment. The social convention could be set up through a formal pledge by all members of society to accept a certain commodity agreed upon as a medium of exchange. If some social convention is enforced by law, it is called legal convention. According to Newton, "The essential function which enables us toidentify money is that it is generally accepted as a means of payment." By performing its role on a medium of exchange, money has removed the difficulties of barter system.

2) **Common Measure of Value.** Another function of money is the measure of value. It implies that the value of each commodity is measured in the monetary unit. Money is looked upon as a collective measure of values. Since all values are expressed in terms of money, so it is an easy job to determine the rate of exchange between various goods and services under the barter system, it is very difficult to determine the rate of exchange between various types of goods and services. But

the discovery of money has removed this difficulty. But money still has difficulty in its role as a collective measure of value. And commodity which acts as a measure must itself be stable in value. But this cannotbe said of money. Money as a unit of account helps in economic comparison and hence preferences can be ranked on the basis of satisfaction achieved. Moreover, this function facilitates accounting and book-keeping. The planners use shadow prices for the evolution of a project. Individuals on the basis of this function of money get the economic information.

6.7.2 Secondary Functions

In the secondary functions of money, include:

1. **Store of Value:** The store of value is the most important function of money. It is very useful for economic analysis. The store of value is also termed as generalized purchasing power of money. It implies the shifting of purchasing power from present to the future. Money is also stored as permanent abode of purchasing power. Keynes was first who realized its importance. In this sense, money is stored in the form of asset. Money is an asset because it is claim against all goods and services, which one likes to buy. People may keep their wealth in the form of money. Money has to compete with other assets. Itis the most liquid of all assets. It is so because it can be easily exchanged for any goodsand services Liquidity in general means the ability of an asset to be converted into cash without any risk or loss or wastage of time. The liquidity of an asset depends on its ready transferability and stability in value. All assets other than money lack reversibility in the sense that their value in payment is not equal to their value in receipt.
2. **Standard of Deferred Payments:** Under barter system, borrowing and lending were very difficult. But the modern money economy has facilitated these processes. Now both lending and borrowing are done in terms of money. A large volume of transactions are consented with contractual payments which are expressed in money, it serves as a

standard of deferred payments. It is more stable and durable as compared to other goods and has general acceptability. Therefore, due to these reasons money continues to bedesirable as a standard of deferred payments.

3. **Transfer of Value.** The area of exchange has widened with the growth of the economies. The exchange of goods is done at distant places. It is necessary in these cases to transfer purchasing power from one place to another. Money has facilitated the transfer of value. In modern times, the wants of the people are multifarious. Therefore, to meet these wants, the goods and services are bought from remote areas. Money being liquid and generally acceptable can be used for transfer of value. Any person can sell any asset at a place andbuy it at another place; it is due to this function of money that the idle funds lying with one person can be lent at interest to another person to use them optimally. As a result, it helps in the economic development of the country.
4. **Guarantor of Solvency:** Prof. Kent referred to this function of money as guarantor of solvency. In order to meet the unexpected obligation, the person and -business firms haveto keep large sums of money. They hold money to avoid insolvency. Thus, when moneyis kept to avoid insolvency, it is called guarantor of solvency. Kent lamented that money as guarantor of solvency is different from money as a store of value. Store of value function of money implies the buying of goods sooner or later. But when money is kept as guarantor of solvency, individual has not to part with it until it becomes absolutely necessary.

6.7.3 Contingent Functions

The main contingent functions of money are as under:

1) **Distribution of National Income:** The goods and services are produced by four factorsof production. They have to be duly rewarded for their efforts. It is with the help of money that the national income produced by four factors of production i.e. land, labour, capital and entrepreneur is distributed in the shape of rent, wages, interest and profit- respectively. Thus, money facilitated the distribution of national income and each factor of production is paid in terms of money.
2) **Basis of Credit System**: In the modern economic setup credit has occupied a vital place. Credit is called promise to pay. Every currency notes or cheque carries the

legend: On demand I promise to pay Rupee. Prior to the invention of money, the manufacturing of credit by banks was not possible. But in the modern money world, the cheque system, drafts and bills of exchange are widely used. The basis of these credit instruments is money. People save some part of their income and put in the bank. On the basis of these deposits the banks create credit. Thus, money serves as the basis of credit.

3) **Equalization of Marginal Utilities and Productivities:** It is money with which consumers and producers maximize their satisfaction. The use of money results in the application of principle of substitution. Human wants are unlimited and variegated whereas income is scarce. The consumer uses his limited resources in

$$\frac{MU_x}{P_x} = \frac{MU_y}{P_y} = \frac{MU_z}{P_z} = \cdots \cdot \frac{MU_n}{P_n}$$

such a way so what marginal utilities from various goods are equal, e.g.,

Similarly, the producer uses his limited resources in such a fashion as the cost of productionis minimum and profits are maximum.

This equates the marginal physical productivities of different factors of production.

$$\frac{MPP_x}{P_x} = \frac{MPP_y}{P_y} = \frac{MPP_z}{P_z} = \cdots \cdot \frac{MPP_n}{P_n}$$

Static And Dynamic Functions of Money

Paul Einzig had classified all the functions of money into two broad categories, viz., static functions and dynamic functions.

1. **Static Functions:** Static functions of money apply to conventional, fixed, technical, and passive functions of money. These functions only help to regulate the economic system; they do not infuse any element of dynamism into the system. These basically include the Primary and Secondary functions of money, such as medium of exchange, standard of value, store of value, transfer of value and standard for deferred payments.
2. **Dynamic Functions:** Dynamic functions of money imply those functions of money which impart dynamism to the economy. By imparting dynamism, we mean to ensure stability of price level as well as to improve the level of income and

employment. Dynamic functions also consist of such functions as increasing the liquidity of capital and serving as the basis of credit creation. All such functions of money make it amply clear that money is a Dynamic Force. In order to resolve the problems of inflation and deflation, the Govt. in its formulation of the monetary policy, focuses only on the dynamic functions of money.

The basic dynamic functions of money are:

(i) Money creates the situation of inflation or deflation through changes in the price level

(ii) Money facilitates full utilization of the natural and man-made resources. Thisincreases the level of national income.

Check Your Progress- II

Q1. What are the primary functions of money?

Ans.....

.....

Q2. Define static and dynamic functions of money.

Ans.....

.....

6.8 Importance of Money

In modern economy, money plays a very crucial role because the modern economies cannot function properly without money. Thus, money occupies a prime place in all branches of economics. The following are the main points of significance of money:

1. **Importance in Consumption:** The invention of money has greatly benefitted the consumers. The consumers get their incomes in the form of money which gives them a ready command over a variety of goods and services. They can postpone their demand if they so desire. According to Robertson, "Money helps each member of society to ensure that the means of enjoyment, to which he has access, yield him the greatest amount of ac- tual enjoyment which is within his reach.
2. **Importance in Production:** Money helps the producers in a number of ways by its significant role in deciding, planning and managing the productive activities in the most efficient way. Moreover, the existence of money helps the producers to

discover what people want and how they want.

3. **Removal of the Difficulties of Barter System:** The existence of money has removed the drawbacks of old barter system. Under barter system goods are exchanged for goods. There always exists the double coincidence of wants. But, the invention of money has greatly facilitated by removing these difficulties. Now, the value can be measured easily and quickly. There is no difficulty in the exchange of indivisible goods.
4. **Importance in Distribution:** Money has greatly facilitated the process of distribution of national product among different factors of production in terms of rents, wages, interest and profit. All these payments are made in terms of money. It signifies the fact that money acts as a medium of exchange.
5. **Importance in Public Finance:** The magnitude of public finance is so vast that it cannot be managed without money. Public finance deals with the income and expenditure of the govt. The government receives income in the form of taxes, fees, fines etc. and spends this income on developmental and administrative purposes. Without money, these functions of the modern states would become difficult and complex.
6. **Importance in Capital Formation:** Money has greatly facilitated the process of capital formation. It means increase in investment. Investment will be undertaken only when there are savings. The financial institutions mobilize the savings from the general public and channelize them into productive processes by the way of advancing loans to theinvestors.
7. **Increase in National Unity:** In every country of the world, money has served as a helping hand to promote the national unity. It has curtailed the social isolation. People living in far off regions meet each other for commercial purposes. It serves to encouragethe national unity in a country.
8. **Measure of Social Welfare:** Social welfare can be measured only through money. The utility derived by a person can only be measured in terms of money.
9. **Importance in Trade:** Money through its function as a medium of exchange facilitates trade. In modern economics, the rapid exchange of goods and services is possible because of money. Money constitutes the basis of price mechanism

through which the economic activities of the community are adjusted.

10. **Economic Development:** Monetary policy of every country greatly influences its economic development. In an economy, if money supply is more, people will spend more which will lead to an increase in demand, production and thus, there is every possibility of economic development.

11. **Increase in Standard of Living:** The smooth functioning of money economy helps the society to raise its standard of living. It does so by increasing the overall production and through equitable distribution of income and wealth.

12. **Solution to Central Economic Problems:** Money facilitates convenient and appropriate solution of the central economic problems of an economy. The main central problems ofan economy are what to produce, how to produce and for whom to produce.

13. **Division of Labour and Extent of Market:** Because of money, there has been a phenomenal expansion of the markets. Production is now being done on large scale. This has increased the degree of mechanization. High degree of mechanization has facilitated division of labour and specialization.

14. **Basis of Credit:** In modern age, trade depends on credit. In the absence of money, credit creation was not possible. As a store of value, money has facilitated the creation of credit. To quote Halm, "Money is the most appropriate mode of credit, because compared to goods; its value remains relatively stable. Credit system will just come to end in the absence of money.

6.9 Evils of Money

According to *Ludwig Von Mises*, "Money makes the mare go." But money is not an unmixed blessing. Money is stated as the root of all evils." Highlighting the evils of money Mises has further stated, "Money is regarded as the cause of theft and murder of deception and betrayal. Money is blamed when the prostitute sells her body and when the bribed judge perverts the law. It is money against which the moralist declaims when he wishes to oppose accessible materialism. Significantly enough, avarice is called the love of money and all evilis attributed to it."

Robertson has stated, "Money, which is a source of so many blessings to mankind, becomes also, unless we can control it, a source of peril and confusion".

Money is a valuable though dangerous invention. It is a good servant but a bad master. . The various economic and non-economic evils of money are discussed as under:

6.9.1 A. Economic Evils of Money. The economic evils of money are as stated below:

1. **Inflationary and Deflationary Pressures:** Inflation and deflation which are caused by monetary factors have been causing hardship to the people. One of the greatest demerits of money is the change in its value. It means there may be inflationary or deflationary pressures.

   During inflation, wealth concentrates in the hands of business communities and the poor have to suffer due to sky-high prices. In this case the rich become richer-and-the poor-gets poorer. The inflationary pressures jeopardize the economy. The real production will fall and speculative activities will be encouraged. During deflation, the purchasing power of money rises and the business community suffers a great loss. The working class faces the situation of unemployment. Of course, the middle-class gains. Deflation was severe in 1929 which caused a radical fall in employment. Thus, the pattern of production changesdue to change in the value of money.

2. **Trade Cycles:** Wide fluctuations in business activity and prices have been the result of the flow of money. Under a capitalistic system, trade cycles are a normal feature. A boom is followed by a slump and slump results in boom. Therefore, instability exists in the economy. The result is that different sections of the society face difficulties and inconveniences. In fact, money is the cause for ups and downs in the country. In a barter economy, there is no possibility of trade cycles because there are no chances of over production and under production.

3. **Inequalities of Income:** One of the greatest evil of money is the inequalities of incomeand wealth. It has divided the society into two classes i.e. haves and have nots. It results in concentration of wealth in the hands of capitalistic classes. But it adversely affects the working class. It makes the rich richer and poor poorer. It is due to this reason; money had created a wide gulf between different groups of the society. This has led to the exploitation of working class and the existence of degradation in the midst of plenty.

4. **Over-Capitalization**: With the inception of money, borrowings and landings have

become possible. But the easy borrowing and lending have led to the problems of over- capitalization and over-production. It means some industries use more capital than required. Over capitalization results in over production and therefore uncertainty and instability.

5. **Misuse of Credit:** Money is the basis of credit. If with the help of money, more and more credit is created, but output is not increased, in that case too much money chases too few goods. It will result in rise in prices which is a chronic problem in the modern economy. Thus, money results in misuse of credit.
6. **Hoarding**: In the materialistic world, people give more importance to money than what it deserves. Instead of putting money in productive channels, people start hoarding it. Thus, it creates problems in production. The concept of money will function nicely only if all that is saved is invested. But the Hoarding of savings would adversely affect income, outputand employment.
7. **Black Marketing:** Money has also created the problem of black money. In the face of exorbitant tax rates, people start evading taxes by concealing income. They find it convenient because of the storability characteristic of money. Black money in turn induces black marketing and speculative activities. This existence of black money runs a parallel economy within an economy. It has devastating effects on the sound functioning of monetary and fiscal policies.

6.9.2 (B) Non-economic Evils of Money

If money is not properly managed, it pollutes social, political, moral and ethical life. The non-economic evils of money are as follows:

1. **Political Evils:** Money is a source of danger and disaster in political life if it is not managed in the best interests of the community. Money has not only spoiled political life and democratic institutions but has also bred ferocious wars. Money in reality has become the life blood of modern economy. In a poor country like India, it is with money that votes can be purchased by the economically rich. Thus money affects the political institutions adversely.
2. **Special Evils:** Money has stepped up the propensity of materialism cum so was wrecked social life. The success or failure of **a** person is measured in terms of money. Friendship, love, affection and respect, etc., are measured likewise. Money

puts a curtain on all the evils of man. Everyone in order to have a good status in the society wishes to accumulate more and more wealth. For that he resorts to all types of exploitations. Thus, good social institutions have been relegated to the background with the inception of money. Further, the spiritual values have declined and avarice has prevailed over. Money has encouraged thefts, murders, frauds, etc.

3. **Moral and Ethical Evils:** Moral and ethical considerations have been sacrificed at the altar of money. People in the modern times derive more pleasure from money rather than from anything else. Money is regarded as end rather than a means. It has corrupted all political and social institutions. It has made the people money-minded and hence corrupt. Thus, money has resulted in moral and ethical degeneration. A greedy husband may murder his wife for bringing fewer dowries. Likewise, a greedy father may get his educated and beautiful daughter married to an ugly and uneducated rich man. Thus, for man, money has become *'Gospel of Mammon.'*

Check Your Progress- III

Q1. Mention the importance of money in consumption.

Ans._____

Q2. What are the non-economic evils of money?

Ans._____

6.10 Classification of Money

The various types of money can be known by its classification. Different economistshave classified money on different grounds. But mainly money can be classified as under:

6.10.1 Classification on the basis of Nature

Prof. Keynes has divided money in two parts on the basis of nature as i.e. Actualmoney and Money of Account.

1. Actual Money

Actual money refers to that money which circulates actually in a country. It is the actual medium of exchange. It acts as a medium of exchange, measure of value and

store of wealth. It is through money that goods and services are exchanged in the market. In India, all coins in the form of rupees and paise and currency notes of different denomination in circulation constitute actual money. Benham termed this kind of money as Unit of Currency and Seligman calls it *Real or Concrete Money*. Lord Keynes has divided money into two sub-parts.

A. **Commodity Money:** Various commodities have been used as money in different places and at different periods. *Pastoral tribes* and *advises* used cattle, and some still do, as money. But as cattle were neither divisible nor uniform in size and quality, it did not prove to be a good medium of exchange. Some common articles of trade, such as tobacco or salt or skins, were later used as money, since they were not perishable, and under those circumstances, handled easily. Rum was used as a medium of exchange in the early years of New South Wales. Cigarettes were used both as a medium of exchange and as a measure of value in some prisoners-of-war camps and in the black market of Europe immediately after the war.

B. **Representative Money:** It refers to that money whose intrinsic value is not equal to its face value. Such money is allowed to be converted into commodity money. It is indicative of value. Paper money is an example of representative money. It is also oftwo types: Convertible and Inconvertible. Convertible money can be exchanged for commodity money but so far as inconvertible money is concerned, authorities issuingit or the government are not liable to convert it into commodity money. Therefore, it **is** called Fiat Money.

2. Money of Account

Money of account refers to that in which all sorts of accounts are kept. According to Keynes, "Money of account is that in which debts and general purchasing power are expressed. For example, in India, Rupee is a money account although its forms and contents have undergone changes many a times. There was a time when rupee coin was made of silver. These days, it is made of nickle. Such money has been referred to as ideal money by Seligman.

6.10.2 Classification on the basis of Legality

In this category, money can be divided into following three parts.

1. **Legal Tender Money (Standard money)**: Legal money refers to the money having forceof law at its back. No one can refuse to accept it as a means of payment. It is standard money through which all economic transactions are carried out within boundaries of a country. Legal tender money may be of the following two types:
   A. Limited Legal Tender Money: Limited legal tender money is accepted as legal tender only up to a certain limit. As in our country, the small coins of 1, 2, 5, 10 and 25 paisa are legal tender only to a sum of Rs. 25.
   B. Unlimited Legal Tender Money: It refers to that money which has to be accepted as a medium of payment up to any amount. For instance, in India, 50 paise coins, one- rupee coins and currency notes of all denominations are unlimited legal tender.
2. **Optional Money:** Optional money is that which is ordinarily accepted by the people but legally nobody can be compelled to accept it. In simple words, this type of money does not enjoy a legal status. To accept or not to accept it as a medium of exchange depends on the people. Cheques, drafts, hundies, bills of exchange etc. are some of the instances of optional money. Robertson termed optional money as bank money.

Difference between Legal Tender and Optional Money

	Legal Money	**Optional Money**
1.	The acceptance is compulsory	Acceptance is expedient and optional.
2.	Legal tender money is issued under statutory provisions.	Optional money is issued on the basis of deposits lying in the banks.
3.	Legal Tender Money is a medium of payment in UDC's.	Optional money is a medium of payment in developed countries.
4.	Legal tender money is bought with risk.	Optional money entails no risk.
5.	Receipt is called on for payment in case of legal tender money.	No receipt is required for payment in case of optional money.

3. Outside and Inside Money: Outside money refers to that monetary asset which has its origin in the act of the Government, purchase of goods and services. This asset consists of the claim of private sector against public sector. When there is change in the revenue, expenditure and transfer payments of the Government there exists corresponding change in the stock of outside money.

Inside money refers to that monetary asset which has its origin in the act of financial institutions purchases of securities. This sort of money develops due to purchase of securities by the financial institutions. It is generated by banks. Therefore, the money whose supply comes into being as a result of expenditure by private sector is termed as inside money. Its stock increases when financial institutions like commercial banks purchase the securities.

6.10.3 On the Basis of Money Material

On the basis of money material, money can be classified into following parts.

A. **Metallic Money:** With the advent of gold and silver and the discovery of other metals, the use of commodities as money was suspended. Their place was taken up by gold and silver and these have probably been used as money for some five thousand years. Their exchange value would have been considerably lower than their intrinsic value had they not been widely used as money. They serve as a medium of exchange because they arc durable, divisible, homogeneous and not very bulky. Besides, since their total supply is quite consistent over time and distance fluctuations in their value are not very significant as was the case with perishable goods.

   In the beginning, gold and silver was used as a medium of exchange without being coined. It meant that everyone using them as medium of exchange had to satisfy himselfas to the weight and fineness of the metal. Later on, the invention of coinage saved him from this trouble.

B. **Standard Coins:** These coins are those whose value as commodity is equal to its value as money. Those coins are made either of gold or silver. These coins have definiteweight and fitness. Their face value is equal to their intrinsic value.

C. **Token Coins**: Token coins refer to those coins whose value as commodity is less than their value as money. It comprises of all those coins whose face value is more

than intrinsic value. They are used for making small payments. These coins are made ofcopper, nickel etc. They serve as subsidiary to standard coins.

Now the issue is that Is Indian Rupee a Standard Coin or A Token Coin

It is not easy to analyse whether Indian rupee is a standard coin or a token coin. The reason in what it contains the attributes of either standard coin or token coin. Prior to 1893, Indian rupee was a standard coin. It was made of silver. Its intrinsic value was equal to the face value. There was free coinage of it. But now its position has changed altogether. In other words, now Indian rupee is both a standard coin as well as token coin. As a token coinit comprises of less coinage of it, it is made of silver. On the other hand, as a standard coin it has attributes of principal money of the country, medium of exchange and unlimited legal tender.

D. Subsidiary Coins: Subsidiary coins refer to those coins whose intrinsic value is less than their face value. These coins are of small denomination. These coins are made of light and cheap metal. These are used to make small payments. These are limited legal tender. There is no free coinage.

Check Your Progress- IV

Q1. Briefly classify money on the basis of nature.

Ans.....

Q2. Define inside and outside money.

Ans.....

6.11 Paper Money

Paper money means promissory notes printed on a special type of paper. The issuing authority promises to pay the bearer the sum mentioned their in. Basically, in 19th century, paper money was first of all used in China. But with the passage of time, it spread to theother countries of the world.

Types of Paper Money

Paper money is of following four types:

1. **Representative Paper Money:** Representative paper money refers to that money whichis fully backed by gold and silver. In the beginning, the main purpose of issuing paper notes was to check the loss caused by wear and tear of precious metal. Paper money used to serve merely as a representative of gold and silver lying in reserve fund. People were ensured that actual money was gold and silver. In order to inspire the confidence among people, paper money was fully backed by gold and silver. It is called represented money because it represented gold and silver lying in fund. It is fully convertible into gold and silver. In America, gold & silver certificates were issued as representative money for a short period. In Indian context, Hilton young Commission in 1925 suggested the adoption of Gold Bullion Certificates, but it is not carried out.

2. **Convertible Paper Money**: Convertible paper money refers to that money which is convertible into standard coins. Govt. guarantees to give gold or silver at a fixed rate in exchange for paper money. This system was valued to revalue this drawback of representative paper money.

   Features: The representative convertible paper money has the following characteristics.

   a) It is backed by gold and silver.
   b) Public is ensured by the Government that it can get gold and silver in exchangefor paper notes.
   c) Gold or silver is bought or sold at predetermined rates.
   d) A part of reserve fund is kept in the form of full bodies.

3. **Inconvertible Paper Money:** Inconvertible paper money means money which is not convertible into gold and silver. In simple words, Government does not give any guarantee to convert currency notes into precious metals. No metallic reserves are kept to back the currency notes. This type of money remains in circulation on the basis of credit of the govt.

   Features: The main features of inconvertible paper money are as

   1. No insurance is given by the Government, to convert it into gold and silver.
   2. Paper money serves as standard money.
   3. Paper money is unlimited legal tender.

4. Exchange rate of currency is fixed for the convenience of foreign trade.

4. **Fiat Paper Money**. Fiat money refers to the money which circulates on the authority ofthe Govt. In the words of Keynes, 'Fiat money is that money which is created and issued by the state but is not convertible by law into anything other than itself. It is also knownas emergency money. The reason is that it is issued under emergency condition. Thistype of money is not backed by any reserves. Government does not give any guaranteeto convert it into metallic coins. In fact, it is extra-ordinary money which is issued under exceptional cases.

6.12 Near Money

To know the concept of near money it is necessary to understand the nature of wealth. Wealth is of two types: *Real wealth and financial wealth*. Real wealth comprises of physical assets like houses, land, machines, materials etc. Financial wealth includes currency notes, coin, and demand deposits of banks. These can be used to buy goods and services. These are liquid in nature. Contrary to this, time deposits, treasury bills, bills of ex- change, bonds, debentures, shares, life insurance policy etc. are called Near Money. To buy goods and services, these are first to be converted into cash. These can be converted into money without any loss of time and wealth. Therefore, near money refers to those assets which cannot be used immediately to buy goods and services, but which can be convertedinto money very easily and their values are known in terms of money.

Parts of Near Money: The following assets are included in near money

1. **Time or Fixed Deposits:** Time deposits mean those amounts which are deposited in the banks for a fixed period. However, it can be withdrawn before the expiry of specified period.
2. **Bills of Exchange:** It is an instrument of credit in which a debtor is ordered to pay with interest the amount of loan on the expiry of the specified period, say 90 days.
3. **Treasury Kills:** Treasury bills are those instruments of credit on the basis of which Government gets loan from the public for a short period.
4. **Bonds:** Bonds means documents on whose strength the Govt. & the firms get

loans for a long period. Bond issued by the firm and industries are called debentures.

5. **Shares:** Joint stock companies collect their funds by issuing shares to the public. The shareholder can encash their shares by selling the same in the share market.
6. **Policies of Life Insurance:** On the basis of security of policies of life insurance, loans can be obtained from LIC. Likewise, policies of Unit Trust of India can also be converted easily into money.

6.13 Difference between Money and Near Money

Money	Near Money
1. Money includes currency notes,coin and demand deposit of banks.	1. Near money includes treasury bills, bills of exchange, bond, Govt. securities, and fixed deposit in banks.
2. Money has general acceptability.	2. Near money lacks general acceptability.
3. Money is liquid.	3. Near money is less liquid.
4. Money does not yield any income.	4. Near money is a source of income.
5. Money is a medium of exchange.	5. Near money is not a medium ofexchange.

Check Your Progress- V

Q1. Define convertible paper money.

Ans.....

Q2. What do you mean by convertible money?

Ans.....

6.14 Summary

Money, the term is derived to overcome the difficulties of barter system. Initially, barter system was used in the economy for the exchange of commodities. In this bartersystem one product or commodity was exchanged for another commodity as

per the requirement of the consumer. Generally, Money is accepted in the form of medium of exchange, measure of value, store of value and standard of deferred payments. The primary functions of money include the medium of exchange and measure of value; however, the secondary functions of money contain standard of deferred payments, store of value, transfer of value. Contingent functions of money consist of basis of credit creation, maximum satisfaction, distribution of income, guarantee of solvency, increase in the liquidity of capital.

6.15 Questions for Practice

A. Short Answer Type Questions

Q1. Define Money.

Q2. What are the stages of money?

Q3. What are the primary functions of money?

Q4. Explain the four evils of money.

Q5. Explain the dynamic functions of money.

Q6. Give suitable definition of money.

Q7. Discuss the types of paper money.

Q8. Distinguish Money and Near Money.

Q9. Define legal tender money.

B. Long Answer Type Questions

Q1. What is Money? Write the stages and main features of Money.

Q2. Discuss the primary and secondary functions of Money.

Q3. Describe the economic and non-economic evils of money.

Q4. What is money? Discuss its importance.

Q5. Money is what money does critically examine the statement.

Q6. Classify money on the basis of nature and legality.

6.16 Suggested Readings

Money and Banking, by T.N. Hajela,

Money and Banking by KPM Sundram.

Money and Banking by Schuam Series, McGrawHill Publishing Co.

Ltd., NewDelhi.

Money Economics-Institutions, Theory and Policy by Suraj B Gupta.

Innovations in Banking Services by H.R. Suneja.

Monetary Economics: Institutions by Suraj B. Gupta.

M.A (ECONOMICS)

SEMESTER–II

COURSE: MACRO ECONOMICS

UNIT 6(B): THEORIES OF MONEY: FISHER'S TRANSACTION BALANCE APPROACH AND CAMBRIDGE CASH BALANCE EQUATION, KEYNESIAN LIQUIDITY PREFERENCE THEORY

STRUCTURE

6.11 Suggested Readings

6.0 Learning Objectives

After reading this unit, learner will be able to:

- understand concepts of theories of money
- distinguish the difference between value of money and price level
- know about quantity theory of money-definitions
- Describe the equations of quantity theory of money
- Know about the comparison between transaction and cash balance approach

6.1 Introduction

Value of different goods and services is expressed in terms of money, but the value of money cannot be expressed in terms of money. If the value of money is expressed in terms of goods and services, it will have millions of expressions. In a view to overcome the difficulties wecalculate the collective value of money. We select some goods and services as used in day-to-day life. Their average price is calculated. It is known as general price level. There is inverse relationbetween the value of money and general price level. When general price level (P) falls, value ofmoney rises. Therefore,

$$Value\ of\ Money = \frac{1}{P}$$

In the words of Fisher, "Purchasing power of money is the reciprocal o the level of prices,so that the study of purchasing power of money is identical with the study of price value."

6.2 Quantity Theory of Money: Meaning

The quantity theory of money has a long history. But the pure version of the theory is saidto have from David Hume. It was stated in several forms. The classical economists' quantity theory assumed two forms. The first one is the Transactions Approach of Irving Fisher, an American economist. The second version known as the Cash Balances Approach came from the Cambridge economists led by Marshall. The quantity theory of money became quite popular in these two forms. The theory was eclipsed for sometimes due to the Keynesian Revolution. Milton Friedman, a Chicago economist, made a restatement of the theory in 1956.

According to Fisher's quantity theory of money there is a direct and proportionate

relation between quantity of money and general price level and inverse relation between quantity of money and value of money.

Definitions

According to R.S. Sayers, *"The value of money changes inversely and the price level directly to the changes in the quantity of money".*

According to **Fisher,** *"Other things remaining unchanged, as the quantity of money in circulation increases the price level increases in direct proportion and the value of money decreases and vice versa".*

According to **J.S. Mill,** *"The value of money, other things being the same, varies inversely as its quantity; every increase of quantity lowers the value and every diminution raising it in a ratio exactly equivalent."*

According to **Prof. A.C.L. Dey,** *"The quantity theory of money states that the price level varies in direct proportion to the quantity of money. If the quantity of money doubles so will be the pricelevel. Similarly, they will fall together."*

Equations of Quantity Theory of Money

- Transaction or Fisher Equation
- Cash Balance or Cambridge Equation.

6.2.1 Transaction or Fisher Equation

Prof. Irving Fisher in 1911 put forward transaction approach of money in his famous book, "The Purchasing Power of Money". According to Fisher, "The quantity theory is correct in the sense that the level of prices varies directly with quantity of money and values of trade are not changed." To Fisher demand for money is made for transaction motive. Value of money, likeany other good is determined by the demand for and supply of money. Therefore, value of moneyor price level is determined at that point where demand for money is equal to supply of money.

Demand for Money

The demand for money is just different from the demand for other commodities. Sugar orcloths are demanded because they directly satisfy some want of the consumer. But demand for money is not direct, it is a derived demand. Money is demanded because it is a medium of exchange. Thus, greater the number of transactions to be

done, the larger will be the demand formoney. *So,* we can write,

$$MV = PT$$

$$\therefore M = \frac{PT}{V}$$

Supply of Money

For a clear understanding of the theory, supply of money should be examined separatelyin the context of point of time and period of time. At a point of time, quantity of money is equalto stock of money i.e., currency. Currency is the amount of notes and coins issued by the Government. Let it be denoted by M.

In equilibrium, the demand for money is equal to its supply. Therefore,

$$MV = PT$$

When a period of time is considered, flow of money is to be taken into consideration; another factor enters the scene. It is known as transaction velocity of circulation of money. Velocity of money is the average number of times a unit of money changes hands during a given period andis denoted by V. Every time the unit of money changes hands, it is as if a new unit of money has come into being. Thus, a unit of money changing hands five times during a period is doing the work of five rupees (1 X 5= 5). Thus, supply of money now becomes MV.

Velocity of Money:

It is not only the quantity of money but its velocity which adds to the purchasing power ofmoney. Velocity refers to the rate at which money passes in payment from one person to another person. Thus, it means an average number of times a single unit of money changes hands in course of transactions during a certain period of time. It depends upon a number of factors and isconsidered to be independent of changes in M. In the long period V depends upon the habits of the people regarding the use of cheques, hoarding of cash, the frequency of income receipts, population, rapidity of transport, etc. In the short period it depends upon rate of interest, changes in the price level, and the degree of confidence about future events. Many times it offsets changesin M. If M does not increase, V increases to meet the demand for more money. V declines, if people accept cheques and do not insist on cash in payment for goods. It also goes down when liquidity preference increases or credit is easily available or political instability is anticipated. Ifwages are paid after longer intervals, more money

is needed for transaction purpose. Therefore, V increases when economic development is increasing and the monetized sector is expanding. It is also high where density of population is high. Thus, in equilibrium,

$$PT = MV$$

or $$P = \frac{MV}{T}$$

Here, we have only assumed that all transactions are done in cash. But this is not always so. People have deposits in the banks on which they draw cheques to make payments. So such bank money should legitimately form part of money supply. Let the bank money be denoted by M'. It has a velocity of its own, represented by V and is evident from the fact that the total payments made through cheques are far more than the deposits in the banks. Thus, money supplyincreases by M'V' and the total quantity of money becomes MV + M'V'. Therefore, we can writeit as under:

$$PT = MV + M'V'$$

or $$P = \frac{MV + M'V'}{T}$$

where P stands for price-level, T for number of transactions, M for Quantity of Money *i.e.*, currency.

V for transaction velocity of circulation, M' for bank money

V' for velocity of circulation of bank money.

This form of equation was developed by Fisher and called as Fisher's equation of exchange. Fisher assumed that V, V' and T are constant. There is fixed proportion between M and M'. Therefore, we can conclude it as under:

(a) P changes because M changes. P is the passive factor.

(b) P changes in the same proportion in which M changes.

In short, there is direct and proportional relationship between quantity of money and price level.

We, further conclude that:

(i) There is inverse relation between value of money and quantity of money.

(ii) The change in value of money is inversely proportional to change in the quantity ofmoney. When quantity of money is doubled, value of money is halved.

6.2.2 Assumptions

The main assumptions of the theory are as stated below:

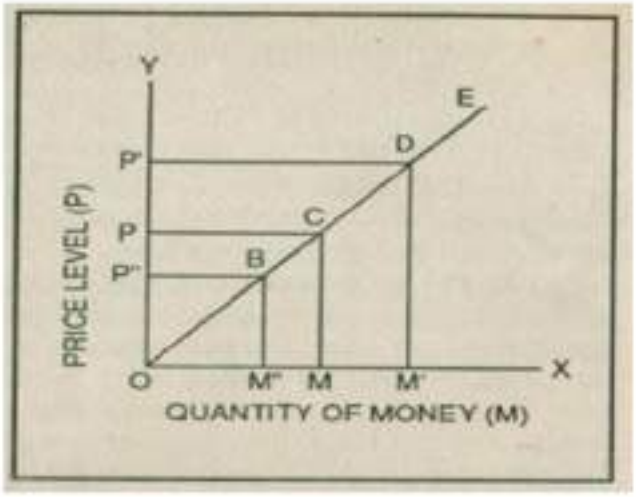
1. **Constant Ratio between Bank Money and Currency Money:** The ratio of credit money to cash remains stable during the short period. In fact, bank money (M1) is a function of currency money (M). With expansion of currency, bank money expands and vice versa.
2. **Money is a Medium of Exchange:** Fisher's approach is based on the medium of exchange function of money. Money is used for transactions purposes only.
3. **No Hoarding:** There exists no hoarding. It means that the entire quantity of money is put into circulation.
4. **Full Employment:** The theory is based on the assumption of full employment. It means there are no idle resources available to expand the production of goods and services.
5. **Price Level (P) is a Passive Factor:** The price level is a passive factor itself. It states that price is affected by other variables of the equation and it does not effect the other variables ofthe equation. An increase in the supply of money (M) or velocity of circulation (V) raises the price level and vice versa. An increase in transaction reduces the price level but an in-price level does not increase supply of money or velocity or total transactions.
6. **Constant Velocity or Constant V and V:** The velocity of circulation of money (V) is an independent element in the equation and is constant in the short period. Any change in the quantity of money (M) does not affect velocity of circulation because it depends on exogenous factors like banking habits of people, population, consumption pattern. These fac- tors are normally stable in the short period, so V also remains constant. Similarly M does notaffect V.
7. **Constant Volume of Transactions (T):** The total volume of trade or total transactions are also not affected by any change in the quantity of money (M) and other factors in the equation because Fisher says that T depends upon natural resources, technological development and population etc. which are outside the equation, so that any change in M does not affect T.

8. **Long Period:** Fisher's theory is based on the assumption of long period. According to this theory, a proper co-ordination is established between quantity of money and price level in the long run.

6.2.3 Diagrammatic Presentation

It should be remembered that the equation of exchange in itself is not the quantity theoryof money. Fisher has used it only as a tool to prove the validity of the theory. For better understanding, the theory can be expressed with the help of a diagram given below:

In this diagram, quantity of money is shown along the horizontal axis and the general price level along the vertical axis. When the quantity of money is equal to OM price level is OP. If quantity of money rises to OM', price level also rises to OP'. The proportionate rise in the general price level $\frac{P-P'}{P}$ is equal to the proportionate increase in the quantity of money $\frac{M-M'}{M}$. Similarly, when the total quantity of money in circulation falls to OM", price level also falls to OP" and the proportionate fall $\frac{M-M'}{M}$, in the quantity of money. Thus change in the quantity of money causes an equi-proportionate change in the price level. By joining the points B, C and D, we get the curve BE. This curve forms an angle of 45° with the horizontal axis and represents the equi- proportionate relationship between AM (changes in M) and AP (changes in P).



6.2.4 Criticisms

The quantity theory, as propounded by Fisher is by no means the final word regarding the determination of value of money. It has been subjected to a severe criticism. It has been denounced as unsuitable, at least, in its rigid form. The main points of criticism are as under:

1. **No Fixed Relation between M and M':** The theory has assumed a constant ratio between the amount of currency (M) and the amount of credit money (M'), so that when M is doubledM' is also doubled. In actual practice, however, it may not be so. For example, during periodsof boom and depression M and M' do not move in the same proportion, or even in the same direction. During boom period, because of greater demand for credit, M' will continue to riseeven if there is no increase in M. On the contrary, during depression M' will be low in spiteof a rise in M.
2. **Causal Process not Explained:** The theory has been expressed in the form of an equation. It becomes too mechanical. It does not explain what forces arise when M changes which lead to subsequent increase in P. For example, Keynes was to explain later that increase in M reducerate of interest which cause investment, output, costs to mount and thus give the price levelthe push in the upward direction.
3. **Difficulty of Measuring Variables:** It is very difficult to measure V and V. Again T is difficult to calculate because it is not easy to add up transactions expressed in different units like meters of cloth, tons of steel etc. Moreover, V, V and T are not constant.
4. **Stress on Supply Side:** The theory is based on both the demand and supply sides, but in reality, more attention is paid to changes on the supply side *i.e.* M to the exclusion of otherforces. Demand side remains constant at PT.
5. **Ignores Money as a Store of Value:** Money is not only a medium of exchange; it is a store of value as well. The quantity theory as developed by Fisher ignores this second important function of money. An increase in demand for hoarding should be treated as a reduction in money supply in circulation.
6. **Assumption of Full Employment:** The theory assumes full employment, while in reality; generally, unemployment is seen, thus rendering inoperative the logical sequences of the Quantity Theory. Keynes proved that Say's Law of Markets was

invalid.

7. **Static Theory:** The theory applies only in a world in which many things remain constant. But in the real-world changes are always taking place. Thus, the theory is not dynamic.
8. **Money not a Medium of Exchange:** Quantity theorists regard money only as a medium of exchange. They believe that the entire quantity money is used for purchasing goods and services. It has, however, been pointed out by Keynes and other modern economists that money is used as a store of value also.
9. **Ignores the Role of Rate of Interest:** It is not a satisfactory theory of money because it ignores the role of the rate of interest. The relation between the changes in the supply of Mand P is not direct but indirect. Given the liquidity preference, an increase in the supply of Mlowers the rate of interest and consequently investment increases which along with consumption expenditure raises the level of income and output thereby affecting price level.
10. **Existence of Barter System:** The theory assumes the existence of the barter system. But in most of the backward countries barter is still popular with rural population. Thus, the scopeof the theory becomes limited.
11. **Ignores Short Period Fluctuations:** The theory considers only long period changes in prices, as a result of changes in the quantity of money. It fails to explain short period fluctuations which, according to Keynes, are of greater significance.
12. **Fails to Integrate the Theory of Value and Theory of Money**: Keynes has pointed out that the equation of MV = PT fails to integrate the theory of money with the theory of value. Money plays an active role and affects rate of interest which in turn determines the level of output and employment. Therefore, theory of prices should form an integral part of theory ofmoney.

This drastic criticism against this theory should not lead us to believe that it is absolutely useless. Indeed, the Chicago School of Economists has tried to show that the money supply is one significant influence on the value of money. In fact, there has been a tendency to over-criticize the theory and try to read into it more than that Irving Fisher really intended. In reality, the theory merely illustrated a static position of equilibrium which is assumed to prevail at a given moment

either before or after a change has taken place. Money, however, is a dynamic factor in the economy, so the picture of the situation presented by the equation is not a realistic one.

Check Your Progress- I

Q1. What do you mean by quantity theory of money?

Ans.

Q2. Define demand for money in Fisher's equation.

Ans.

6.3 Balance Approach or Cash Balance Equation

Another version of quantity theory of money is contained and finalized in cash balance or Cambridge approach. It was developed and finalized by a group of Cambridge economists i.e. Marshall, A.C. Pigou, Robertson and J.M. Keynes. This theory states that value of money is deter- mined by demand for and supply of money. At any particular time, supply of money remains constant, therefore, changes in demand for money have more influence on value of money. Thistheory lays more stress on demand for money compared to its supply. Therefore, it is also known as Demand Theory of Money.

Supply of Money

Supply of money at a certain time includes all the notes, coins with the public and the demand deposits. Therefore,

Supply of Money = Notes + Coins + Demand Deposits

Demand for Money

Demand for money refers to people's desire for holding cash balances. According to cash balance equation demand for money is not for the purpose of transaction alone but for the purpose of storing up value also. Therefore, people store up value in the form of cash balances so as to use the same as a medium of exchange. Cash balance is that proportion of the annual real income which people desire to hold in the farm of money. Thus, total demand for money is the aggregateof ca 1 balance of money holdings of all individuals at a given moment of time.

Demand for Money = Cash Balances

Different Equations of Cash Balance Approach

Different economists have put forward the following equations to determine the value of money.

1. Marshall's Equation: According to Marshall, the value of money is determined not only by changes in money supply but also by change* in demand for money. Symbolically,

$$M = KY + K'A$$

M = Quantity of Money, K = Fraction of real income, Y = Aggregate real income

K' = Fraction of total assets, A = Aggregate money value

The followers of Marshall abandoned the asset part of the equation. Symbolically,

$$M = KY$$

$$Y = PO$$

P = Price level, O = Output

Therefore, the equation can be expressed as

$$M = KPO$$

$$P = \frac{M}{KO}$$

In terms of purchasing power, it is opposite to the price level

$$P = \frac{KO}{M}$$

Thus, there is inverse and proportionate relationship between value of money and money supply.

2. Pigou's Equation: Pigou has given his equation of money in the form of purchasing power or value of money. In terms of value of money

$$P = \frac{KR}{M}$$

P = Value of money, K = Properties of cash held by people.

R = Real resources, M = Money supply.

In terms of price level, the equation can be written as

$$P = \frac{M}{KR}$$

Since K and R are assumed to be constant, so there is direct and proportionate relation between money supply and price level. According to Pigou, demand for money

consists of legal money.So, he modified the equations as

$$P = \frac{KR}{M}[C + h(1 - C)]$$

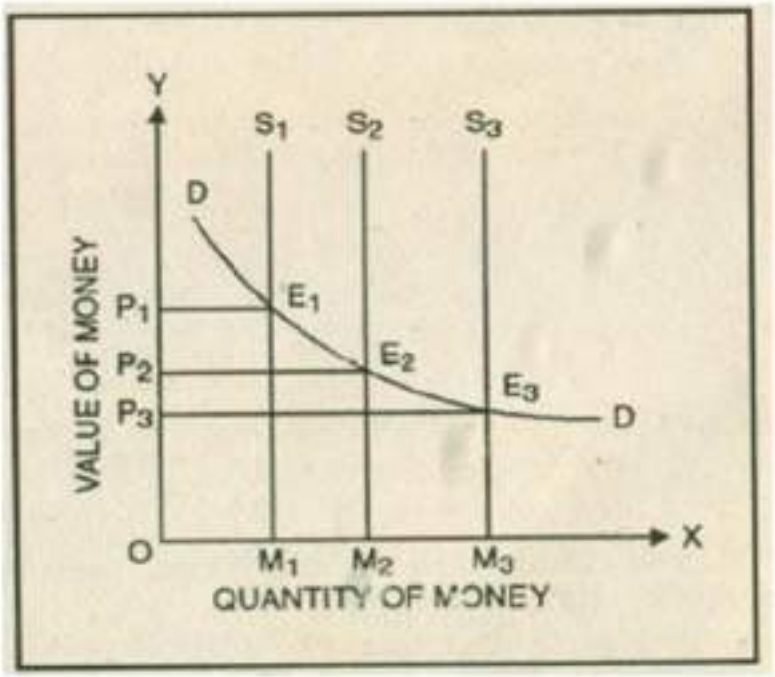
C = Cash with people, 1 - C = Bank deposits, h = Proportion of bank deposit held by bank

This can be shown with the help of figure.

In the diagram *DD* is the demand curve for money and M_XS_1 *M2S2* and Af3S3 are the supply

curves of money drawn on the assumption that money supply is fixed at a point of time. It means

money supply is a stock concept. On Y-axis Pigou's purchasing power or value is taken. When the money supply is Af3S3 and demand is *DD*, in that case the value of money is *OP1*. Now withthe increase in money supply from *OM1* to *OM2*, the value of money is reduced from *OP1* to *OP2*. The fall in the value of money by *P1P2* exactly equals the increase in the supply of money by *M1M2*. If money supply increases three times, from *OM1* to OM3 the value of money is reducedby exactly one third from *OP1* to *OP3*. Thus, *DD* is the rectangular hyperbola where elasticity isequal to one.



Thus, it is clear that the price level will vary inversely with *K* or *R* and directly with *M*. Pigou inhis equation has laid stress on *K* rather than *M*. It means the value of money depends on demandfor money to hold cash.

3. **Robertson's Equation:** Robertson has given the more or less the similar equation of exchange as given by Pigou. The only difference between the two is that Pigou gave total real resources whereas Robertson gave the volume of total transactions. This equation is as

$$M = KPT$$

or

$$P = \frac{M}{KT}$$

P = Price Level, M = Quantity of Money, T = Quantity of Goods and Services

K = Portion of T which people want to keep cash.

4. **Keynes' Equation:** Keynes in his equation laid more emphasis on consumer goods.

$$n = P(K + rk') \text{ or } P = \frac{K + rk'}{n}$$

According to Keynes, people hold cash to buy consumer goods and services. Keynes equation is

n = Quantity of money, P = Price level, K = Proportion of consumer goods

rk' = Proportion of Cash reserves

Criticisms:

1. **Nothing New:** It is alleged that the cash balance equation is simply quantity theory in new algebraic dress. The conclusions of the analysis are not different from those of transaction analysis except for a change in emphasis.
2. **Fails to explain casual process:** This approach also fails to explain the casual process. It holds that changes in P are caused by changes in K. But the authors have failed to realize thatK itself is influenced by changes in P. It is, therefore, both a cause and effect of changes in P.
3. **Speculative Demand for Money Ignored:** Explanation of demand for money is incompleteas it fails to take into consideration the speculative demand for money which is a very powerful factor in determining the demand for money in modern times. This means that the link connecting the theories of interest and level of

income through the demand for money ismissing.

4. **Long Period Theory:** Like traditional theory, Cambridge equation also explains only long period changes in the value of money. It fails to explain short period fluctuations.
5. **Narrow Approach:** An important drawback in cash balance equation is that it deals with money in terms of consumption goods alone. It is a narrow view of the determination of theprice level.
6. **Static Theory:** The cash balance approach provides a set of equations which are only exercises in comparative statics. These cannot analyze the dynamic economic analysis.
7. **Fails to explain Trade cycles:** This theory fails to explain trade cycles. It does not explain the causes that give rise to boom and depression.
8. **Excessive Emphasis on Value of Money:** It ignores the real forces like income, saving andinvestment on the value of money. The theory considers the changes in demand for money only which bring about changes in value of money which is wrong.
9. **Unreal Assumptions:** It assumes some of the factors like K and T to be constant. But in real

life K and T are not constant. They are subject to change.

6.4 Comparison Between Transaction and Cash Balance Approach

A. Similarities: Both the equations have following similarities.

1. **Same conclusions**: Both equations reach the same conclusion that price level changes in the same proportion as the quantity of money does.
2. **Same Equation:** The cash balances equation $P = \frac{M}{KT}$ of Robertson is quite similar to the

equation of exchange given by Fisher, $P = \frac{MV}{T}$. Both the equations use the same notations, meaning the same thing. The only difference lies in V and K. But in reality, V and K arereciprocal to each other.

3. **Functions of Money:** Both the approaches regard function of money as medium of exchange. To Robertson, Fisher equation and Cambridge equations are not fundamentallydifferent from each other.
4. **Concept of Money Supply:** From the different equations we find that MU + M'U' of Fisher equation and M' of Robertson and Pigou and 'n' of Keynes refer to

total supply of money.

B. **Dissimilarities:** The points of dissimilarities between transaction and cash balance approach are stated below.

1. **Functions of Money:** In Fisher theory money has been treated as medium of exchange whereas in Cambridge equation, its function of store of value has been given ducimportance.
2. **Velocity of Circulation:** Fisher theory lays more emphasis on velocity of circulation of money. Cash balance theory lays greater emphasis on that part of total money which is kept cash.
3. **Nature of Price:** In Fisher Equation and in Cambridge equation price is not used identically. In fisher equation price refers to general price level. But in Cambridge versionprice is concerned only with the prices of consumption goods.
4. **Relative Importance of Demand for Money and Supply of Money:** *Fisheman* approachhas stressed on supply of money. But in the cash balance approach there is shift of emphasis from the supply of money to the demand for money. It is more realistic since demand for money definitely plays an important role.
5. **Definition of Money:** The two approaches to the quantity theory of money use the concept of money in different ways. The Fisherian version emphasis is on the medium of exchangefunction of money. The Cambridge version emphasize on the store of value function of money. In this way, Fisher's version of quantity uses the concept of money in a narrow sense.
6. **Transaction Velocity and Income Velocity:** Fisher approach stressed on the importance of transaction-velocity or circulation of money. On the other hand, Cambridge equations emphasize on that part of income which is kept in the form of cash balance. Therefore, Fisher considers the transaction velocity of money while cash balance approach considersthe income-velocity.
7. **Stock and Flow Concepts:** The Cambridge version regards money as a stock concept, where as in Fisher's equation it is a flow concept. According to Cambridge equation, the money supply refers to given stock at any point of time. But Fisherian equation refers money supply as a flow. To elaborate this argument, Fisher links the flow of money expenditure and money holdings. But

the Cambridge economists link the money holding and stock of wealth. It is on this account that Fisher emphasizes V whereas Cambridge economists lay stress on the importance of K.

8. **Nature of V and K:** The nature of V and K has been interpreted differently by the two approaches. In Fisher's equation velocity of circulation is a highly mechanical concept. It isa measure of speed at which money changes hands. Velocity depends on various factors like length of the pay period, spending habits of the people, the development of banking system, etc. But on the other hand, the Cambridge version has laid stress on K which depends on psychological and introspective factors like habits, human attitude, behavior, etc.

6.5 Superiority of Cash Balance Approach

Despite similarities and dissimilarities between the two approaches, cash balance approach is certainly superior to the transaction approach on the basis of the following points:

1. **Basis of Liquidity Preference Theory:** Further, the cash-balances approach has helped Keynes to develop his famous "Liquidity Preference Theory" which is based on the preferences of the people to hold cash for various motives.
2. **Explanation of Trade Cycle:** It is also claimed that K is definite while V is vague. It is easier to find out K rather than V. Cash balance approach is, therefore, more significant inunderstanding the cyclical fluctuations.
3. **Integration of Theory of Money with the Theory of Value:** By recognizing the forces of demand and supply and using demand supply analysis for the determination of value of money, the Cambridge equation has integrated the theory of money with the general theoryof value.
4. **Casual Process:** Fisher's approach explains that changes in the price-level are caused by Changes in supply of money. This does not explain the casual process between money supply and the price level. Cambridge approach explains how price level changes even ifmoney supply is hold constant due to changes in K.
5. **Broader Concept of Demand:** Cambridge equation gives a broader concept of demand because according to the approach money is demanded not only for transaction but also forstoring of value

6. **Importance to Demand Side:** Another achievement of Cambridge equation is that it takes into consideration supply as well as demand for money. In the traditional theory, demandside is ignored.
7. **More Realistic:** The Cambridge equation stresses on cash balances. They regard human motives as important factor which affect the price level. The subjective factor behind K has led to the study of factors like expectation, uncertainty, motives for liquidity and i ateof interest.
8. **Short Period:** Cambridge equation is more appropriate as it studies short term factors. On the other hand, Fisher's equation studies long term factors.
9. **Easy Calculation:** According to Kurihara, calculation of K' and 'R' in Cambridge equation is easier than V and T in Fisher equation.
10. **Based on Micro Factors:** Another reason for the superiority of Cambridge equation is that it is based on micro decisions and behavior. Contrary to this Fisher equation is criticized on the ground that it is based on macro factors.

Check Your Progress- II

Q1. Define Marshall's equation of money.

Ans. .....

Q2. Discuss the ssuperiority of cash balance approach.

Ans. .....

6.6 Liquidity Preference Theory

The famous economist of twentieth century, Lord Keynes explained a monetary method ofthe determination of rate of interest in his famous book *'The General Theory of Employment, Interest and Money"*. This theory is also known as Liquidity Preference Theory. According to thistheory, interest is price of the services of money. Accordingly, interest is determined by demand

for and supply of money. Interest is a monetary phenomenon.

First of all, we must know what is meant by interest? According to Keynes, "Interest is the rewardfor parting with liquidity". And the rate of interest is the premium which is to be offered to induce the people to hold wealth in some form other than the hoarded money.) He further explained, 'Therate of interest is the premium which is to be offered to induce the people to hold wealth in someform other than the hoarded money."

According to Prof. Mayers, —Liquidity preference is the preference to have an equal amount of cash

rather than claims against others."

In other words, people give preference for holding money in cash form (liquidity) to lending it toothers. Thus, preference for liquidity is called liquidity preference. Again, they will, therefore, part with liquidity only if they are given a reward or price for it. This reward for parting with liquidityis called interest.

Determination of Interest

According to liquidity preference theory, interest is determined by the demand for and supply of money. It is determined at a point where supply of money is equal to demand for money.A detailed description of demand for and supply of money is given as below.

6.6.1 Demand for Money

To Keynes, money is not only a medium of exchange, but also a store of wealth. Now, there arises a question, why people want to hold cash? According to Keynes, there are three motives behind liquidity preference.

6.6.2 Transaction Motive

According to Peterson, "The transactions motive relates to the need to hold some quantity of money balances (either currency or demand deposits) lo carry on day-to-day economic dealings". Most of the people receive their incomes by the week or month while the expenditure goes on every day. Therefore, a certain amount of ready money is kept in hand to make daily payments. Not only individuals and households need money to meet daily requirements, but business firmsalso need it to meet daily transactions like the payment of wages, purchase of raw-materials and to pay for the cost of transport, etc.

The demand for money for transactions purposes depends upon various factors like income, the general level of business activity, and the interval at which income is received. For instance, if income is received after a long interval of time, a larger proportion of income will have to be kept in ready cash. Similarly, where goods are available on credit, fewer amounts of ready cash is needed. Thus, as a general rule, it can be said that the transactions demand for money is income elastic and may be expressed a[c]

$$(L_t) = f(Y)$$

Demand for money for transaction motive (L_t) is the function (f) of income (Y) i.e. depends onincome.

6.6.3 Precautionary Motive

Every individual and firms keep their savings in liquid form for rainy days. Some part of theincome is saved to provide for contingencies as illness in the family, a journey that may be required to be undertaken under compelling circumstances, some guests may arrive, some moneyis to be kept apart for some such event as birth or marriage, some friend or relative may requirefinancial assistance. For all such purposes, the person would like to keep money in liquid form orsemi-liquid form, e.g., in savings bank. Liquidity preference for such motive is not as high as forthe transaction motive. Nevertheless, there is some liquidity preference for precautionary motives. This fact can be expressed in the form of an equation as

$$L_p = f(Y)$$

Demand for money for precautionary motive (L_p) is a function (f) of income (Y) i.e. depends onincome.

According to Keynes, demand for money for precautionary motives depends on income. Keynes

denoted M_1, the combined demand for these two motives. Thus,

$$M_1 = L_t + L_p = f(Y)$$

In fig. 1 vertical line AB represents the demand for precautionary and transactionary motives. It signifies the fact that demand for money for these two purposes remains OA irrespective of any change in rate of interest.

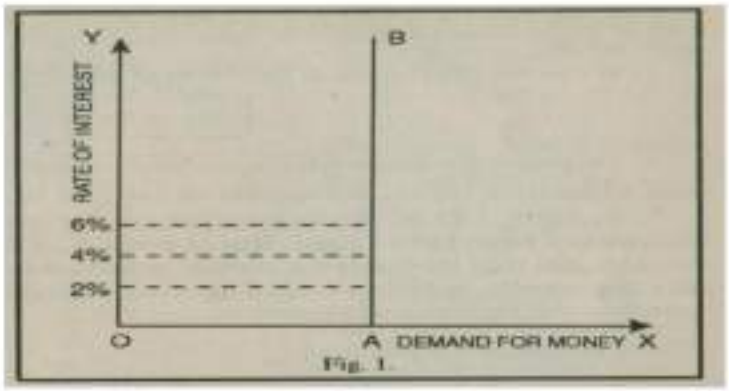


Fig. 1

6.6.4 Speculative Motive

If a man has money that he can spare even after satisfying his consumption needs and after building funds sufficient to meet contingencies, he would like to invest money in such a way that brings him profits. In this case he would not be very keen for keeping his money in liquid form. The liquidity preference is low in such cases. Thus, holding back money in cash form in the hope of earning more income in future is called speculative motive. According to Keynes "Speculative motive is the motive of earning profit from knowing better than the market what the future will bring forth." Therefore, people prefer to hold cash to earn more profit on account ofchange in future rate of interest or price of bonds. In short, demand for money for speculative motive is interest elastic.

A high rate of interest can bring some money kept for precautionary motive for lending, but it will hardly be possible to bring out the money kept for transactional motive for lending. Themore the money that is kept for the first two motives, the higher will be the rate of interest in thesociety and vice-versa.

It can be expressed in the form of an equation

$$M2 = f(r)$$

Demand for money for speculative motive (M_2) is a function (f) of rate of interest (r) i.e. it depends on the rate of interest.

In fig. 2, CD is the demand curve for speculative motives. It slopes downward from left toright. But at point K, it becomes parallel to X-axis. It indicates that demand for money is inversely related to rate of interest. In other words, at higher rate of interest, demand for moneyfor speculative motives will be low and vice-versa.

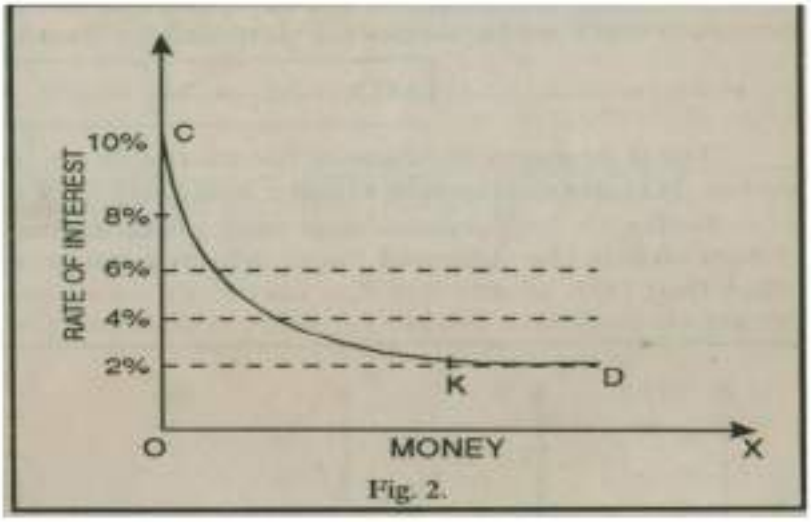


Fig. 2.

Now, the total demand for money (MD) in the summation of transaction, precautionary andspeculative demand for money.

$$MD = M_1 + M_2 = f(Y, r)$$

Total demand for money for all the three motives i.e. (I) transaction motive (II) precautionary motive and (III) speculative motive.

In fig. 3 (A) transaction and precautionary demand for money is shown. AB is the demand curve which is perpendicular to X-axis. It indicates that rate of interest has no effect on it. In other words, with the increase or decrease in rate of interest demand for money remains stable.

In fig. 3(B) speculative demand for money is shown. JK is the demand curve which at point K becomes horizontal to X-axis. It signifies that rate of interest does affect the demand which is lower and vice-versa

In fig. 3 (C) total demand for money is shown. It is the summation of transaction, precautionary and speculative demand for money. It is DD curve which at point M becomes horizontal to X-axis. This demand curve is known as liquidity preference curve.

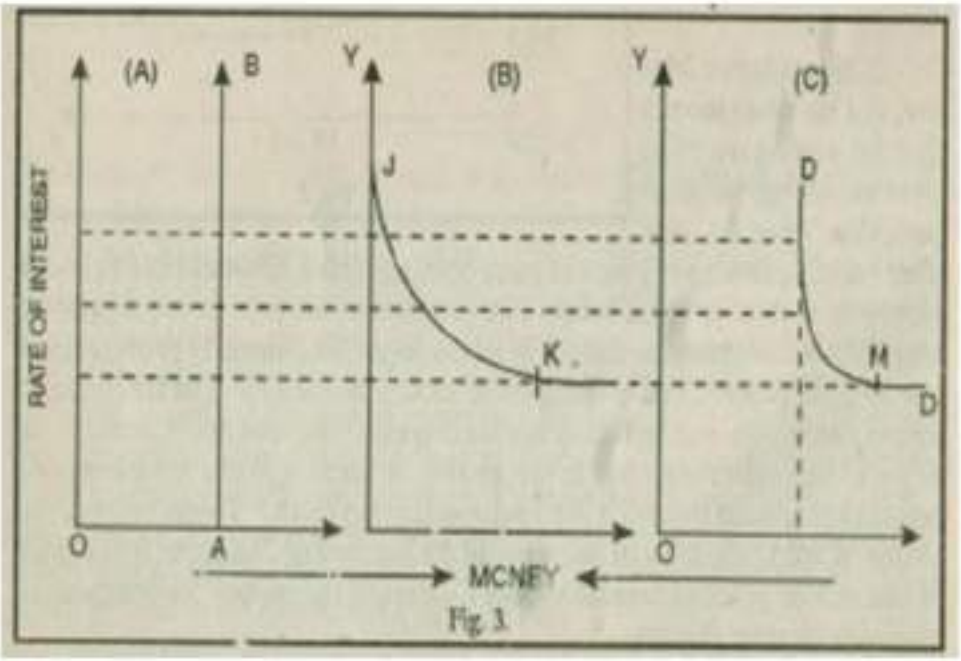


Fig. 3

6.6.5 Supply of Money

By supply of money is meant the sum total of currency and bank deposits held by non-banking public. The money supply in a country is determined by the monetary authority such as the central bank. Money supply is not related to the rate of interest. It is the need of the economy which will determine the quantity of money.

Therefore, the supply curve of money (M) is shown as a vertical line parallel to theordinate (Y) axis as shown in Fig. 4.

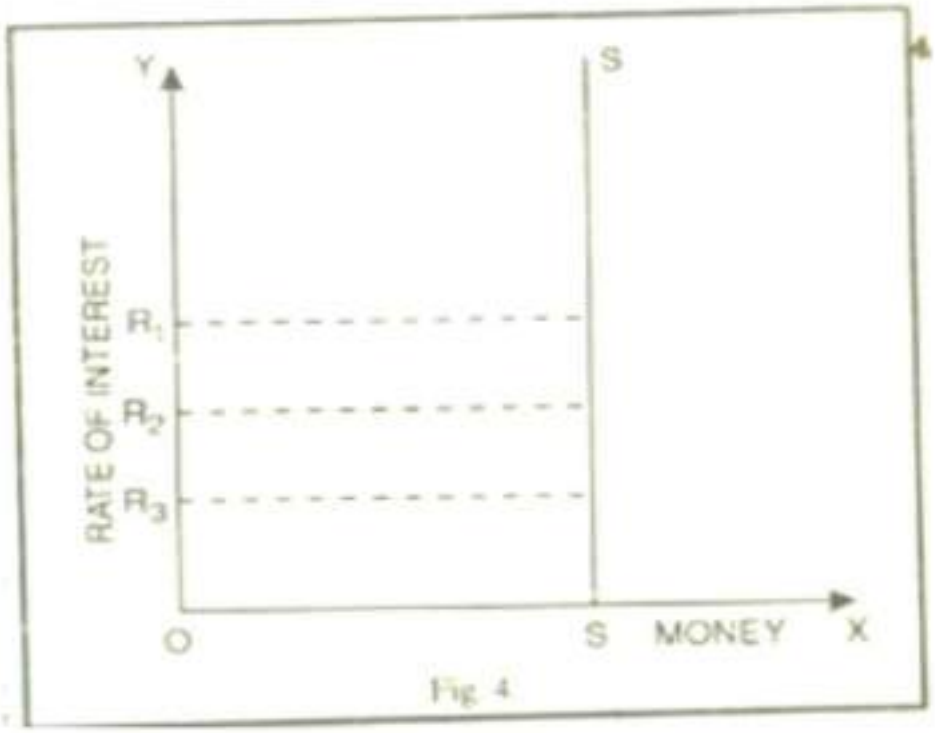


Fig. 4

Equilibrium Rate of Interest

According to Keynes, equilibrium rate of interest is determined at a point where demand for money is equal to supply of money.

$$MD\,(LP) = MS.$$

In fig. 5 MS is the supply curve of money where LP is the liquidity preference or demand curve for money. Both these curves intersect each other at point E which determines OR rate of interest. However, effect of change in demand for money and supply of money are explained asunder.

Change in Demand for Money

If the supply of money remains constant, and as the liquidity preference for money increases rate of interest also increases and vice-versa.

In fig. 6 SM is the supply of money curve. M, M_1, M_2 are the demand for money curves. Now suppose that initially M is the demand curve. Here equilibrium is restored at point E where M curve cuts MS and or rate of interest is determined. If liquidity preference increases to M1, new equilibrium will be at E1 and the interest rate increases to OR_1. If contrary to this liquidity

preference curve falls to M2, equilibrium will be at point M2 which will determine OR2 interestrate.

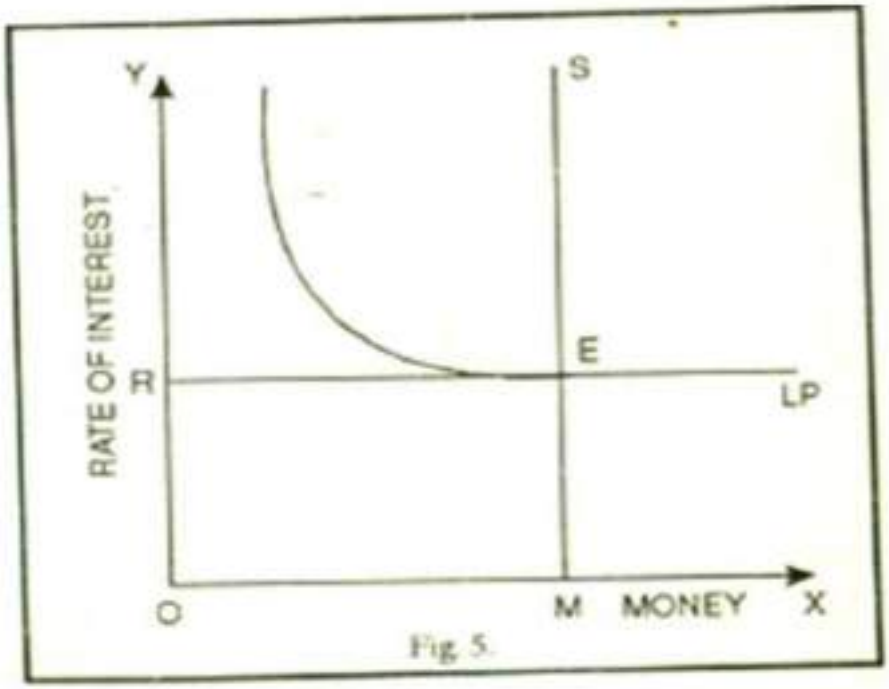


Fig. 5.

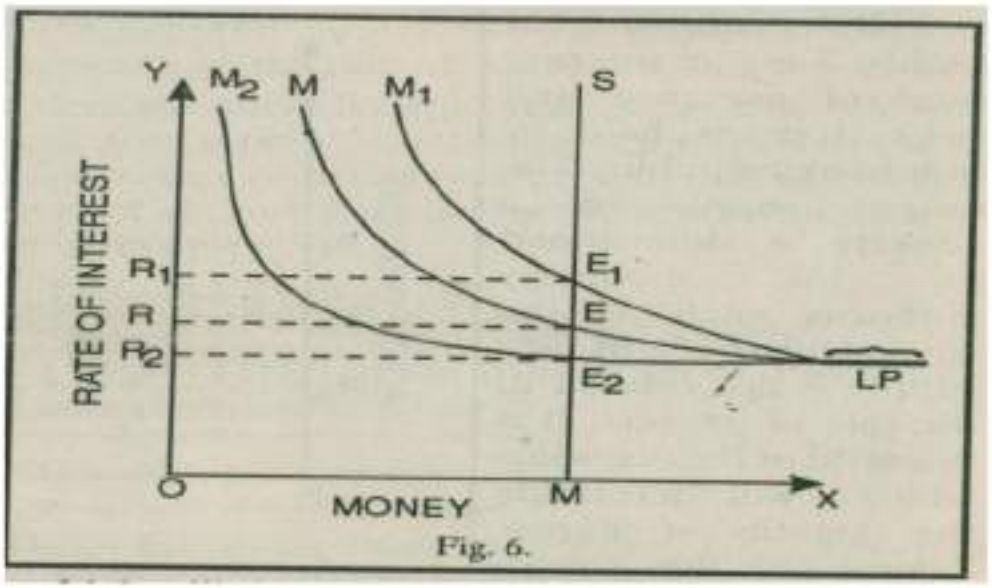


Fig. 6.

Change in the Supply of Money

If demand for money remains constant, as the supply of money increases, rate of interest decreases and vice-versa.

In fig. 7 LP is the liquidity preference curve while MS, M1S1 and M2S2 are the supply curves. In the beginning, MS is the supply curve which intersects demand curve at point E. Hereequilibrium rate of interest is OR. Now if the supply of money decreases to M1S1. Here LP curvecuts supply curve at E2. The equilibrium rate of interest is OR1.

On the other hand, if supply of money increases to S2M2, equilibrium interest rate falls to OR2.

Main Points of the Theory

1. Interest is a monetary phenomenon and the rate of interest is determined by the intersection of demand for money and supply of money;
2. Given the supply of money, the rate of interest rises as the demand for money increasesand falls as the demand for money decreases
3. Given the demand for money, the rate of interest falls as the supply of money increasesand rises as the supply of money decreases
4. The rate of interest cannot be reduced beyond the lower limit set by the liquidity trap.

Check Your Progress- III

Q1. Explain transaction motive of money.

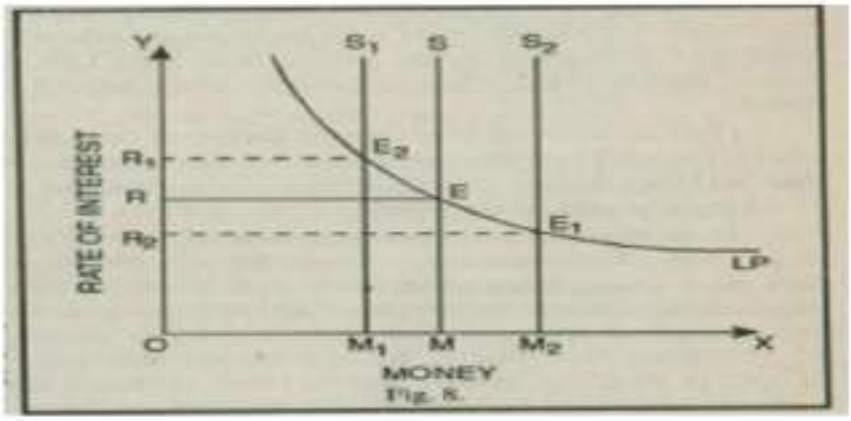
Ans.....

Q2. Define speculative motive of money.

Ans.....

6.6 Liquidity Trap

By liquidity trap, we mean a situation where the rate of interest cannot fall below a particular minimum level. It means rate of interest is always positive. It cannot be zero or negative. It can beshown with the help of fig. 8.



Along the X-axis is represented the speculative demand for money and along the Y-axis the rateof interest. The liquidity preference curve LP is downward sloping towards the right. It signifies that the higher the rate of interest, the lower the demand for speculative motive and vice-versa. Thus, at the high current rate of interest OR, a very small amount OM is held for speculative motive. This is because at a high current rate of interest much money would have been lent out orused for buying bonds and therefore less money will be kept as inactive balances. If the rate of interest rises to OR1 then less amount OM1 will be held under speculative motive. With the further fall in the rate of interest to OR2, money held under speculative motive increases to OM2. It will be seen in Fig. 9 that the liquidity preference curve LP becomes quite flat *i.e.*, perfectly elastic at a very low rate of interest.

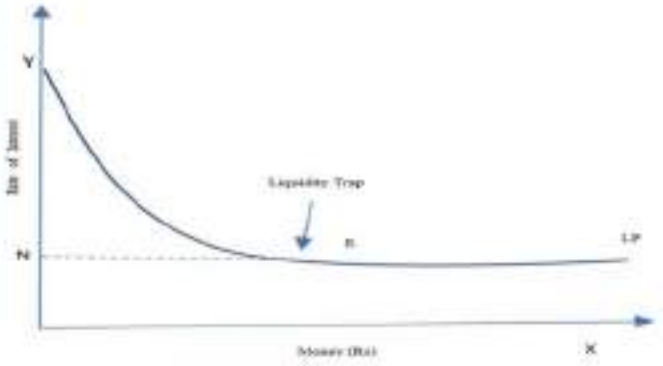


Figure 9

It is horizontal line beyond point E, towards the right. This perfectly elastic portion of

liquidity preference curve indicates the position of absolute liquidity preference of the people. That is, at a very low rate of interest people will hold with them as inactive balances any amount of money they come to have. This portion of liquidity preferences curve with absolute liquidity preferenceis called liquidity trap by some economists.

$$M1 = L1\ (Y)$$

Now let us examine why interest rate cannot fall below a particular level:

A. substituting bonds for money, apart from loss of liquidity, also in values some cost and inconvenience. Some minimum return is required to offset this cost and inconvenience. When the interest rate is very low say zero, the lenders will not lend money.

B. At the lowest possible interest rate, people will hold money rather than to make an investment in bonds or securities.

C. The rate of interest cannot fall below floor level. There is every possibility for the interest rate to increase it has reached its lowest level and hence the bond prices may fall. The investors would not buy bonds under these circumstances. They would rather like to sell their bonds.

D. In case of low rate of interest, investors hope that the rate of interest would increase and come to the natural level. A rise in the interest rate involves lesser capital losses than a rise inthe rate of interest after reaching the minimum level.

Thus, the rate of interest cannot fall below a particular level. The minimum rate of interest represents the liquidity trap, where people keep all cash with them. Instead of buying of bonds and securities, they sell them. According to Keynes there of interest can never reach zero because once the rate of interest reaches floor reaches floor level the people expect it to increase.

6.7 Importance of Liquidity Preference Theory

1. **Importance of Money:** Keynes' liquidity preference theory of interest highlights the importance of money in the determination of the rate of interest. According to this theory, interest is a monetary phenomenon and the rate of interest is determined by the demand for and supply of money.
2. **Importance of Liquidity Preference:** Liquidity preference or the demand for money has attained the special importance in Keynes' theory of interest refers to the

desire of the people to hold their wealth in liquid form (i.e. to hold cash). Keynes gives three reasons for holding cash, i.e., the transactions motive, the precautionary motive, and the speculative motive. Interest has been considered as the reward for parting with liquidity. Thus, Keynes has laid greater emphasis on the store of value function of money.

3. **Importance of Speculative Demand:** Speculative demand for money or demand for idle balances is the unique Keynesian contribution. It means the demand for holding certain amount of cash in reserve to make speculative gains out of the purchase and sale of bonds through future changes in the rate of interest. According to Keynes, the rate of interest is determined by the decision as to how much saving should be held in money and how much allocated to bond purchase.
4. **More Generalized:** The classical theory was a special theory applicable only to a full- employment situation. Keynes theory is more general in that it is applicable both to full as wellas under employment situations.
5. **Integrated Theory:** A great merit of Keynes theory is that it has integrated the theory of interest with the general theory of output and employment. Employment depends on the levelof investment and inducement to invest is influenced apart from marginal efficiency of capital,by the rate of interest.
6. **Integration with Price:** Keynes has integrated the theory of interest with the theory of price.The classical writers had unduly emphasized such real factors as abstinence and timepreference. According to Keynes, interest is the price of money, and like the price of any commodity, it is determined by the demand for and supply of money.
7. **More Practical:** The theory is of great practical significance also. The rate of interest dependson the demand for and supply of money. The supply of money is regulated by the governmentor the monetary authority of the country. Therefore, the government can greatly influence therate of interest by regulating money supply. Also, through its liquidity trap hypothesis, the theory stresses the limitation of monetary authority in lowering the rate of interest beyond a certain level.
8. **Long Term Vs Short Term Interest Rates:** According to Keynes, interest is a reward for parting with liquidity. The interest rate differs on debts of different lengths and maturities. The interest rate on daily loans will be different from the rates of

interest on weekly, monthly and yearly loans. Debts of longer maturity like three, five or ten years will have different interestrates.

6.8 Criticisms/Shortcomings of Liquidity Preference Theory

The liquidity preference theory of interest has been widely criticized by Prof. Hansen, DonPatinkin and Hazlitt on the following bases:

1. **No liquidity Without Savings:** Keynes argued that interest is the reward for parting with liquidity. However, critics point out that without saving there can be no funds. The question ofparting with liquidity arises only after we have saved money. If there are no savings, there is no parting with liquidity either. According to Prof. Hansen, "without savings there can be no liquidity to surrender. The rate of interest is the return for saving without liquidity."
2. **Real factors ignored:** It is observed that the rate of interest is not purely a monetary phenomenon. Real factors comprising of productivity and savings play an important role in the determination of the interest-rate. According to Keynes, interest is independent of the demandfor investment funds whereas in reality cash balances of businessmen are greatly influenced by their demand for investment funds. The demand for investment funds depends on the marginal revenue productivity of capital. When marginal efficiency of capital is high, businessmen expect higher profits, there is greater demand for investment funds and so the rate of interest goes up. Similarly, if the propensity to consume of the people declines, savings would increase. Therefore, supply of funds in the market will increase which tend to lower the market rate of interest.
3. **Indeterminate:** Most economists have pointed out that like the classical and the neo-classical theories of interest, the liquidity preference theory is also indeterminate. According to Keynes, rate of interest is determined by the speculative demand for money and the supply of money available for speculative purposes. Given the total supply of money we cannot know how much is available for the speculative motive, unless we know what the transactions demand for money is. And we cannot know the transactions demand for money unless we first know thelevel of income
4. **Applicable to Advanced Countries:** Keynes theory of interest is applicable only to advanced countries where money is widely in circulation and the money market is

well organized. It is only in such countries that people can choose among different types of securities. It does notapply to backward countries where the choice of assets is limited. It cannot be applied to a barter economy.

5. **Contradictory:** According to the theory, the rate of interest depends on liquidity preference. Greater the liquidity preference, higher is the rate of interest; smaller the liquidity preference,the lower is the rate of interest. However, it is noticed that during depression, people have highliquidity preference and yet the market rate of interest is low. Similarly, in times of inflation, peoples' liquidity preference is low but the rate of interest is high. These facts contradict withKeynes theory.

In the words of Prof. Hazlitt 'For if a man is holding his funds in the form of a time deposits or short-terms treasury bills, he is being paid interest on them, there he gets interest and liquidity too. What becomes then of Keynesian theory that interest is the reward for parting with liquidity."

6. **All or Nothing Theory:** Keynes assumes that the choice always lies between liquid cash and liquid bonds. The theory is, therefore, all or nothing theory. In reality, however, various investible assets, differing in liquidity, are available in the market. A person who has some savings does not want to either hold in cash or invest it in illiquid bonds. Instead, he keeps some cash, some liquid assets, and some illiquid assets. Keynes has thus unnecessarily separated the liquid from the illiquid assets for the determination of the interest-rate.
7. **Hoarding:** Keynes in his theory has not explained the term hoarding properly. All those factors which raise propensity to hoard have not been explained by Keynes. On this account,we cannot call Keynes theory as complete.
8. **Productivity of Capital:** Keynes theory ignores productivity of capital. According to critics,interest is not only the reward for parting with liquidity but it arises due to productivity of capital. Had the capital not been productive, no one had demanded it and, hence, paid no interest on capital.
9. **Supply Side Ignored:** Keynes theory has limited validity from supply side also. It is not possible to reduce the rate of interest by increasing money supply and vice-versa. It is possible that when supply is increased, increase in liquidity preference in the same ratio may keep theinterest rate unaffected.
10. **Several Motives for Liquidity Preference:** According to Keynes, "interest is a

reward for parting with liquidity. In reality, liquidity is kept not only for three motives. Practically, liquidity preference depends on money, and other factors like rate of savings, propensity to consume, marginal efficiency of capital etc. All these factors are completely ignored by Keynes.

11. **Contrary to Facts:** Another defect of the theory is that liquidity preference theory goes directly contrary to the facts that it presumes to explain. According to this theory, the rate of interest should be the highest at the bottom of depression when, due to falling prices, people have great liquidity preference. But, in reality, rate of interest is the lowest at the bottom of adepression. On the contrary, according to the liquidity preference theory, the rate of interest should be the lowest at the peak of a boom when, due to general rise in incomes and prices, theliquidity preference of the people is the lowest. But generally, the interest rate is the highest at the peak of a boom. Hazlitt has observed Keynes liquidity preference theory as incomplete. According to him, "This type of demand and supply theory is not incorrect but it is superficial and incomplete." But this theory in modern economics occupies an important place because it takes into account monetary factors in determining interest rate. There is always less than full employment in an economy. It is with the help of liquidity preference theory that full employment can be restored.

Check Your Progress- IV

Q1. Define liquidity trap.

Ans.....

Q2. Give any two criticisms of liquidity preference theory.

Ans.....

6.9 Summary

Quantity theory of money used to determine the general price level in the economy. As per Fishers theory of money, there is direct determination of price level on the basis of supply of money. Therefore, it has direct and proportional relationship between money supply and price level. i.e., if money supply doubles, price will double and as money supply is reduced to half, itwill decline by the same amount. According to Fisher theory of money, total value of all the goods sold during a particular period is

equal to the total quantity of money spent during that period. Another approach of quantity theory of money is cash balance approach. According to this theory it is not the total money, but that portion of cash balance that people spend which influencethe price levels. Most of the people in the society hold a cash balance in their hands rather than spending the entire amount all at once. In liquidity theory of money, as given by Keynes, moneydoes not directly affect the price level. A change in quantity of money lead to change in the rate of interest, which further lead to change in income, output and employment. Therefore, all these factors will lead to change in price of goods. In liquidity trap, we mean a situation where the rate of interest cannot fall below a particular minimum level. It means rate of interest is always positive.

6.10 Questions for Practice

A. Short Answer Type Questions

Q1. Distinguish Value of Money and Price Level.

Q2. What do you mean by Quantity theory of money?

Q3. Give the equations of cash balance approach under:

a. Pigou's equation
b. Keynes's equation

Q4. What do you mean by Liquidity Trap? Explain with diagram.

Q5. Define Liquidity Preference theory briefly.

Q6. Define demand and supply of money under liquidity preference theory.

Q7. Brief Note on

a. Precautionary Motive.
b. Speculative motive

Q8. Write the assumptions of Fisher's quantity theory of money.

Q9. Explain transaction equation of money with the help of diagram.

Q10. Why rate of interest cannot fall below a particular level under liquidity preference Theory? Explain it.

B. Long Answer Type Questions

Q1. Critically explain Transaction Approach of Fisher's Theory of Money.

Q2. Discuss the Cambridge Equation or Cash Balance Approach of Theory of Money.

Q3. What do you mean by liquidity preference? Give its importance.

Q4. Critically examine Keynes's liquidity preference theory of money.

Q5. Write Similarities and dissimilarities of Transaction and cash Balance Approaches of Money.

6.11 Suggested Readings

- Money and Banking, by T.N. Hajela,
- Money and Banking by KPM Sundram.
- Money and Banking by Schuam Series, McGrawHill, Publishing Co. Ltd.,New Delhi.
- Money Economics-Institutions, Theory and Policy by Suraj B Gupta
- Innovations in Banking Services by H.R. Suneja
- Monetary Economics: Institutions by Suraj B. Gupta

M.A (ECONOMICS)

SEMESTER –II

COURSE: MACRO ECONOMICS

UNIT 7: FUNCTIONS OF COMMERCIAL BANKS AND PROCESS OF CREDIT CREATION

STRUCTURE

7.0 Learning Objectives

After reading this unit, learner will be able to:

- Know the meaning of commercial banks
- Describe the types of banks
- Understand the functions of banks

7.1 Introduction

As for as the origin of the present banking system in the world is concerned, the first bank called the "Bank of Venice" is believed to be established in Italy in the year 1157 to finance the monarch in his wars. The first bank in India was started in 1770 by the Alexander & Co., an EnglishAgency as "Bank of Hindustan" which failed in 1782 due to the closure of the Agency House in India. The first bank in the modern sense was established in the Bengal Presidency as "Bank of Bengal" in theyear 1806.

According to G. Crowther the modern banking has three ancestors in the history of banking in thisworld: -

7.1.1 The Merchants

7.1.2 The Goldsmiths

7.1.3 The Money Lenders

A. The Merchants

It was the merchant bankers who first evolved the system of banking as the trading activities required remittances of money from one place to another place which is one of the important functions of a bank even now. Because of the possibility of theft of money during physical transportation of money, the traders began to issue the documents which were taken as titles of money. This system gave rise tothe institution of "Hundi" which means a letter of transfer whereby a merchant directs another merchantto pay the bearer of hundi the specified amount of money in the Hundi and debit this amount against thedrawer of Hui

B. The Goldsmiths

The second stage in the growth of banking was the role of goldsmiths. The business of goldsmiths was such that he had to secure safe to protect the gold against theft and take special precautions. In a period when paper was not in circulation and the money consisted of

gold and silver, the people started leaving their precious bullion and coins in the custody of goldsmiths. As this practice spread, the goldsmiths started charging something for taking care of the gold and silver. As theevidence of receiving valuables, he stared to issue a receipt. Since the gold and silver coins had no mark of the owners, the goldsmiths started lending them. The goldsmiths were prepared to issue an equalamount of gold or silver money to the receipt holder. the goldsmith receipts became like cheques as a medium of exchange and a means of payment by one merchant to the other merchant.

C. The Money Lenders

The third stage in the growth of banking system is the changing of the character of goldsmiths into that of the money lenders. With the passing of time and "on the basis of experience the goldsmithsfound that the withdrawals of coins were much less than the deposits with them and it not necessary tohold the whole of the coins with them. After keeping the contingency reserve, the goldsmiths startedadvancing the coins on loan by charging interest. In this way the goldsmith money lender became abanker who started performing two important functions of the modern banking system that of accepting deposits and advancing loans. The only difference is that now it is the paper money and thenit was gold or silver coins.

7.2 Meaning and Definition of Commercial Bank

It is very difficult to give a precise definition of a bank due to the fact that a modern bank performs a variety of functions. Ordinarily a 'Bank' is an institution which deals with the money and credit in such a manner that it accepts deposits from the public and makes the surplus funds available to those who need them, and helps in remitting money from one place to another safely. Different economists have given different definitions of a bank. Some of the important definitions are as under:

According to G. Crother "*A bank collects money from those who have it to spare or who are saving it out of their incomes, and it lends this money to those who require it.*"

As per R.P. Kent "*A bank is an organization whose principal operations are concerned with the accumulation of the temporarily idle money of the general public for the purpose of advancing to other for expenditure.*l

From these definitions it can be concluded that a bank in the modern times refers to an institution which is having the following features:

7.2.1 That it is a commercial institution - earning profits

7.2.2 That it deals with money - accepts deposits from public and advances loans to the needy

borrowers.

7.2.3 That it deals with credit - it has the ability to create credit.

7.2.4 That it creates demand deposits - which serves as a medium of exchange and manages the payment system of the country.

Therefore, an ideal definition of a bank can be given as under:

A bank is a commercial establishment which deals in debts and aims at earning profits by accepting deposits from general public at large, which is repayable on demand or otherwise through cheques orbank drafts and otherwise which are used for lending to the borrowers or invested in Governmentsecurities.

7.3 Types of Banks

Banks are of various types and can be classified: on the basis of reserve bank schedule, on the basis of ownership, on the basis of domicile and basic functions. These types of banks explain below:

7.3.1 On the basis of Reserve Bank Schedule

Banks can be of the following two types on the basis of Second Schedule of the Reserve Bank of India Act, 1934 .i.e., Scheduled Banks and Non-scheduled Banks.

Scheduled Banks: All those banks which are included in the list of Schedule Second of theReserve Bank of India are called the Scheduled Banks. Only those banks are included in the list of scheduled banks which satisfy the following conditions:

That it must have a paid-up capital and reserves of Rs.5 lakhs.

That it must ensure the Reserve Bank that its operations are not detrimental to the interest of the depositors.

That it must be a corporation or a cooperative society and not a single owner firm or a partnership firm.

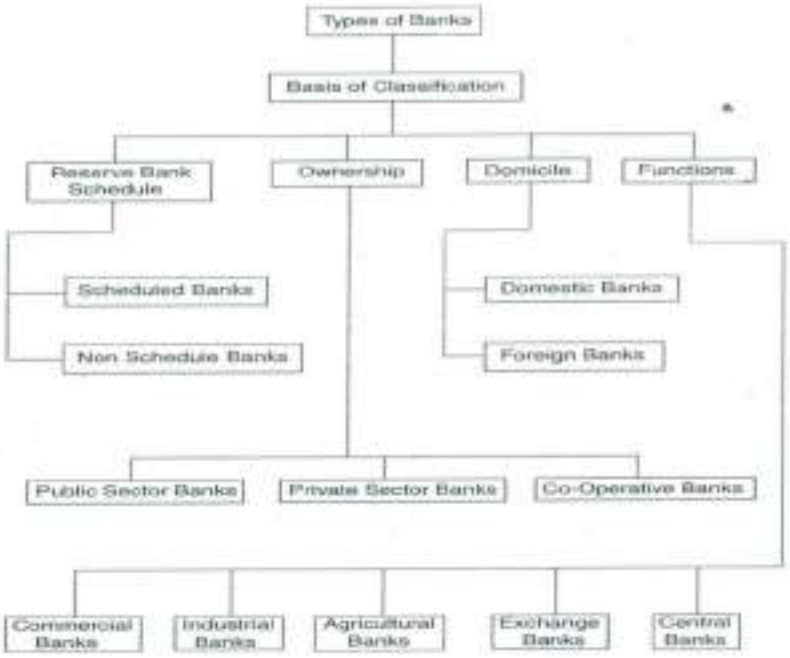
Non-scheduled Banks: The banks which are not included in the Second Schedule of the Reserve Bank of India Act, 1934 are called non-scheduled banks. They are not included in the second schedule because they do not fulfill the three pre conditions laid down in the act to qualify forthe induction in the second schedule.

7.3.2 On the Basis of Ownership

Banks can be classified on the basis of ownership in the following categories:

A. **Public Sector Banks**: The banks which are owned or controlled by the Government are called "Public Sector Banks" 1955 the first public sector commercial bank was established by passing a special Act of Parliament which is known as State Bank of India. Subsequently the Government took over the majority of shares of other State Banks which were operating at the state levels namely StateBank of Patiala, State Bank of Bikaner & Jaipur, State Bank of Travancore, State Bank of Mysore, State Bank of Indore, State Bank of Saurashtra and State Bank of Hyderabad presently working as subsidiaries of State Bank of India.

In the field of banking, the expansion of public sector was marked with the nationalization of 14 major commercial banks by Mrs. Indira Gandhi on July 19, 1969 through an ordinance with the deposits Rs.50 crores each. Again, on April 15, 1980 another group of 6 commercial banks were nationalized with the deposits Rs.200 crores each, resulting in the total of 20 such banks. But due to the merger of New Bank of India with the Punjab National Bank in 1993-94, the number of nationalized banks has been reduced to 19. The State Bank of India and its seven subsidiaries had already been nationalized. The progressive nationalization of banks has increased the role of public sector ranking in the country. In 1996 these nationalized commercial banks and 31,055 branches all over India whereas State Bank of India and its subsidiaries alone had 12,903 branches.


Types of Banks
Basis of Classification
Reserve Bank Schedule
Ownership
Domicile
Functions
Scheduled Banks
Non Schedule Banks
Domestic Banks
Foreign Banks
Public Sector Banks
Private Sector Banks
Co-Operative Banks
Commercial Banks
Industrial Banks
Agricultural Banks
Exchange Banks
Central Banks

At present there are 27 Public Sector Banks (1 State Bank of India +7 Subsidiaries of State Bank +19 Nationalized Banks). The regional Rural Banks are also covered under the category of Public Sec-or Banks. At present there are 196 Regional Rural Banks in India.

Under the new liberalization policy of the Government, The Oriental Bank of Commerce, State Bank of India, Corporation Bank, Bank of India and Bank of Baroda have offered their share to the general public and financial institutions and therefore these banks are no longer owned by Government of India. Although majority of the shares 3 still with the Government, therefore these are still public sector banks.

B. **Private Sector Banks:** On thy contrary Private Sector Banks are those banks which are owned and controlled by the private sector i.e., private individuals and corporations. The private sector played a strategic role in the growth of Dint stock banks in India. In 1951 there were in all 566 private sector tanks of which 92 banks were scheduled banks and the remaining 474 were non-scheduled banks. At that time there was not even a single public sector bank. With the nationalization of banks in 1969 and 1980 neither role in commercial banking had declined considerably. Since then, the number of private sector banks is decreasing and the number of public sector banks is increasing. However the following known private sector banks continued to operate in the banking sector (Total there are 25 such banks operating in India):

1. The Federal Bank Ltd.
2. The Nedungadi Bank Ltd.
3. Bharat Overseas Bank Ltd.
4. Lord Krishna Bank Ltd.
5. The Laxmi Vilas Bank Ltd.
6. The Vyasya Bank Ltd.
7. The Jammu & Kashmir Bank Ltd.
8. The South India Bank Ltd.
9. The Karur Vyasa Bank Ltd.

Private sector banks include Foreign Banks, Scheduled Commercial Banks and Non-Scheduled Commercial Brinks. The Government of India set-up a nine-member committee under the chairman-hip of Sh. Narsimham, former Governor of Reserve Bank of India, to examine the structure and functioning of the existing financial system of India and

suggest financial sector reforms. According to Committee report which was submitted to the parliament on December 17, 1991, the private sector banks should be allowed to be established in India. But the minimum capital of new private sector banks should be at least Rs.100 crore. Thereafter a number of private commercial banks have been established in India. At present the major private sector banks established in India are:

1. UTI Bank Ltd.
2. HDFC Bank Ltd.
3. IDBI Bank Ltd.
4. Times Bank Ltd.
5. IndusInd Bank Ltd.
6. Bank of Punjab Ltd.
7. Centurion Bank Ltd.
8. Global Trust Bank Ltd.
9. Development Credit Bank Ltd.
10. ICICI Banking Corporation Ltd.

Till March 1996 all these private sector banks had 76 branches. Existing private sector banks have been assured that they will be allowed to expand their activities without any fear of nationalization.

C. **Co-operative Banks:** The word cooperation stands for working together. Therefore, co-operative banking means an institution which is established on the principle of cooperation dealing in ordinary banking business. Cooperative banks are special type of banks doing ordinary banking business in which the members cooperate with each other for the promotion of their common economic interests.

Features of Cooperative Banking

Following are the distinguishing main features of a cooperative bank: -

1. Membership of Cooperative Banks is voluntary.
2. Functions of a Cooperative Bank are common banking functions.
3. Organization and management of a Cooperative Bank is based on democratic principles.
4. Main objectives of a Cooperative bank are to promote economic, social and moral development of its members.
5. Basic principle of Cooperative Bank is equality.

Therefore, we can conclude and define a cooperative bank as under:

"Cooperative Bank is an institution established on cooperative basis which deals in ordinary banking business for the promotion of economic, social and moral development of its members on the principle of equality."

The short-term agricultural credit institutions cater to the short term financial needs of the agriculturists which have the following three tier federal structure:

a) At the Village level : Primary Agricultural Credit Societies.

b) At the District level : Central Cooperative Banks.

c) At the State level : State Cooperative Banks.

7.3.3 On the Basis of Domicile

The banks can be classified into the following two categories on the basis of domicile:

Domestic Banks: Those banks which are incorporated and registered in the India are calleddomestic banks.

Foreign Banks: Foreign Banks are those banks which are set up in a foreign country with their control and management in the hands of head office in their country of origin but having business branches in India. Foreign Banks are also known as Foreign Exchange Banks or Exchange Banks. Traditionally these banks were set up for financing the foreign trade in India and discounting the foreign exchange bills. But now these banks are also accepting deposits and making advances like other commercial banks in India. Notable leading foreign banks in India are:

i) ANZ Grindlay's Bank having 56 branches in India.

ii) The Standard & Chartered Bank with 24 branches in India.

iii) Hongkong Bank having 21 branches in India.

iv) American Express Bank.

v) Citi Bank.

vi) Bank of America and others foreign banks.

Check Your Progress- I

Q1: Define the term bank.

Ans. .....

Q2: Define public sector banks.

Ans. .....

Q3. What do you mean by scheduled banks?

Ans. .....

7.3.4 On the Basis of Functions

The banks can be classified on the basis of functions in the following categories:

1. **Commercial Banks:** Commercial banks are those banks which perform all kinds of banking business and functions like accepting deposits, advancing loans short term loans, credit creation, and agency functions for their customers. Since their major portion of the deposits are for the short period, they advance only short term and medium-term loans for business, trade and commerce. Majority of the commercial banks are in the public sector. Of late they have started giving long term loans also to compete in the commercial money market. These commercial banks are also called joint stock banks because they are constituted and organised in the same manner as the joint stock companies are constituted. Major commercial banks operating in India are as under:

State Bank of India & Its Subsidiaries	Nationalized Banks
1. State Bank of India.	1. UCO Bank.
2. State Bank of Mysore.	2. Dena Bank.
3. State Bank of Indore.	3. Indian Bank.
4. State Bank of Patiala.	4. Canara Bank.
5. State Bank of Hyderabad.	5. Vijaya Bank.
6. State Bank of Travancore.	6. Andhra Bank.
7. State Bank of Saurashtra.	7. Syndicate Bank.
8. State Bank of Bikaner and Jaipur.	8. Allahabad Bank.
	9. Bank of India.
	10. Bank of Baroda.
	11. Corporation Bank.
	12. Bank of Maharashtra.

	13. Punjab National Bank. 14. Punjab and Sind Bank. 15. Union Bank of India. 16. United Bank of India. 17. Indian Overseas Bank. 18. Central Bank of India. 19. Oriental Bank of Commerce.

2. **Industrial Banks:** The Industrial banks are those banks which provide medium term and long-term finance to the industries for the purchase of Land and Building, Plant and Machinery and other industrial equipment. They also underwrite the shares and debentures of the industries and also subscribe to them. The main functions of an Industrial Banks are as follows:

   A. They provide long term finance to the industries to purchase Land and Buildings, Plant and Machinery and construction of factory buildings.

   B. They also accept long term deposits.

   C. The under write the shares and debentures of the industry and sometimes subscribe to them.

   In India there are number of financial institutions which perform the functions of an Industrial Bank. Major financial institutions are as under: -

   A. Industrial Development Bank of India (IDBI).

   B. Industrial Finance Corporation of India (IFCI).

   C. Industrial Credit and Investment Corporation of India (ICICI) and

   D. State Industrial Development Corporations such as Punjab State Industrial Development Corporation (PSIDC).

3. **Agriculture Banks:** The needs of agricultural credit are different from that of industry, business, trade and commerce. Commercial banks and Industrial banks do not deal with agriculture credit financing. An agriculturist has both types of needs:

   i) He requires short term credit to purchase seeds, fertilizers and other inputs and

   ii) He also requires long term credit to purchase land, to make permanent improvement on land, to purchase agricultural machinery and equipment such as tractors etc.

   Agricultural credit is generally provided in India by the Cooperative institutions. The

Cooperative Agricultural Credit Institutions are divided into two categories: -

A. Short term agricultural credit institutions

The short-term agricultural credit institutions cater to the short-term financial needs of the agriculturists which have the following three tier federal structure:

a) At the Village level: Primary Agricultural Credit Societies,

b) At the District level: Central Cooperative Banks

c) At the State level: State Cooperative Banks.

B. Long term agricultural credit institutions

The long-term agricultural credit is provided by the Land Development Banks which were earlier known as Land Mortgage Banks. The land development banks provide long term to agriculturists for a period ranging from 5 years to 25 years.

4. **Exchange Banks:** The exchange banks are those banks which deal in foreign exchange and specialized in financing the foreign trade. Therefore, they are also called foreign exchange banks. Foreign Exchange Banks are those banks which are set up in a foreign country with their control and management in the hands of head office in their country of origin but having business branches in India. Notable leading foreign exchange banks in India are:

i) ANZ Grindlay's Bank having 56 branches in India, Hea4 office in England

ii) The Standard & Chartered Bank with 24 branches in India, Head office in England.

iii) Hongkong Bank having 21branches in India, Head office in Hongkong.

iv) American Express Bank with Head office in United States of America.

v) Citi Bank with Head office in United States of America.

vi) Bank of America with Head office in United States of America.

5. **Central Bank:** The Central Bank is the apex bank of a country which controls, regulates and supervises the banking, monetary and credit system of the country. The Central Bank is owned and controlled by the Government of the country. The Reserve Bank Of India is the Central Bank in India.

The important functions of central bank are as follows: -

i) It acts as banker to the Government of the country.

ii) It also acts as agent and financial advisor to the Government of the country.

iii) It has the monopoly to issue currency of the country.

iv) It serves as the lender of the last resort.

v) It acts as the clearing house and keeps cash reserves of commercial banks.

Check Your Progress- II

Q1. Define industrial banks.

Ans.....-

Q2. What do you mean by agricultural banks?

Ans.....

7.4 Functions of Commercial Banks

The Commercial Banks perform a variety of functions which can be divided in the following three categories: -

- Basic Functions.
- Agency Functions.
- General Utility Functions.

7.4.1 Basic Functions

The basic functions of bank are those functions without performing which an institution cannot be called a banking institution at all. That is why these functions are also called primary or acidtest functions of a bank. The basic/primary/acid test functions of a bank are:

Accepting Deposits

Advancing of Loans.

Credit creation.

7.4.1.1 Accepting Deposits

The first and the most important function of a bank are to accept deposits from those people who can save and spare for the safe custody with the bankers. It serves two purposes for the customers. On one hand their money is safe with the bank without any fear of theft and on the other hand they also earninterest as per the kind of saving they have made. For this purpose, the banks have different kinds ofdeposit accounts to attract the people which are as under:

1) **Saving Deposit Account**: The Saving Bank Account is the most common bank account being utilized by the general public. The basic purposes of this account are to mobilize the small savings of the general public. Certain restrictions are imposed on the depositors regarding the number of withdrawals and amount to be withdrawn in a given period of time. Generally, the rate of interest paid by the bank on these deposits is low as compared to recurring or fixed deposit accounts. Cheque facility is also provided to the depositors with certain extra restrictions on the depositors. One of the conditions is that the depositor shall have to maintain a minimum balance in the account say Rs.500 which is otherwise very low in the case of an account without the facility of the cheque book, say Rs.20 only. Some service charges are also imposed if the depositor uses the cheque facility at large levels.

2) **Fixed Deposit Account**: This is an account where money can be deposited for a fixed period of time say One Year or Two years or Three Years or Five Years and so on. Once the money is deposited for a fixed period of time, the depositor is prohibited from withdrawal of money from the bank before the expiry of the stipulated period of time. The basic advantage to the customer is that he is offered inter t at the higher rate of interest and the banker is free to utilize the money for that fixed period. But where a customer is in need of money in any contingency or emergency, the bank also has the facility to provide loan against the fixed deposit receipt at liberal terms and conditions. Even if a customer insists on the withdrawal of his money the fixed deposit receipt can also be encashed before the expiry of the stipulated period of time with the condition that the customer shall not be entitled to higher rate of interest, but the customer is allowed that rate of interest which is applicable on the saving deposit account as if the amount was deposited in the savings account.

3) **Current Deposit Account**: In the savings bank account, there are restrictions on the number of withdrawals that can be made in a day or a week or a month. Therefore, it does not suit to the needs of traders and businessmen who have to make several payments daily and deposits money in a similar manner. Therefore, there is a facility for them in the shape of another account called Current Deposit Account. These accounts are generally maintained by the traders and businessmen who have to make a number of payments every day. Money from this account can be withdrawn by the account holder as many times as desired by the customer. Normally bank does not pay any interest on these current accounts, rather some incidental charges are charged by the banker as service charges. These accounts are also called demand deposits or demand liabilities.

The facility of Over Drafts is providing to the traders through these current accounts for which the banks charge interest on the outstanding balance of the customers. A limit is fixed by the bankers for withdrawal of over drafts and the customer is not allowed to withdraw more than that limit from his O/D current account. Say if a trader has an O/D limit of Rs. 100,000. with a bank, he can withdraw money upto Rs. 1,00,000 from the bank without depositing any money with the bank. But he cannot withdraw more than Rs.1,00,000. He shall have to pay interest on such withdrawals.

4) **Recurring Deposit Account**: To encourage regular savings by the general public, another account is opened in the banks called Recurring Deposit Account. This account is preferred by the fixed income group, because a particular amount fixed at the time of opening the account has to be deposited in the account every month for a stipulated period of time. Say Rs.500 per month for a period of three years. In this case the customer is bound to deposit Rs.500 per month regularly for a period of three years. Generally the bank pays rate of interest higher than that of a saving account and just equal to the fixed deposit account on such recurring deposit accounts. The withdrawal of money is allowed only after the stipulated period of time along with the interest. Rather the account stands closed at the end of the stipulated period of time. In this case also the bank provides a facility to withdraw the money before the stipulated period of time in the case of any emergency. The bank shall allow rate of interest which is applicable on saving bank account in case the customer want to close the account before then stipulated period of time.

5) **Home Loan Account**: Home loan account facility has been introduced in some scheduled commercial banks to encourage savings for the purchasing of or construction of a house to live. In this account the customer is required to deposit a particular amount per month or half yearly or even yearly for a period of five years. After the stipulated period bank provide three to five times of the deposited amount a loan to the subscribers to purchase or construct a house. Rate of interest is also very attractive on this account nearly equal to that of the fixed deposit account. Even the rebate of Income Tax is also available on the amount contributed in this account under Section 88 of the Income Tax Act, 1961. Facility to close the account after the stipulated period of time is also allowed.

7.4.1.2 Advancing of Loans

Advancing of loans is the second acid test function of the commercial banks. After keeping

certain cash reserves, the banks lend their deposits to the needy borrowers. It is one of the primaryfunctions with out Which an institution cannot be called a bank. The bank lends a certain percentage ofthe cash lying in the deposits on a higher rate of interest than it pays on such deposits. The longer is the period for which the loan is required the higher is the rate of interest. Similarly higher the amount of loan,the higher shall be the rate of interest. Before advancing the loans, the bank satisfies themselves about cheque credit worthiness of the borrowers. This is how a bank earns profits and carries on its banking business. There are various types of loans which are provided by the banks to the borrowers. Some of the important ways of advancing loans are as under: -

1) **Call Money Advances:** The Call Money Market which is also known as inter-bank call money market deals with very short period loans called call loans. The Call Money Market is a very important constituent of the organized money market which functions as an immediate source of very short term loans. The major suppliers of the funds in the call money market are All Commercial Banks, State Bank of India (SBI), Life Insurance Corporation of India (LIC), General Insurance Corporation (GIC), Unit Trust of India (UTI) and Industrial Development Bank of India (IDBI) and the major borrowers are the Scheduled Commercial Banks. No collateral securities are required against these call money market loans.

As the participants are mostly banks, it is also called inter-bank call money market. The Scheduled Commercial Banks use their surplus funds to lend for very short period to the bill brokers. The bill brokers and dealers in stock exchanges generally borrow money at call from the commercial banks. The bill brokers in turn use them to discount or purchase the bills. Such funds are borrowed at the call rate which varies with the volume of funds lent by the commercial banks. When the brokers are asked to pay off the loans immediately, then they borrow from SBI, LIC, GIC, and UTI etc. These loans are granted by the commercial banks for a very short period, not exceeding Seven Days in any case. The borrowers have to repay the loan immediately whenever the lender bank calls them back.

2) **Cash Credits**: This is a type of loan which is provided to thy businessmen against their current assets such as Shares, Stocks, Bonds etc. These loans are not based on credit worthiness or personal security of the customers. The bank provides this loan through opening an account in the name of the customer and allows them to withdraw borrowed amount of loan from time to time up to the limit

fixed by the bank which is determined by the value of security provided by the borrowers. Interest is charge only on the amount of money actually withdrawn from the banks and not on the amount of the sanctioned amount of loan.

In some other cases certain banks follow a different procedure for cash credits. The whole amount of loan is credited to the current account of the borrower. In case of a new customer a separate account is opened and amount of loan is transferred to it. The borrower is free to withdraw the money through cheques as and when required by the borrower. But in this case the borrower has to pay the interest on the whole amount credited in their accounts.

3) **Overdrafts:** The facility of Over Drafts is providing to the traders and businessmen through current accounts for which the banks charge interest on the outstanding balance of the customers. A limit is fixed by the bankers for withdrawal of over drafts and the customer is not allowed to withdraw more than that limit from his Over Draft Current Account. This facility is required by the traders and businessmen because they issue several cheques in a day and similarly deposits so many cheques daily in their current accounts. They may not be knowing at a particular day that whether there is a balance in the account or not and their issued cheques are not dishonored they are provided with the facility of overdrafts. Say if a trader has an Over Draft limit of Rs. 200,000 with a bank, he can withdraw money upto Rs. 2,00,000 from the bank without depositing any money with the bank. But he cannot withdraw more than Rs.2,00,000. He shall have to pay interest on such withdrawals.

4) **Discounting Bills of Exchange**: This is another popular type of lending by the commercial banks. A holder of a bill of exchange can get it discounted with a commercial bank. Bills of Exchange are also called the Commercial Bills and the market dealing with these bills is also called commercial bill market. Bills of exchange are those bills which are issued by the businessmen or firms in exchange of goods sold or purchased. The bill of exchange is a written unconditional order signed by the drawer (seller) requiring the drawee (buyer) to pay on demand or at a fixed future date, (usually three months after date written on the bill of exchange), a definite sum of money. After the bill has been drawn by the drawer (seller), it's accepted by the drawee (buyer) by countersigning the bill. Once the buyer puts his acceptance on the bill by signing it, it becomes a legal document. They are like postdated cheques issued by the buyers of goods for the goods received. The bill holder can get this bill discounted in the bill market if he wants the amount of the bill before its actual maturity.

These bills of exchange are discounted and re-discounted by the commercial banks for lending credit to the bill brokers or for borrowing from the central bank. The bill of exchange market is not properly developed in India. The Reserve Bank of India introduced the bill market scheme in 1952. Its main aim was to provide finance against bills of exchange for 90 days. The scheduled commercial banks were allowed to convert a part of their advances into promissory notes for 90 days for lodging as collateral security for advances from Reserve Bank.

In 1970 on the recommendations of Narsimham Committee, the Reserve Bank Of India introduced the Bill Re-discounting Scheme. Under this scheme, all licensed scheduled commercial banks are eligible to re-discount with Reserve Bank of India genuine trade bills arising out of actual sale or purchase of goods. Apart from the scheduled commercial banks, certain other financial institutions were also allowed to re- discount the bills. These financial institutions included LIC, GIC, UTI, IDBI, ICICI, IFCI, NABARD, SBI and CANBANK Mutual Fund.

5) **Term Loans**: Earlier the commercial banks were advancing only short-term loans. The commercial banks have also started advancing medium term and long-term loans. Now the maturity period of term loans is more than one year. The amount of the loan sanctioned is either paid to the borrower or it is credited to the account of the borrower in the bank. The interest is charged on the whole amount of loan sanctioned irrespective of the amount withdrawn by the borrower from his account. Repayment of the loan is accepted in lump sum or in the installments.

7.4.1.3 Credit Creation

Credit creation is one of the basic functions of a commercial bank. A bank differs from the other financial institutions because it can create credit. Like other financial institutions the commercial banks also aim at earning profits. For this purpose, they accept deposits and advance loans by keeping small cash in reserve for day-to-day transactions. In the layman's language when a bank advances a loan, the bank creates credit or deposit. Every bank loan creates an equivalent deposit in the bank. Therefore, the credit creation means multiple expansions of bank deposits. The word creation refers to the ability of the bank to expand deposits as a multiple of its reserves.

The credit creation refers to the unique power of the banks to multiply loans and advances, and hence deposits. With a little cash in hand, the banks can create additional purchasing power to a considerable extent. It is because of this multiple credit creation power that the commercial banks have

been named the "factories of creating credit" or manufacturers of money.

7.4.2 Agency Functions

The Commercial Banks also perform certain agency functions for and on behalf of their customers. The bank acts as the agent of the customer while performing these functions. Such services of the banks are called agency services. Some of the important agency services are as under:

1) **Remittance of Funds**: Commercial banks provide a safe remittance of funds of their customers from one place to another through cheques, bank drafts, telephone transfers etc.
2) **Collection and Payment of Credit Instruments**: The commercial banks used to collect and pay various negotiable instruments like cheques, bills of exchange, promissory notes, hundis, etc.
3) **Execution of Standing Orders**: The Commercial Banks also execute the standing orders and instructions of their customers for making various periodic payments like subscriptions, rents, insurance premiums and fees on behalf of the customers out of the accounts of their customers.
4) **Purchase and Sale of Securities**: The commercial banks also undertake the sale and purchase of securities like Shares, Stocks, Bonds, Debentures etc., on behalf of their customers performing the function as a broker agent.
5) **Collection of Dividends on Shares and Interest on Debentures**: Commercial banks also make collection of dividends announces by the companies of which the customer of the bank is a shareholder, and also collects the interest on the debentures which becomes due on particular dates generally half yearly or annually.
6) **Trustees and Executors of Wills**: The commercial Banks preserves the wills of their customers as their trustees and execute the wills after the death of the customer as per the will as the executors.
7) **Representation and Correspondence**: The commercial banks also act as the representative and correspondents of their customers and get passports, travelers' tickets, book vehicles and plots for their customers on the directions of the customers.

7.4.3 General Utility Functions

In addition to basic functions and agency functions the commercial banks also provide general utility services for their customers which are needed in the various walks of life and the commercial banks provide a helping hand in solving the general problems of the customers, like

safety from loss or theft and so many other facilities some them are as under:

1. **Locker Facility**: The commercial banks provide locker facility to its customers at very reasonable charges, which is not possible at the premises of the customers. The customers can avail the facility of lockers in different sizes according to the needs of the customers. The locker charge also varies with the size of the lockers. The customers can keep their valuables in it and important documents in these lockers for safety. Lock-can be operated in the usual business hour of the bank on all working days.
2. **Traveler's Cheque Facility**: Where customers want to visit long distant places and also need money, they need not carry the money with them which is not safe during long distant journeys and there is always a fear of loss or theft during the journey. The commercial banks provide a unique facility through traveler's cheque. The customers can get traveler's cheques from the banks and travel without the fear of theft or loss of money. Where ever they need money they can approach the branch of the bank in that city and encash the traveler's cheque according to the need of the customer and keep the balance in traveler's cheques again.
3. **Gift Cheque Facility**: Some commercial banks also provide the facility of issuing gift cheques in the denomination of different amounts according to the needs of the customers, say for Rs.11, 21, 51, 101, 501 and son. This facility is provided for the special occasions for the customers and normally the banks do not charge anything for issuing these gift cheques.
4. **Letter of Credit**: The commercial banks also help their customers by providing another unique service by providing the letter of credit in which the bank certifies the credit worthiness of the customers. These letters of credit are used in the long distant trade and specially in foreign trade where the parties do not know each other's and it is bank which provide the safety to them regarding their credit worthiness by issuing letter of credit.
5. **Underwriting Contracts**: The commercial banks underwrite the securities issued by the public or private companies and Government securities. It is the reputation of the bank which matters in the underwriting contracts. Where the bank is a very reputed one, the investors shall not have any hesitation in investing the money in which their banker is the underwriter. In case the public do not purchase the securities, it is the underwriting bank which has to purchase the securities upto the amount of which the bank has underwritten.
6. **Provide Statistical Data**: The commercial banks also help their customers by providing them important information through statistical data. Commercial banks collect statistical data in which

important information relating to industry, trade, commerce, money and banking is collected and published in their journals and bulletins containing research articles on the economic and financial matters. Such statistical data may be useful for the customers in dealing with their own business, trade or commerce.

7. **Foreign Exchange Facilities**: The commercial banks also deal in the business of foreign currencies. These banks provide foreign exchange and also discount the foreign bills of exchange. Some commercial banks have also opened special branches for the foreign exchange services to the non-resilient Indians settled abroad.
8. **Merchant Banking Services**: The commercial banks have also started providing merchant banking facilities. The Banking Commission Report,1972 emphasized the need of creating specialized institutions to cater financial requirements of different sectors exclusively and examined the need of setting up merchant banking institutions. Commission recommended the setting up of merchant banking institutions. Consequently, in 1972 itself State Bank of India started its merchant banking division. Since then, a number of other commercial banks and financial institutions started their merchant banking divisions. Now the merchant banking firms in private sector have started gearing up to meet the challenge posed by commercial banks and financial institutions in the f'eld of merchant banking in India.

Merchant Banking activities were regulated by guidelines of SEBI and Ministry of Finance, Companies Act, 1956, Securities Contract (Regulation) Act, 1956 and listing guidelines of stock exchanges in India. In December 1992, in its wisdom SEBI came out with Securities And Exchange Board of India (Me' hant Banking) Regulations, 1992,a comprehensive enactment to regulate merchant banking activities in India.

Merchant Banking is no longer a monopoly of Institutional and Banker merchant bankers only. After SEBI (Merchant Bankers) Regulation 1992, merchant banking has been given a specific direction. Since their role in public issues is exhaustive and their responsibilities also lute, professional expertise is necessarily needed. In India the merchant banking activity can be divided basically amongst the following main segments:

A. Financial Institutions like ICICI, IDBI, IFCI, and SIDBI floated merchant banking divisions.
B. Public Sector Nationalized Commercial Banks promoted subsidiaries to carry out merchant banking activities like SBI Caps, PNB Caps and Canfina etc.
C. Foreign Banks promoted merchant banking divisions like Grindlays Bank, Standard

Chartered Bank Citi Bank and Honkong Bank etc.

D. Private sector merchant banker's corporate firms like JM Financials, Kodak Mahindra Finance, DSP Finance etc.

9. **Acting as Referee**: The commercial banks are the best source of seeking information about the creditworthiness of the customers. Banks may be referred for seeking information regarding credit worthiness, financial position, business reputation and respectability of their customers.

Check Your Progress- III

Q1. Define current deposit account in banks.

Ans.....

Q2. What do you mean by credit creation?

Ans.....

Q3. Mention the name of general utility functions of banks.

Ans.....

7.5 Summary

Bank is an institution which deals with the money and credit in such a manner that it accepts deposits from the public and makes the surplus funds available to those who need them, and helps in remitting money from one place to another safely. In other words, a bank is a commercial establishment which deals in debts and aims at earning profits by accepting deposits from general public at large, which is repayable on demand or otherwise through cheques or bank drafts and otherwise which are used for lending to the borrowers or invested in Government securities. As far as types of banks is concerned, based on reserve bank schedule (i.e., schedule banks and non-scheduled banks) ownership (i.e., public sector, private sector banks and co-operative banks), domicile (i.e., domestic and foreign banks) and functions (i.e., commercial banks, industrial banks, agricultural banks, exchange banks and central banks). In the context of functions of commercial banks, broadly divided into three parts: basic functions, agency functions and general utility functions. Basic functions consist of accepting loans, advancing loans and credit creation.

7.6 Questions for Practice

7.6.1 Short Answer Type Questions

Q1. Write a note on the origin of banks.

Q2. Give a comprehensive definition of a bank.

Q3. What are the different types of banks?

Q4. What are Scheduled Commercial Banks?

Q5. Write a note on Private Sector Banks.

Q6. Explain the functions of banks under advancing loans.

Q7. What are the agency functions of banks?

Q8. Write a note on Foreign Banks.

Q9. What are Industrial Banks?

Q10. What do you mean by credit creation?

7.6.2 Long Answer Type Questions

Q1. Define a bank. Write a detailed note on types of banks on the basis of ownership.

Q2. Write the classification of Commercial Banks.

Q3. Explain the basic functions of Commercial Banks.

Q4. Define the agency functions and general utility functions of banks.

7.7 Suggested Readings

- Money and Banking, by T.N. Hajela,
- Money and Banking by KPM Sundram
- Money and Banking by Schuam Series, McGrawHill Publishing Co. Ltd., New Delhi.
- Money Economics-Institutions, Theory and Policy by Suraj B Gupta
- Innovations in Banking Services by H.R. Suneja
- Monetary Economics: Institutions by Suraj B. Gupta.

M.A (ECONOMICS)

SEMESTER –II

COURSE: MACRO ECONOMICS

UNIT 8: MONETARY POLICY- OBJECTIVES AND TOOLS FISCAL POLICY - OBJECTIVES AND TOOLS

STRUCTURE

8.0 Learning Objectives

After reading this unit, learner will be able to:

- Outline the concept of fiscal and monetary policy
- Know the objectives of fiscal and Monetary policy
- Use of tools of fiscal and Monetary policy for its objectives

8.1 Introduction

Macroeconomic policies play crucial role in an economy. Fiscal Policy is a significant policy tool of economic framework of the economy. Fiscal Policy is the policy related to Public Revenues, Public Expenditures, Public Debts and also Deficit Financing by the government. Fiscal policy helps to mobilize the resources, allocation of resources, capital formation, rise in investment levels and alike. Fiscal Policy aims to promote development and productive activities. It includes both Development activities (like expenditure on infrastructure, transport, small scale industries etc.) and non-development activities (like salaries, pensions, subsidies etc.). Fiscal Policy provides incentives to private sector investment and production. Fiscal Policy is designed by the government of the country. For example, in India, the union finance minister formulates and deals with Fiscal policy through annual budget and other interventions.

8.2 Meaning of Monetary Policy

Monetary policy means the policy relating to supply of money, availability of money and cost of money. Through monetary policy, central bank regulates the supply of money, direction and cost (rate of interest) of money in the economy.

Harry, Johnson, —A policy employing the central banks control of supply of money as an instrument for achieving the objectives of general economic policy is a monetary policy.I G k Shaw, -By monetary policy, we mean any conscious action undertaken by the monetary authorities to change the quantity, availability or cost (rate of interest) of money.I

Aston, D.C. -Monetary policy involves the influence on the level and composition of aggregate demand by the manipulation of interest rates and availability of credit.I

These definitions explain the following points:

a) Central bank or monetary authority operates monetary policy
b) Regulation of quantity/ cost/ direction of money supply
c) Influence on aggregate demand
d) Specific objectives of monetary policy.

8.3 Objectives of Monetary Policy

1. **Achievement of Full Employment:** Generation of employment is a pertinent issue in all the economies especially in less developed economies. Monetary policy aims at generating

more employment through the expansion of AD, incomes and outputs. For this objective, central bank adopts _cheap monetary policy/expansionary monetary policy' and lowers the rates of interest in order to increase the flow of credit for consumption and investments.

2. **Promote Economic Growth and Development:** Economic growth means the process by which the real national and real per capita income continue to rise for a long period of time. This process will enhance the production capacities, lead to skill formation and capital formation. Less developed economies face the problem of shortage of financial resources and less capital formation. Therefore, monetary policy aims to mobilize the financial resources for more investments and capital formation.
3. **Price Stability:** It refers to lessen the fluctuations in price level. The process of persistent rise in prices is called inflation. Greater flow of Money supply, higher AD and less production of goods are main causes of inflation. Inflation brings social injustice, inequality of income and wealth. It lowers the purchasing power of people and reduces consumption expenditures and AD. The process of falling prices called deflation is also harmful because it discourages investment and production. Monetary policy aims to correct both the situations by regulating money supply and rates of interest.
4. **Exchange Stability:** The issues relating foreign exchange rate, stock of foreign exchange reserves and balance of payments (BOP) are significant for the external price stability. The problems of shortage of foreign exchange reserves and adverse BOP can be solved with monetary policy.
5. **Equitable Distribution of Income and Wealth:** This objective of monetary policy relates to redistribution of national income in such a manner that more incomes and funds flow to the poorer sections of society. Monetary policy aims to provide more loans and funds at low rates of interest to marginalized sections, weaker sections, women and small investors for providing better opportunities of businesses, work and investment in industry and agriculture.

In short, monetary policy works in tune with the main objectives of economic policies and planning for growth and development.

8.4 Types of Monetary Policy

Following are the main types of monetary policy:

A. **Expansionary Monetary Policy**: Expansionary monetary policy expands the amount of money/credit supply available to consumers, producers and investors. Lowering of rates of interest makes the loans/credits cheaper. It encourages the consumers to borrow more for buying goods like cars, furniture, and house construction and provides boost to the investors to borrow more for starting up businesses, industries and trade activities. This raises the level of aggregate demand in the economy. As a result, levels of income output and employment start rising.

B. **Contractionary Monetary Policy:** Contractionary monetary policy restricts/contract the amount of money/credit supply available to consumers, producers and investors. Raising of rates of interest makes the loans/credits costlier. It discourages the consumers to borrow more for buying goods like cars, furniture, and house construction and restricts the investors to borrow more for starting up businesses, industries and trade activities. This reduces the level of aggregate demand in the economy. As a result, levels of income output and employment start shrinking.

Check Your Progress- IV

Q1. Define monetary policy.

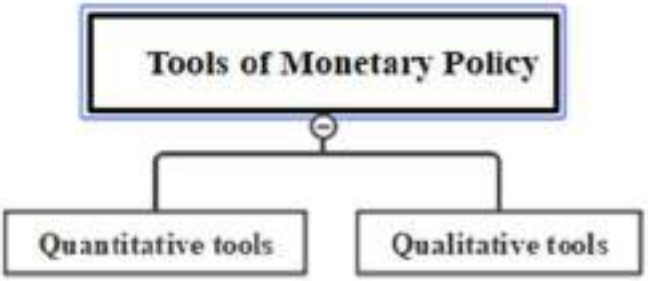
Ans. .....

Q2. Outline the differences between liberal/cheap monetary policy and restrictive/dear monetary policy.

Ans. .....

.....

8.5 Instruments/Tools of Monetary Policy



A. Quantitative Tools: Quantitative tools are those tools which target at changing the quantity of money supply in circulation. Generally, the use of such tools affects the entire economy. This is a non-discriminatory credit policy operated by central bank. Following are the main quantitative tools of monetary policy.

- Bank Rate;
- Open market operations;
- Cash reserve ratios (cash minimum reserve ratio and statutory liquidity ratio

Let us analyze these tools in detail.

1. **Bank Rate:** It is defined as that rate of interest at which central bank lends to commercial banks and discounts the securities of banks. Bank rate is positively related to market rate of interest. Market rate of interest is the rate at which commercial banks give loans to the people (investors and consumers). A rise in bank rate increases the market rate of interest (called as Dear money policy or Restrictive monetary policy; and a fall in bank rate decreases the market rate of interest (called as Cheap money policy or Expansionary monetary policy). A rise in bank rate and market rate of interest brings a contraction in credit available to investors and consumers. A fall in bank rate and market rate of interest brings an expansion in credit available to investors and consumers.
2. **Open Market Operations (Omo):** This is the mechanism through which central bank sells and buys the securities in the open market. A) The sale of securities by the central bank to the public has a contractionary effect on money/credit supply in the economy (called as Dear

money policy or Restrictive monetary policy) because when people buy securities from central bank, their money is transferred to central bank. B) When central buys securities from people then money is transferred from central bank to people so that this has an expansionary effect (called as Cheap money policy or Expansionary monetary policy). However, the effectiveness of OMO depends on securities market, excess reserves with commercial banks and such other factors. In India, RBI changes the repo rate and Reverse repo rate. Repo rate is a rate at which commercial banks borrow money by selling their securities to RBI. Reverse repo rate is the rate at which RBI borrows money from commercial banks when there is excess money supply in the market. At the time of inflation, RBI raises the reverse repo rate so that banks give more of their funds to RBI to earn more returns. This has a contractionary effect.

3. **Changes in Minimum Reserve Ratios:**

a. **Minimum Cash Reserve Ratio (CRR):** It refers to the minimum percentage of the total deposits of each commercial bank which is to be kept with central bank. For example, every commercial bank will deposit/transfer this amount to central bank. This cannot be used by the commercial banks as advancing loans to the investors and consumers. It is a check on the lending capacity of the commercial banks. A higher cash minimum reserve ratio (called as Dear money policy or Restrictive monetary policy) leads to fall in the credit creation capacity of commercial banks through loans to investors and consumers; and a fall in this ratio expands the credit creation capacity of commercial banks (called as Cheap money policy or Expansionary monetary policy).

b. **Change in Statutory Liquidity Ratio (SLR):** It refers to the percent of total deposit of commercial banks which they have to keep in cash or liquid form. For example, every commercial bank will keep a fixed percent of its total deposits in cash and it will not be able to lend this money to investors and consumers. This ratio is a big check on the credit creation capacity of commercial banks. A higher statutory liquidity ratio(called as Dear money policy or Restrictive monetary policy) leads to fall in the credit creation capacity of commercial banks through loans to investors and consumers and a fall in statutory liquidity ratio expands the credit creation capacity of commercial banks (called as Cheap money policy or Expansionary monetary policy).

Remember: a) Expansionary monetary policy means fall in bank rate, buying of securities by central bank, fall in minimum cash reserve ratio and fall in statutory liquidity ratio; and b) Contractionary/restrictive monetary policy means rise in bank rate, selling of securities by central bank, rise in minimum cash reserve ratio and rise in statutory liquidity ratio.

B. Qualitative Tools/Selective Tools: Qualitative tools are used as discriminatory credit policy. These tools aim to change the direction of money supply. These tools are used to discriminate between different uses of credit. For example, more credit can be made available to agriculture and export sector and less to car manufacturing industry.

a. **Change in the Margin Requirements of Loans**: The central bank can raise or lower the margin requirements of loans. Margin is the difference between the value of goods pledged as security and amount of loan. It means that proportion of loan amount which is not offered by the bank. Higher margin means low amount of loan and lower margin means more amount of loan. This tool helps to divert financial recourses from less important sectors to more and needy sectors. This is done by raising the margin requirements of loans for less important sectors and reducing it for more necessary sectors.

   For example, lowering the margin requirements of loans for farmers/agriculture sector and raising it for production of cars.

b. **Rationing of Credit:** Central bank lends money to all the commercial banks. Under rationing, credit is advanced by putting a limit. Central bank can

   - directly refuse to give loans;
   - it can reduce the amount of loans;
   - fix credit quotas for different banks; and
   - it can fix quotas for various sectors. Central bank can regulate the consumer credit also.

c. **Moral Persuasion by Central Bank:** Central bank can suggest the commercial banks to work in coordination with the policies of central bank which are adopted time to time. In a way, central bank can exercise some pressure on commercial banks in order to achieve the objectives of monetary policy.

   Remember: Central bank uses a judicious mixture of these tools for effective implementation of monetary policy. It can use a combination of tools to get the desired results.

Check Your Progress-V

Q1. What is the link between bank rate and market rate of interest?

Ans. .....

Q2. Mention the changes in quantitative tools, under expansionary monetary policy.

Ans. .....

Q3. What is rationing of credit?

Ans. .....

8.6 Applications of the Tools of Monetary Policy

Use of Monetary Policy for Internal and External Stability

1. **To Control Inflation:** During inflation, it is necessary to restrict money supply in the economy. For this, following tools can be used.
   (i) Application of quantitative tools such as increase in bank rate, sale of securities by central bank, increase in CRR and SLR.
   (ii) Qualitative tools can be used for reallocation of funds into more productive sectors such as increasing the margin requirements of loans and more rationing of credit. One or all the tools can be used as per the requirements.
   (iii) Besides, central bank can prohibit the printing of new currency.This will help to check the money supply in the economy because the above changes will discourage more borrowing by investors and consumers, leading to fall inAD and this will control the rising prices.

2. **To Control Deflation:** During deflation, it is necessary to expand money supply in the economy. For this, following tools can be used.
   a) Application of quantitative tools such as decrease in bank rate, purchase of securities by central bank, reduction in CRR and SLR.

b) Qualitative tools can be used for reallocation of funds into more productive sectors such as lowering the margin requirements of loans and more credit to banks. This will ease the borrowings by people.

One or all the tools can be used as per the requirements.

c) Besides, central bank can increase the printing of new currency. This will help to enhance the money supply in the economy because the above changes will encourage more borrowing by investors and consumers. This will increase available money with consumers and investors. It will increase AD in the economy and control the falling prices.

3. **Exchange Rate and Balance of Payments Position:** In simple words, balance of payments (BOP) refers to the account of exports and imports. The deficit BOP means excess of imports over exports. This means more payments for imports are to be made in terms of foreign currency (say Dollar, $). This raises the demand for foreign exchange (say Dollar, $). As a result, the value of Dollar, $ in terms of say, Rupee start rising. It means dollar$ becomes more costly in exchange of Rupee. This worsens the BOP situation. To tackle this situation, central bank can use tools of monetary policy.

When there is deficit BOP (as sated above), following tools can be used as under.

(i) Reduction in money supply to lower the level of domestic prices. This will make exports cheaper and lead to rise in demand for exports and discourage imports because cheap goods are available in the home country now. The deficit in BOP will become lesser, requiring less demand for foreign currency (say dollar$).

(ii) Lowering the rates of interest and making more credit/money supply available to domestic businesses and investors and foreign investors as well. The increased production of goods and services will lead to fall in demand for imported goods and less demand for foreign exchange.

(iii) More credit available to exporters will also help to increase the export earnings. This will increase the inflow of foreign exchange in the country and will reduce the demand for foreign currency in world market.

Remember: The combination of different tools of monetary policy can be used such as combining OMO, CRR /SLR or qualitative tools.

Economic Growth and Development:

Let us first understand the process of economic development and growth. Economic growth/development is a continuous process whereby the real national income and real per capita income continue to rise for a long time period. This process requires rise in capital formation which in turn involves:

A) Higher volume of savings;

B) Mobilization of savings through banking/financial systems; and

C) Investments of savings.

An effective monetary policy uses its tools for financing the development process. This is very much significant especially for developing economies. Let us know it through an example.

India is a developing economy. More and more funds are required for financing the development activities such as businesses, village industries, small entrepreneurs, women entrepreneurs, factories, farming, infrastructure and alike. For this task, monetary policy aims at following steps

- Better mobilization of savings through large number of financial institutions,
- Lucrative savings schemes
- More finances for investments even for startups, small businesses
- Identification of priority sectors and providing these sectors loans at lower rates of interest
- Easy loans for consumption purposes
- More and easy loans for more and more productive purposes.

Check Your Progress-VI

Q1. Mention the tools of monetary policy for controlling inflation.

Ans. .....

Q2. What is the difference between CRR and SLR?

Ans. .....

Q3. What are the steps of tools of monetary policy are needed for the expansion of businessactivities in the economy?

Ans. .....

8.7 Meaning of Fiscal Policy

Fiscal Policy is the policy related to public revenues, Public Expenditures, Public Debts and also Deficit Financing by the government. It is a policy relating to government tax and non-tax revenues and government expenditures and government borrowings. Let us understand with the help of following definitions.

Rowan, D.C.- *–Fiscal Policy is defined as the discretionary action by the government to change the level of government expenditure on goods and services and transfer payments and the yield of taxation at any given level of output.*

G.K. Shaw- *–Fiscal Policy is defined as any decision to change the level, composition and timing of government expenditure or change the burden, structure and frequency of the tax payment.*

Both the above definitions state the main elements of fiscal policy- Revenues and expenditures. Government can change the magnitude, composition, direction and timings of taxes and expenditures.

Monetary policy is an effective policy for regulating the economy in terms of internal and external stability and generation of employment. It is a policy tool which manages the quantum/size of money supply and growth rate of money supply in an economy. The central bank of the economy generally regulates monetary policy through its financial system/banking system/commercial banks and uses its tool such as Bank rate, Rate of interest adjustments, Cash reserve requirements and Rapo rates to change the quantity and direction of money supply to achieve various objectives. It regulates (expand or contract) the flow of credit and money supply to available the public in the economy.

8.8 Objectives of Fiscal Policy

Main objectives can be explained as under:

1. **Price Stability**: Price stability means fewer fluctuations in the general price level. It is measured by rate of inflation. Price stability means when there is no/low rate of inflation or deflation. Let's understand the two situations.

a. When there is higher rate of inflation, a contraction in aggregate demand and expenditure is required and for this, government reduces the fiscal deficit and public expenditure and raises the taxes, introduces various tax saving schemes. The policy is to use all financial resources in a productive way.

b. When there is deflation, an expansion of aggregate demand is required and for this, government increases the public expenditure and reduces the taxes.

2. **Higher Economic Growth and Development:** Economic growth and development is measured by rate of increase in gross domestic Product (GDP) of an economy. Expansionary fiscal policy is needed for this. For economic growth and development, GDP and per capita income must rise for a long time period. Fiscal Policy can raise the levels of investments in an economy. For this, regular investments are required which leads to increase the rate of capital formation. This in turn, helps to increase the levels of output, income and employment in the economy. As a result, the rate of economic growth and development starts increasing.

3. **Higher Employment Rate:** Fiscal Policy aims to accelerate the rate of employment generation so that economy can move towards full employment level. This is possible by raising the level of aggregate demand. Fiscal policy can help to increase the productive public expenditure and reduce taxes on productive activities like small scale industries. Investments in productive activities and infrastructure generate more employment. This expansionary act will boost up investment in the economy which in turn will increase the level of output, income and employment.

4. **Economic Equality:** Most economies suffer from the issue of income and wealth inequalities. The society is divided between rich and poor sections. Fiscal policy aims to reduce these inequalities and bring more equal distribution of income and wealth. For this, Government designs fiscal policy in such a manner that money/income is transferred from the rich to poor via government activities. Government imposes progressive taxes like income and wealth taxes on the richer section and collects tax revenue. This amount is spent by the government on provision of welfare activities for the poor and weaker sections.

5. **Reducing Balance of Payments Deficits:** Balance of Payments (BOP) is a record of all international transactions (current and capital accounts) of a nation during a year. A deficit BOP means that receipts (inflow of money incomes) are less than the Payments (outflow). To reduce this deficit, fiscal policy aims to promote exports by provision of certain fiscal

incentives to producers/exporters like exemption in taxes and provision of subsidies. Rise in exports increases the export receipts which reduces the deficit in BOP.

6. **Balanced Regional Development:** It means more development of backward regions/states so that all the regions/states grow equally. Fiscal policy aims to raise the growth rates of backward regions/states through the allocation of more grants and other funds for creation of infrastructure like roads, power and directly productive activities like small scale enterprises, cottage and villages industries.
7. **Optimum Allocation of Resources**: Fiscal Policy aims to allocate resources mobilized through tax revenues. These allocations are made keeping in view the objectives of fiscal policy like allocation of funds for education, health, development of social and physical infrastructure, investment in small sector, village industries and measures to boost investment in private sector.

To sum up, fiscal policy plays significant role to promote welfare of the people, growth of industries and agriculture and other sectors.

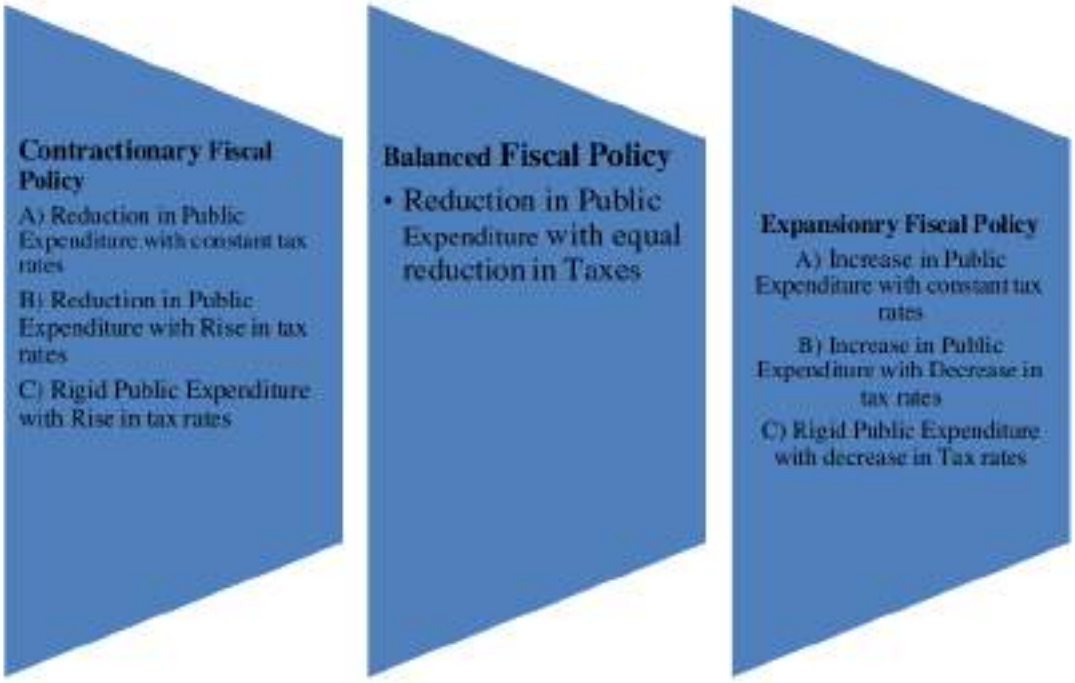
8.9 Types and Various Combinations of Fiscal Policy

A. Neutral Fiscal Policy
B. Expansionary Fiscal Policy
C. Contractionary Fiscal Policy

Neutral Fiscal Policy	Expansionary Fiscal Policy	Contractionary Fiscal Policy
• Government expenditure= Tax Revenue • Budget has neutral effect on the economy	• Government Expenditure > Tax Revenure • Boost to investment and production in the economy	• Government Expenditure < Tax Revenue • Control and contraction of expenditures especailly unproductive expenditures

Most often, the Fiscal Policy is either expansionary or Contractionary. We must understand that under different situations, government uses different combinations of the tools of fiscal policy to get the desired results. When there is need to give boost to investments,

government will design and implement expansionary fiscal policy, for example- during the time periods of deflation or recession/depression. When there is need to restrict/contract the expenditures, government will design and implement contractionary fiscal policy, for example- Inflation.



In Contractionary Fiscal Policy, there are following possibilities mainly,

A) Reduction in Public Expenditure with constant tax rates

B) Reduction in Public Expenditure with Rise in tax rates

C) Rigid Public Expenditure with Rise in tax rates

In Expansionary Fiscal Policy, following combinations are:

A) Increase in Public Expenditure with constant tax rates

B) Increase in Public Expenditure with Decrease in tax rates

C) Rigid Public Expenditure with decrease in Tax rates

Government has to monitor the Fiscal Policy very closely so that price stability as well growth and development and other objectives are achieved. Government will take the decision regarding the combinations of fiscal policy as per the objectives of the policy.

Check Your Progress- I

Q1: What is fiscal policy?

Ans. .....

Q2: Mention the name of types of fiscal policy?

Ans. .....

Q3: Differentiate between expansionary and contractionary fiscal policy.

Ans. .....

8.10 Tools or Instruments of Fiscal Policy

Here, we will know the main tools/methods which government uses to achieve the various objectives of fiscal policy during different economic situations.

Fiscal Policy is operated and implemented through its main tools explained as under.

A. Taxation Policy

This tool relates to the revenue side of the fiscal policy. Tax is a compulsory payment made to the government. The aim of taxation policy is to

(i) mobilize the resources,

(ii) formation of capital,

(iii) achievement of economic equality and

(iv) price stability.

Taxes can be direct taxes like income tax or indirect taxes like sales tax, excise duty, GST etc. Taxes reduces the disposable income of the household sector (Disposable Income = Personal

Income-Taxes). Direct taxes reduce money incomes and indirect taxes reduces real income via rise in prices (Purchasing Power falls). Therefore, changes in tax rates affect the aggregate demand (AD) in the economy. The extent, to which this change affects AD, depends on tax multiplier.

Tax multiplier is the change in AD or Income caused by a change in taxation levels.

Tax Multiplier = ΔY/ΔT or change in income divided by change in tax.

Tax Multiplier = $\frac{-MPC}{(1-MPC)}$ or $\frac{-MPC}{MPS}$

MPC = marginal propensity to consume

MPS = marginal propensity to save

Tax multiplier shows negative relation between change in income or AD and change in tax. It means a rise in taxes reduces AD or income and a fall in taxes increases AD or income. Government will adopt tax rate policy as per the set objectives. Under expansionary fiscal policy, tax rates generally fall and under contractionary fiscal policy, tax rate rise.

B. Expenditure Policy

Government expenditure policy includes expenditures made by the government on development and non- development activities. The main heads of such expenditure are welfare activities like social security contributions by government, transfer payments like pensions, scholarships, expenditure on social and economic infrastructure like hospitals, roads, bridges, health care, education, defense, public enterprises etc.

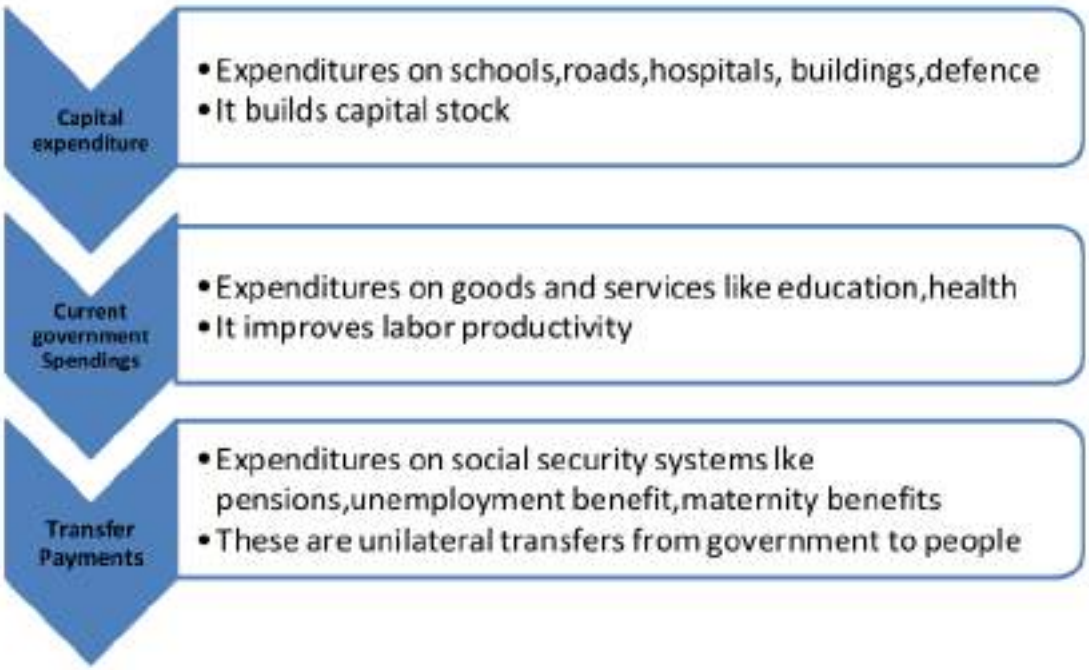
A rise in government expenditure leads to increase in AD and a fall in government expenditure leads to decrease in AD. For example: When government spends money, incomes of people rise, their purchasing power rises, AD in the economy rises. It has expansionary effect.

Government can spend in various ways:

a) Expenditure to buy goods and service which has direct effect on AD.
b) Expenditure on Transfer payments like pensions, medical facilities which have indirect effect on AD.

Government expenditure is classified into three main parts:

(i) Capital Expenditure
(ii) Current government spending and
(iii) Transfer payments.



The extent to which government expenditure affect AD or income, depends on the Government expenditure multiplier. Government expenditure multiplier measures the ratio of change in income to the change in government expenditure.

Government expenditure multiplier = $\Delta Y/\Delta G$ or change in income divided by change in government expenditure.

$$\text{Government expenditure multiplier} = \frac{1}{1-MPC}$$

Where MPC= Marginal Propensity to consume

It shows that there is positive relation between the value of MPC and Government expenditure multiplier. It means a rise in value of MPC will increase the values of Government expenditure multiplier and vice versa. Therefore, a rise in government expenditure will increase income or AD multiplier times and a fall in government expenditure will decrease income or AD multiplier times.

Government will adopt expenditure policy as per the set objectives. Under expansionary fiscal policy, government expenditure rises and under contractionary fiscal policy, government expenditure falls. Government expenditure is directed towards specific groups, practices or goods.

C. Public Debt Policy

Public debt refers to the borrowings taken by the government to meet its expenditures. It can be a) Internal debt- borrowings within the country from non-bank financial intermediaries, commercial banks, central bank and from people through bonds and securities. It involves transfer of funds from people to government. These borrowings may reduce the money/incomes available to/with people. b) External debt- borrowings from outside the country.

Public debt and AD/income generation in the economy are related. Public debt affects AD/income in many ways.

a) Expansion of AD and incomes: After public debt, if there are constant expenditures or same AD by private sector along with rise in government expenditures out of amount of public debt, then there will be expansion/rise in AD/incomes in the economy. This will have an expansionary effect in terms of income, output and employment.
b) Contraction of AD/incomes: After public debt, if there is fall in expenditure or fall in AD by private sector along with rise in government expenditures out of the amount of public debt, then there will be fall in AD/incomes in the economy. This will have a contractionary effect in terms of income, output and employment.

In general, these three tools of fiscal policy are highly significant. However, budget deficits form important part of fiscal policy. Therefore, we can analyze here deficit financing as a tool of fiscal policy.

D. Deficit Financing

Deficit financing is a technique to generate funds to fill the deficit of the budget. This is done by borrowings advanced by central bank by printing new money. Therefore, more deficit financing means more money supply with the government. This tool is used when government expenditures exceed its revenues. When this increased money supply is spent by the government for productive purposes which increase levels of output of goods and services, then it is beneficial for the health of the economy. Otherwise, it may be highly inflationary.

To sum up, government uses combination of various tools per the set objectives for desired results.

Check Your Progress- II

Q1. What is tax multiplier?

Ans. .....

Q2. What is Government expenditure multiplier?

Ans. .....

Q3. What is public debt?

Ans. .....

8.11 Application of the Tools of Fiscal Policy to Achieve Objectives

Use of Fiscal Policy for Internal and External Stability:

1. **Use of Fiscal Policy During Inflation:** Inflation is the process of continuously rising prices. Price stability is essential to achieve this objective; following tools of fiscal policy can be applied.

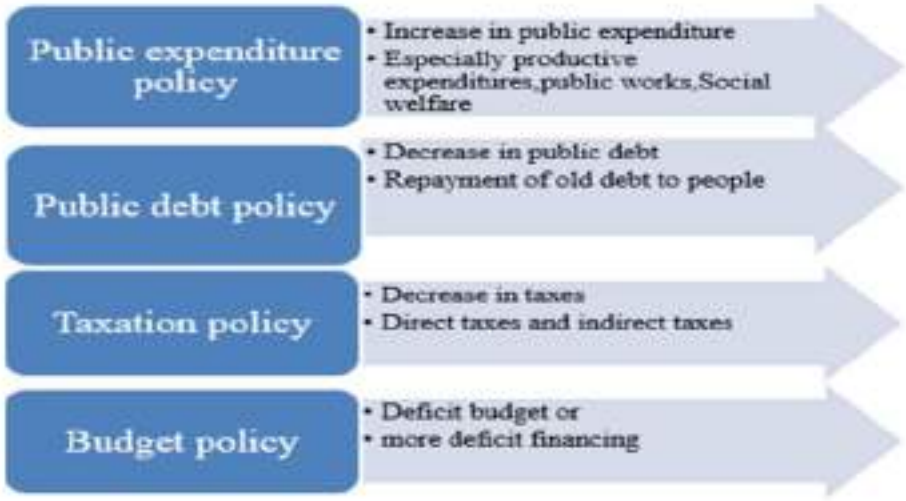
   a. **Public expenditure policy**: Government should decrease public expenditure. Higher levels of government expenditures have expansionary money effects in the economy which leads to rise in prices. Therefore, a fall in public expenditure, especially unproductive expenditures will help to control the rising prices.

b. **Public debt policy:** During inflation, it is essential to reduce the purchasing power of the people or to reduce the available money with the people so as to contract the size of AD in the economy. Therefore, government should borrow more especially from people, so that savings of the people are transferred from people to the government. As a result, total spending by the people or AD will fall.

c. **Taxation Policy:** During inflation, a rise in rates old taxes and imposing new taxes will help to curtail purchasing power of the people. As a result, the spending by the people or AD will fall. This will help to check the rise in prices.

d. **Budget Policy/Deficit Financing:** Ideally speaking, a surplus budget policy is needed during inflation. Surplus budget means when revenues of the government exceed its expenditures. It will help to check inflation.

2. **Use of Fiscal Policy During Deflation/Recession:** Deflation is the process of falling prices. To achieve this objective, following tools of fiscal policy can be applied.



Let us analyze each policy one by one.

a. **Public Expenditure Policy**: Government should increase public expenditure during deflation/recession. Higher levels of government expenditures have expansionary money effects in the economy which will boost the levels of private investment. During times of depression, rise government expenditure acts as *pump priming*. Pump priming means _when the increase in government expenditure acts as incentive to private investment'.

i. Government borrows from banks and idle cash with banks gets utilized and investments by government increase.

ii. Rise in government investments leads to increase in income by multiplier times which in turn boost the private investments.

Therefore, a rise in public expenditure especially on productive activities will help to control the falling prices and profits. Besides this, government can spend more on social welfare activities such as public health, medical services, social security, grants etc. This will raise the levels of AD and investments.

b. **Public Debt Policy:** During deflation, it is essential to increase the purchasing power of the people or to raise the available money with the people so as to expand the size of AD in the economy. Therefore, government should repay the old debts so that money is transferred from government to people. Government should not borrow from the people. As a result, total spending by the people or AD will increase.

c. **Taxation Policy:** During deflation, a reduction in rates of old taxes and fewer new taxes will help to increase the purchasing power of the people. As a result, the spending by the people or AD will rise. This will help to check the falling prices.

d. **Budget Policy/Deficit Financing:** Ideally speaking, a surplus budget policy is needed during inflation. Surplus budget means when revenues of the government exceed its expenditures. It will help to check inflation.

3. Exchange Rate Stability

Exchange stability means minimization of the fluctuations inn foreign exchange rates. For this, the balance of payments (BOP) situation needs to be monitored. An unfavorable BOP (when import payment exceeds export receipts) leads to more fluctuations in exchange rates. Fiscal policy aims to:

a. promote exports by provision of certain facilities like subsidies, tax concessions and alike
b. restrict imports by certain import duties and
c. encourages import substitution

Economic Growth and Development

For economic development, fiscal policy acts as powerful tool. With the use of fiscal policy,

1. Level of investment and rate of capital; formation; mobilization of these savings and increasing investment can be raised.
2. Different tools of fiscal policy like taxation, government expenditures, public debts can be used to achieve this objective.
3. Government itself can invest like private entrepreneurs and encourage private investment for the generation of more production, income and employment.
4. The role of fiscal policy for this purpose is to allocate the resources in an efficient and desirable manner. For example, Government can design fiscal policy to divert resources from non-essential/luxurious production to more useful and essential production.
5. At the same time, price stability is maintained.
6. Fiscal policy focuses on the equitable distribution of income simultaneously and diverts money/incomes from richer sections to poorer sections via its expenditure and tax policies.
7. Employment must be generated along with economic development. Fiscal policy is used for enhancing the skills of human resources (human capital formation). It operates to provide work opportunities. For example, government expenditures on construction work generate employment and tax concessions promotes industries/ small enterprises which provide employment to large number of people.

Remember: _Public expenditure in any sector attracts more recourses and investment while taxes imposed in any sector leads to withdrawal of resources and investments from that sector'- Meier and Baldwin.

Check Your Progress- III

Q1. What do you mean by public debt?

Ans. .....

Q2. Define deficit financing?

Ans. .....

Q3. What is pump priming?

Ans. .....

8.12 Summary

Monetary policy involves the influence on the level and composition of aggregate demand by the manipulation of interest rates and availability of credit. The challenge before monetary policy is that many of the objectives are conflicting. For example, acceleration of development process needs more money supply while control of inflation needs less money supply. A judicious mix of various tools and proper timings are essential for the desired results.

Fiscal Policy is the policy related to public revenues, Public Expenditures, Public Debts and also Deficit Financing by the government. It is a policy relating to government tax and non-tax revenues and government expenditures and government borrowings. In other words, fiscal Policy is the policy related to public revenues, public expenditures, public debts and also deficit financing by the government. Fiscal policy aims at price stability, exchange rate stability, economic development, equitable distribution, and employment generation. The tools of fiscal policy i.e., government expenditures, public revenues, public debt are used to achieve all the objectives. Generally, more than one tool is used simultaneously for the effective and desired results of fiscal policy.

Central bank can use various tools simultaneously for achieving various objectives or to control any instability like inflation and deflation/depression and can regulate the quantum and direction of money/credit supply in the economy.

In the end, for achieving various objectives, fiscal and monetary policies are used simultaneously. A judicious blend of these two macro-economic policies will help to get the desired results. The tools of both these policies must operate in tune with each other, i.e., in the same direction.

8.13 Questions for Practice

A. Short Answer Type Questions

Q1. What do you mean by fiscal policy?

Q2.What are the objectives of fiscal policy?

Q3.Discuss the types of fiscal policy.

Q4.Explain the government expenditure policy under the tools of fiscal policy.

Q5.Explain the use of fiscal policy for the economic growth and development.

Q6.Define monetary policy

Q7 What are the objectives of monetary policy?

Q8 What are the types of monetary policy?

Q9 Explain the quantitative tools of monetary policy

B. Long Answer Type Questions

Q1. Define fiscal policy. Also explain its objectives and types.

Q2. Explain the various tools of fiscal policy

Q3. Explain the applications of the tools of fiscal policy

Q4. Discuss the objectives and types of monetary policy

Q5. Explain the quantitative and qualitative tools of monetary policy

Q6. Discuss the applications of the monetary policy for internal and external stability.

8.14 Suggested Readings

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