GEC S3 01(M/P)

Money, Banking and Financial Systems

SEMESTER-III

ECONOMICS

BLOCK- 1

KRISHNA KANTA HANDIQUI STATE OPEN UNIVERSITY

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COURSE INTRODUCTION

Under the BA programme of this University, you can study Economics as a Pass or Major subject. This course entitled *Money, Banking and Finacial Systems* is a common paper for both Pass and Major subject.This course comprises of 15 units and has been divided into two blocks. The first block comprises seven units and the second block comprises eight units.

BLOCK INTRODUCTION

This is the first block of the course and comprises of seven units.Unit 1 discusses about money. After going through this unit, you will be able to acquire some of the basic concept of money viz., its meaning, types, scope, functions and role. Unit 2 and Unit 3 shall discuss the demand for money.Unit 2 deals with the classical approach of demand for money.In this unit we will discuss the Fisherian approach and Cambridge approach of quantity theory of money and an attempt has been made to differentiate the two approaches of demand for money. Unit 3 discusses the Keynesian approach of demand for money or liquidity preference.Here we will distinguish between various motives of demand for money and will outline the determinants or factors influencing the different types of demand for money. Unit 4 discusses the restatement of the quantity theory of money.Here emphasis has been put on the shortages and deficits of the traditional quantity theory of money and explains the modification of quantity theory of money that has been made by J.M Keynes and Milton Friedman.In Unit 5 we will discuss the supply of money. Here we will understand the meaning and determinants of supply of money and explain the concept of credit multiplier and money multiplier. And a discussion has also been made on the empirical measurement of money.Unit 6 and Unit 7 shall discuss the central bank. In Unit 6, we will explain the different functions that a central bank performs in a modern economy and also discuss the special role played by the central bank in a developing country like India in addition to its traditional role.Unit 7 discusses how the central bank of a country controls both the total volume of credit as well as its composition in the economy.Here we will explain the quantitative and qualitative measures of credit control.

While going through a unit, you will notice some along-side boxes, which have been included to help you to know some of the difficult, unseen terms. Again, we have included some relevant concepts in “LET US KNOW” along with the text. And, at the end of each section, you will get “CHECK YOUR PROGRESS” questions. These have been designed to self-check your progress of study. It will be better if you solve the problems put in these boxes immediately after you go through the sections of the units and then match your answers with “ANSWERS TO CHECK YOUR PROGRESS” given at the end of each unit.

UNIT 1: CONCEPT OF MONEY

UNIT STRUCTURE

1.1 Learning Objectives

1.2 Introduction

1.3 Concept of Money

- 1.3.1 Origin of Money
- 1.3.2 Definition of Money
- 1.3.3 Money and Currency

1.4 Functions of Money

1.5 Types of Money

1.6 Role of Money in the Economy

1.7 Let Us Sum Up

1.8 Further Reading

1.9 Answers to Check Your Progress

1.10 Model Questions

1.1 LEARNING OBJECTIVES

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

- discuss the origin of money
- define the term 'money', and discuss its different types
- distinguish between 'money' and 'currency'
- explain the different functions of money
- outline the role money plays in an economy and
- illustrate the role of money in a developing economy.

1.2 INTRODUCTION

In this unit, we are going to discuss money, its origin, functions, types and the role it plays in the economy in general and in developing economy in particular. There will be an attempt to offer the various definitions of money based on its functions, and characteristics, and so on. On the whole, the concept of money is being analysed in a manner to give you some basic idea about money as an economic concept.

1.3 CONCEPT OF MONEY

Money is anything that is generally acceptable as a means of payment in the settlement of all transaction,including debt.It is often said that money is a matter of functions four- a medium of exchange,a unit of account,a standard of deferred payment and a store. There has been a lot of controversy over the concept of money.So in order to understand properly the concept of money , let us first understand the origin of money, definition of money from different perspectives and the difference between money and currency.

1.3.1 Origin of Money

It is not possible to say exactly when money came to be used. But as Keynes Says, *"Like certain other elements in civilization, it is more ancient institution than we can believe".* However, with the various stages of economic development, it has often changed its form. There are two most prevalent views regarding its origin. They are:

- Theory of spontaneous growth, and
- Invention theory.
- **The theory of spontaneous growth** states that certain things create spontaneous needs once it is discovered. Such needs may not however be originally planned. For example, steam engines were discovered to run trains. But later it was also used in many other tasks like operating the mills. What it means is that discoveries of such products create spontaneous needs which are not originaly planned. This was the case with money as well.

Thus, it was its discovery that created the need for its use. First of all, an article was exchanged as people had a desire to have it and gradually it began to be used as a medium of exchange and it acquired other functions and, in course of time, became indispensable. It has assumed more importance than the original one, so much that we have begun to feel that some of them must be performed if the work of the society is to go on smoothly.

- According to **the invention theory**, men be set by inconveniences of the barter actively sought for a medium of exchange and a measure of value and by a common consent assigned this task to one commodity and then to the other. Of the two functions enumerated above, a measure of value was perhaps more important. Cows and goats were used as a measure of value. Other things followed, e.g. pearls, beads of different types, furs and finally metals. What is of importance to us is not as to how we come across money but how it has proved to be useful for us. Money has undoubtedly removed all the inconveniences of barter and serves us in other ways as well.

1.3.2 Definition of Money

Money has been defined from different perspectives. The broad classifications are as follows:

- Descriptive or functional.
- Based on general acceptability
- Based on state theory and
- Based on scope, i.e whether covering only metallic coins or covering all sorts of money or covering all legal tender money.
- **Descriptive or Functional Definitions of Money :** Definitions of money in this category describe its essential functions. Some of the important definitions in this category include:
  - *"Money can be defined as any thing that is generally acceptable as a means of exchange (i,e as a means of settling debts) and that at the same time acts as a store of value."*-Crowther
  - *"Money itself is that by delivery of which debt contracts and price contracts are discharged and in the shape of which a store of general purchasing power is held."* –Keynes.
  - *"The word money has been used to designate the medium of exchange as well as the standard of value."*- Halm.

In the definitions given above an attempt has been made to set out the functions of money, though not with much success. In the definition given by Crowther there is no mention of any function. It is not at all descriptive; other definitions set out only some of the functions of money. Hence, they are also incomplete. But no definition could set out all the functions. They serve their purpose if they set out in brief only the basic essentials and the course of development.

- **Definition Based on General Acceptability :** Definitions of money in this category lay stress on acceptance of the monetary unit by the public at large. Important definitions in this category include:
  - *"Money includes all those things which are (at any given time or place) generally current without doubt or special enquiry as a means of purchasing commodities or services and of defraying expenses."-Marshall.*
  - *"In order for anything to be classed as money, it must be accepted fairly widely as an instrument of exchange, which means that a good number of people are ready to accept in payment for goods and services provided by them."-Pigou.*
  - *"Money is commodity which is used to denote anything which is widely accepted in payment of goods as in discharge of other business obligations."-Robertson.*

All the definitions given above lay stress on general acceptability, and in some cases, they set out some of the functions as well. Hence, they are satisfactory. However, acceptability should be voluntary.

- **Based on State Theory:** These definitions lay emphasis on the recognition by the state. As debts constitute one of the most important elements in economic relations, the upholders of such definition say that only that commodity could be termed as money by the payment of which they are deemed to be settled legally.

German economist Knapp and British economist Hawtrey represent this school of thought. They have defined money with

this end in view. Knapp's definition of money is *"Any commodity assigned by the state the role of setting debts shall be deemed as Money."* Hawtrey has made an improvement on it by adding there to *"and acting as units of accounts."*

It may be mentioned that no state could force people to accept a commodity as money, if it loses its value heavily. As for example, during the post World War I period German Marks were not accepted by the people of its country, though they continued to be designated as money by the state authority. Finally, it had to be scrapped and fresh currency had to be issued.

- **Based on the Scope of Money:** Money covers only the metallic money or all sorts of money or only legal tender money. The following definitions may be cited as examples-
  - *"Money is a commodity which is used to denote anything which is widely accepted in payment for goods or in discharge of other kinds of business obligations."* – *Robertson.*

    As only metallic money is widely accepted this is a definition representing the first school of thought.
  - *"Money is a purchasing power-something which things buy things."- Cole.*

As metallic money, notes and credit instruments, for example, cheques, bills of exchange, and drafts all have purchasing power and buy things, this is a definition representing the second school of thought.

As the metallic money and the legal tender notes are the only forms of money which are generally acceptable (at any time and place) these are the definitions representing the third school of thought.

1.3.3 Money and Currency

There is another term, called 'currency', which is usually regarded to be a synonym of the word money. But it is always not so. The word 'currency' comes from the Latin word 'currere', which means 'to flow' or 'to run'. Only the metallic money and legal tender notes run current. As such, it may include only

these, and nothing more. We may be clear about the definition of the above two in this way:

Money = Metallic money+legal tender notes+credit instruments.

Currency = Metallic money + legal tender notes.

= Money – credit instruments.



CHECK YOUR PROGRESS

Q 1: Define Money. (Answer in about 30 words)

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Q 2: Is there any difference between money and currency? (Answer in about 40 words)

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1.4 FUNCTIONS OF MONEY

In modern times, money performs a number of functions. They are usually classified under three broad heads-

- Primary functions
- Secondary function
- Contingent functions
- **Primary Functions of Money :** Primary functions of money include:
  - **Medium of Exchange:** The main inconvenience of direct exchange of goods or barter is the necessity for double coincidence of wants. This is easily overcome by using money as a medium of exchange. In doing so, exchange is broken into two parts – one selling and the other buying. In selling, goods or services are parted with for money, and in buying, money is parted with for goods or services. Ultimately, there is an exchange

of goods or services on the one hand and goods or services on the other hand as well. But money intervenes between the two. That is to say, it facilitates the two operations - parting with goods or services (i.e. selling) and receiving them (i.e. buying).

- **Measure of Value:** Money is a measure of standard value. It serves as a common denominator. All goods and services are valued in money, and as such when we wish to exchange one commodity for another, as each commodity is measured in money, we can compare their values and determine this relative equality. Thus, we can say how much of one commodity is equal to how much of another commodity.

- **Secondary Functions :** Secondary functions arise out of its primary functions. These functions include:
  - **Store of Value :** As soon as the practice of employing a certain article as a medium of exchange becomes general, people begin to store up such an article in preference to others. Such articles represent goods and services and people store them. Therefore, money serves as a store of value. It neither requires any considerable space for storage nor does it perish by lapse of time. As it serves as a store of value, it also serves as a liquid asset.
  - **Standard of Deferred Payments :** When payment in connection with an exchange transaction is deferred, it must be made in something standard whose value remains stationary. The value of money usually remains stable as compared to that of other commodities. Hence, its use for deferred payments involves no risks, either to the creditor or to the debtor.
  - **Transfer of Value :** Money helps in the transfer of value from one person to another and from one place to another. It can be handled conveniently. Paper money worth any amount could be transmitted easily at negligible expenses and with safety.
- **Contingent Functions :** Money performs these functions only when a particular economic system prevails in the society. In the present circumstances they perform other functions as shown below:
  - **Making Capital Liquid :** Stored value provides capital. Under the present economic system, production is carried on by purchasing

and hiring factors of production. This is possible only because capital is available in a liquid form of money.

- **Distribution of Joint Product :** Production is made by joint efforts in these days. Hence, all those contributing to it, have a share in it which can be paid to them conveniently only when the whole produce is sold for money. This is distributed among them according to the agreements made earlier.
- **Basis for Credit :** Industry and trade in modern times depend largely on credit. Use of money has facilitated the establishment of banks and their functioning entirely depends on it. They raise their capital by issuing shares and receiving deposits in the form of money and create credit and distribute it on its basis.
- **Raising Efficiency of Various Factors of Production:** There are a number of units of each factor of production that combine and produces certain thing/effort. In order to put their utmost, each must be assured of his/her remuneration in full, which is possible only because of the use of money. Calculations are made in it to the furthest extent.
- **Maximisation of Satisfaction :** A consumer allocates his income on various items in such a way as to derive maximum satisfaction from each of them. Besides, he spreads his expenditure over the present and the future as well as also with this end in view. Keynes' theory of expenses, saving and investments is based on this principle.
- **Provides Solvency:** An individual or an institution is enabled to pay all liabilities only if he or it possesses necessary money or is able to raise it easily. Money valuation of the assets and liabilities shown therein tells exactly what the position is.



CHECK YOUR PROGRESS

Q 3: Mention the main functions of money. (Answer in about 30 words)

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Q 4: Mention the basis of the classification of money (Answer in about 50 words)

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1.5 TYPES OF MONEY

Money is of several kinds. The basis of classification of money include : (a) issuing authority, (b) nature of money, (c) legality of tender and (d) contents. These have been elaborated in the following:

- **According to Issuing Authority:** According to this classification, money may be classified as government or bank money.
  - **Government Money :** This is issued by the government or by any bank following government orders. When issued by the government it may be called state money and when issued by a bank it may be called bank money. Its acceptance in payment as also in discharge of indebtedness, which is no way different from payment, is compulsory according to the law of the land. This is so all over the area under its jurisdiction. In our own country all the coins and one rupee notes are issued by the government and two rupee and its above denominations are issued by the Reserve Bank of India under the authority of the state. All these constitute government money. Acceptance of payment in them is compulsory throughout India.
  - **Bank Money:** Money issued by banks without any authority from the government as stated above is called bank money. Its acceptance in payment is obligatory. Examples of such moneys are cheques, bills of exchange, promissory notes, bank drafts etc. These days travellers' cheques are also issued. They are known as commercial money as well.
- **According to the Nature of Money:** According to the nature of money, money can be classified as :
  - **Near Money:** Money has got the characteristic of liquidity. Near

money is nearly liquid. Payment cannot be made in near money. But near money may be converted into ready money or money proper within a short time. Examples of near money are treasury bills, debentures, bonds etc. There is a market for these at any time.

- **Money Proper or Real :** Money proper or real money is the money which is in circulation in a country. It is the medium of exhange and medium of payment. All money issued by the government or under its authority and issued by the central bank is real money. For example, in India rupee notes and the coins are the real money.

- **According to the Legality of Tender:** According to the legality of tender, money can be classified as
  - **Legal Tender Money :** This is money in which payment can be made legally. Its acceptance cannot be refused. This may be ***(a) unlimited legal tender*** or ***(b) limited legal tender***.
    - ***Unlimited Legal Tender :*** This money may be paid in discharge of debts of any amount. All rupee coins and all paper currency is unlimited legal tender in our country.
    - ***Limited Legal Tender:*** This money may be paid in discharge of a limited debt. All coins below the denomination of rupee one have limited legal tender.
  - **Optional Money :** This is a bank money or commercial money. It may be accepted or it may not be accepted in payment. This depends upon the choice of the receiver.
- **According to Contents:** Money may be commodity money (which was prevalent in the barter system), metallic money and paper money. Paper money may be legal tender money or credit money (this is optional).
  - **Metallic Money :** Metallic money is in the form of a coin. It may be a) full bodied or natural and b) token.
    - **Full bodied or Natural Money:** The characteristics of a full bodied or natural coin are as follows.

      (i) Principal coin : This is chief money. Others are either its parts or multiples. Money in the form of rupee in India is

chief money.

(ii) Free coinage: Mints are open for its coinage. Anybody could take a fixed quantity of the metal and get it minted at the mint. Free coinage may be gratuitous where no fee is charged for mintage. It may also be non gratuitous where fee is charged for mintage. If the fee is equal to the actual mintage cost, it is known as *brassage* and if the fee is more than the actual cost of the minting it is known as *seigneurage*.

(iii) Face value and intrinsic value the same: In full bodied coin, there is no significant difference between the two values i.e. face value and its intrinsic value.

(iv) Unlimited legal tender: Legal tendership of this coin is unlimited. Payment can be made to any extent in this coin.

A full bodied coins is also called a ***standard coin***. These coins are made of a well defined weight and fineness.

- **Token Money Coin :** A token coin is a subsidiary coin and being of smaller denomination forms a fraction of the principal coin. It is representative of a particular value assigned to it. Its essential features are:
  - *(i) The mint is not open to the public for its free coinage:* It has a limited or restricted coinage, which means that only the government can issue coins.
  - *(ii) The exchange value of the coin is higher than its metallic value:* It is a metal token marked by the government, serving as a representative of the value allotted to it.
  - *(iii) Legal tender is limited:* This means that it can be offered in payment or discharge of a limited amount of debt. Beyond a certain limit, it is not compulsorily acceptable and the creditor may refuse.

- **Paper Money :** The term 'paper money' applies to *notes* and *credit instruments* or both. Paper money specially are of these types: (a) representative (b) convertible (c) Inconvertible and (d) Fiat money.
  - **Representative Paper Money :** This type of paper money is fully backed up by gold and silver reserves. Under the

system of representative paper money, the gold and silver equivalent to the value of the paper notes issued are kept in the reserve by the money authority.

- **Convertible Paper Money :** It refers to that type of paper money which is convertible into standard coin at the option of the holder. The paper notes issued by the monetary authority are backed up by gold and silver reserves, but the value of these metallic reserves is less than the value of the notes issued. The basic principle underlying this system is that all the notes are not simaltaneously presented by the public for encashment. Therefore, the value of gold and silver kept in the reserves is less than the value of notes issued by the monetary authority. Under this system, the reserves comprise of two portions: metallic portion (this portion contains gold, silver and standard coins) and fiduaciary portions (this portion contains only approved securities).
- **Inconvertible Paper Money :** The system of inconvertible paper money prevails in a country when the monetary authority gives no gurantee to convert the paper notes into coins or other valuable metals. Such a type of paper currency circulates on account of the high credit enjoyed by the monetary authority. Under this system, the issuing authority keeps no metallic reserves behind paper money. It is possible that the issuing authority backs up the note issue with government securities, treasury bills, and even bonds. Such a type of paper currency can be issued at best only in a limited quantity but, if needed, the authority may issue more paper notes without a metallic cover.
- **Fiat Money :** This is only a variety of inconvertible paper money and is issued generally at a time of crisis. That is why it is sometimes referred to as emergency currency. It is backed up neither by the metallic nor the fiduciary cover. The monetary authority gives no guarantee to convert fiat money into metallic coin. However, being backed by government order (fiat),it is an unlimited legal tender, though it is issued in limited quantities.



CHECK YOUR PROGRESS

Q 5: What do you mean by paper money? Mention it's different types. (Answer in about 40 words)

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Q 6: What advantages do you find in paper money? (Answer in about 50 words).

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1.6 ROLE OF MONEY IN THE ECONOMY

Money plays a crucial role in every aspect of our lives. We can hardly think of a situation where money does not have a role to play. In this section, we shall discuss the role of money in an economy, with particular emphasis on a developing economy.

Money occupies an important place in the modern economy. Money has influenced and facilitated all economic activities in the field of consumption, production, exchange, distribution and public finance.

- The purchasing power implicit in money can be utilised by consumer at his choice. Due to the general acceptability and comparative stability of money, the consumer can utilize it as and when it suits him.
- Money helps the consumer to equalise the marginal utilities accruing from diverse commodities. Every consumer wishes to secure the maximum utility from his expenditure. This is possible only when the marginal utilities obtainable from the various commodities are equal to each other. Money plays an important role in establishing equality among the marginal utilities of various commodities upon which the consumer incurs expenditure. Besides, money ensures freedom of choice to

the consumers who can exercise their choice by comparing monetary prices of the rival products.

- Money helps an individual producer in a number of ways, such as, buying raw materials, borrowing capital, advertising finished products and in combining the various factors of production. Besides, money helps the producer in making calculation regarding production, e.g., cost calculations. Further, money helps to determine the quality and quantity of productions of a modern society through the functioning of the price mechanism. This price mechanism helps the society to discover what consumers want and how much they want of particular goods.
- Money has removed all the difficulties of the barter system.
- Division of labour and specialization in modern times have been possible, where money plays a special role in payments of the various processes and sub.-processes, in which the workers continue to work separately in different groups.
- The savings of the common people can be converted to investment with the help of money where individual savings are pooled together by banking institution and made available to the entrepreneurs for investment purposes.
- Price mechanism expressed in terms of money allocates economic resources to different industries and lines of production in a capitalist economy as well as in a socialist economy.
- Money facilitates trade by serving as a medium of exchange. In a modern economy rapid exchange is possible because of money.
- Money makes capital more liquid. On account of its increased liquidity, capital becomes more mobile and it makes it possible to divert capital from less productive uses to more productive uses. With this increased mobility of capital the economic development of a country becomes possible.
- The rewards to the various factors of production are distributed in terms of money. Rent, interest, wages and profits are all determined and paid to factors of production in terms of money.

- The government receives its income in the form of taxes, fees, prices for its utility services etc, and utilizes this income for administrative and developmental purposes. Without money, the administrative and developmental function of a modern state would be very difficult. Without money fiscal management by the government would be an impossible task. Money helps a lot in efficient accounting and budgeting.
- Besides, money plays a key role in raising the standard of living of the society by way of increasing overall production and through the equitable distribution of wealth there by promoting social welfare. It has also encouraged trade and commerce. People residing in distant regions meet each other for commercial purposes and this serves to strengthen the national unity in a country.

Thus, money serves its role not only in economics but also in social and governmental functions. Let us now discuss its role in a developing economy.

Money plays an important role in a developing economy as well. In a developing country it is required to accelerate the economic growth rate and thereby raising the standard of living of the people. For this, it resorts to the technique of economic planning to mobilise the economic resources. But monetary resources are scarce in comparison to the real resources in such countries. They require monetary resources on an adequate scale to activate their dormant real resources. Therefore, the governments of these countries arrange adequate finance or monetary resources to accelerate economic development of the country from all possible sources, e.g., tax, borrowing from the public, deficit financing and, if required, it may be forced to issue inconvertible paper money on a large scale to meet the monetary requirements of economic development . In all these cases, money plays a significant role.

The government of a developing country has to mobilise adequate foreign exchange resources to step up the economic growth, besides mobilizing the internal resources, specially in stimulating exports and cutting down unnecessary imports. In this regard money has a special role.



CHECK YOUR PROGRESS

Q 7: How does money help an individual producer? (Answer in about 50 words)

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Q 8: What are the different sources of income of a government? How does the government utilise its income? (Answer in about 30 words)

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1.7 LET US SUM UP

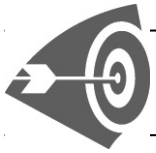
- There exists two theories of the origin of money: the theory of spontaneous growth and the invention theory.
- Money has been defined on the basis of their nature which means
  - descriptive or functional
  - based on general acceptability
  - based on state theory
  - Scope - whether covering only metallic coins or covering all sorts of money or covering all legal tender money.
- There are some differences between money and currency.
- Functions of money are classified broadly in three heads–
  - Primary functions - medium of exchange and Measure of value
  - Secondary functions - Store of value and standard of deferred payment, standard of value.
  - Contigent functions - Making capital liquid, distribution of joint products, basis of credit, raising efficiancy of various factors of production, maximisation of statisfaction, providing solvency.

- Types of money are classified on the basis of i) issuing authority ii) value of money, iii) legality of tender and iv) contents.
- Money has an immense role in the economic activities of an economy and all round economic and social development.
- For the all round development of a poor or developing country, money plays a crucial role.



1.8 FURTHER READING

- D' Souza, E. (2009). *Macro Economics.* Pearson Education: New Delhi
- Rana, K. C. & Verma, K. N. (2009). *Macro Economic Analysis.* New Delhi: Vishal Publishing Co.
- Sheth, M. L. (2002). *Money, Banking, International Trade and Public Finance*. Agra: Lakshmi Narayan Agarwal.



1.9 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q No 1: Money can be defined on various bases,but the main characteristics required the money to be defined are cognigibility, utility, portability, divisibility, indestructibility and homogeinity (CUPDISH) which will lead to the general acceptability of it by the people.

Ans to Q No 2: The difference between money and currency can be shown as :

Money = Metallic money+legal tender notes and coins+credit instruments

Currency = Metallic money + legal tender notes.

= Money – credit instruments.

Ans to Q No 3: Primary functions - medium of exchange, measure of value.

Secondary functions - Store of value, standard of deferred payments, transfer of value.

Contingent functions - making capital liquid, distribution of joint products, basis of credit, raising efficiency of various factors of production, maximisation of satisfaction, providing solvency.

Ans to Q No 4: Bases of classification of money:

i) Based on issuing authority money can be divided as Government money and Bank money.

ii) Based on the nature of money, money can be divides as near money and money proper or real money.

iii) Based on the legality of tender, money can be divided as legal tender money, unlimited legal tender money, limited legal tender money and optional money.

iv) Based on its contents, money can be divides as metallic money, paper money.

Ans to Q No 5: Paper money consists of notes and credit instruments. Types of paper money are:

- Representative paper money: This type of paper money is fully backed up by gold and silver reserves.
- Convertible paper money: The paper notes issued by the monetary authority are backed up by gold and silver reserves; but the value of these metallic reserves is less than the value of notes issued.
- Inconvertible paper money: Under this system, the issuing autority keeps no metallic reserves behind paper money. and
- Fiat money: This type of money is issued during emergency. It is backed up neither by the metallic not the fiduciary cover.

Ans to Q No 6: Advantages of paper money are:

- Value of paper on which it is printed is negligible, but it circulates as money and may be worth anything.
- It could be printed for highest denomination and early portable.
- Any denomination can be printed.
- Paper money of the same denomination is similar in look.
- The shade of the paper, its design and printing are such that it could be recognised easily.
- Though it has limitation in destructibility in many cases, it can be kept safe if little precaution is taken. Issuing banks make payment of dilapidated notes provided serial numbers printed on them are legible.

Ans to Q No 7: Money helps an individual producer in the following ways:

- Buying raw materials, borrowing capital, adverstising of finished products etc.

- Making estimates regarding volume of production, cost calculations etc.
- With the aid of price mechanism, it helps also to determine quality and quantity of production.

Ans to Q No 8: The government receives its income from the sources like taxes, fees, prices for its utility services etc.

The government utilises its income for administrative and developmental purposes.



1.10 MODEL QUESTIONS

Short Questions (Answer each question in about 150 words)

Q 1: Define money based on its different characteristics.

Q 2: What are the main functions of money?

Q 3: What is paper money? Mention its main characteristics?

Q 4: Write a short note on the origin of money.

Essay-type Questions(Answer each question in about 300 – 500 words)

Q 1: Discuss the definition of money and its various functions.

Q 2: Explain the different types of money based on the important criteria.

Q 3: Enumerate the role of money in an economy.

Q 4: Discuss the role of money with special reference to a developing country.

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UNIT 2 : DEMAND FOR MONEY : CLASSICAL APPROACH

UNIT STRUCTURE

2.1 Learning Objectives

2.2 Introduction

2.3 The Classical Approach to Demand for Money

- 2.3.1 Fisherian Approach to Quantity Theory of Money
- 2.3.2 Cambridge Approach to Quantity Theory of Money
- 2.3.3 Comparison between Fisherian Approach and Cambridge Approach

2.4 Let Us Sum Up

2.5 Further Reading

2.6 Answers to Check Your Progress

2.7 Model Questions

2.1 LEARNING OBJECTIVES

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

- state the classical approach of demand for money
- discuss the Fisherian approach of quantity theory of money
- discuss the Cambridge approach of quantity theory of money
- differentiate between cash transaction approach and cash balance approach.

2.2 INTRODUCTION

The term 'demand for money' has been interpreted in two different senses depending upon the two different kinds with regard to the nature and functions of money, viz., a) money as a medium of exchange and (b) money as a store of value. As such, there are two different concepts of demand for money: (i) money as a medium of exchange and (ii) money as a store of value. The former is the classical view of the demand for money while the latter is said to be the modern view of the demand for money.In this unit we will discuss the two classical approaches of demand for money viz. the Fisherian approach and the Cambridge approach.

Apart from these, a comparison is to be made between the

Fisherian approach and the Cambridge approach showing the similarities and dissimilarities between the two approaches so that you can easily trace the superiority of the Cambridge approach over the Fisherian approach. Thus, after going through this unit you will acquire a fair idea about the demand for money and the two approaches of quantity theory of money.

2.3 CLASSICAL APPROACH TO DEMAND FOR MONEY

According to the classical economists, money is not demanded for its own sake. Money is demanded because it enables us to buy goods and services to satisfy our needs. This means that the demand for money arises on account of exchange transactions of goods and services in the economy. The larger the volume of transaction of goods and services to be carried on during a given period, the larger the demand for money in the economy. At any time the demand for money depends upon the supply of exchangeable goods and services in the market. Since the supply of exchangeable goods and services in the market is not constant and it changes from time to time, so does the demand for money. This conception of the demand for money is known as the transaction or medium of exchange conception of the demand for money.

According to the classical economists, the demand for money is determined exclusively by objective factors such as the volume of exchange transactions taking place in the economy and it is completely independent of subjective factors.

Thus, classical economists like Irving Fishar (an American economist) holds the view that the demand for money arises exclusively from the volume of exchange transactions in the economy. Since the volume of exchange transactions is relatively stable in a short period, therefore, the demand for money is also stable in a short period. Thus, in a short period the value of money is largely determined by the supply of money rather than the demand for it.

Quantity Theory of Money : The quantity theory of money is an old theory, advanced by a sixteenth century Italian writer Davanzatti, who said that the value of money changes inversely as its quantity. Later the classical economists like David Ricardo, David Hume and J.Mill explained the value of money in terms of the quantity theory of money. The theory has two versions: American version and Cambridge version.

2.3.1 Fisherian Approach to Quantity Theory Money

The credit for popularising this version of the quantity theory of money rightly belongs to the well-known American economist, Irving Fisher, who in his book "The purchasing power of Money", published in 1911, gave it a quantitative form in terms of his famous equation of exchange. According to Fisher, money is required for spending. This version of quantity theory of money takes into account only the medium of exchange function of money. Irving Fisher says that the total amount of money in any country during any period of time will be equal to the total amount of goods and services bought and sold, which means that the quantity of money divided by the total volume of goods will be the price of one unit of good. Let us illustrate this by an example as has been shown in Table 2.1:

Table 2.1: Fisher's Approach to the Quanity Theory of Money

Quantity of money *(1)*	**Volume of goods** *(2)*	**Average prices** *(3)*	**Total value of goods** *(4) = (2 x 3)*
100	8	12.50	100
100	10	10.00	100
100	16	6.25	100
100	20	5.00	100
100	25	4.00	100

In the above example the quantity of money (Col.1) and total value of goods (Col.4) are equal.

Fisher puts this equation as follows:-

Total quantity of money in a given period = Total value of goods and services bought and sold (transacted).

One side represents the supply and the other side represents the demand i.e., the demand for money.

The Equation of exchange is set forth as : MV=PT,

Where, M represents the total quantity of money in circulation, V indicates the velocity of circulation of money, i.e.,

the average number of times each unit of money is spent on the purchase of goods and services per unit of time,P represents the general price level or the average price per unit of T, and T represents the total valume of transactions (of goods and services).

This MV or the product of M and V (the left hand side of the equation of exchange) gives the aggregate effective supply of money and thus, represents the total supply of money in the economy.

PT or the product of P and T (the right hand side of the equation of exchange) represents the money value of all the goods and services bought during a given period of time. It indicates the total demand for money. The demand for money is essentially the demand for transactions purposes and not for its own sake. Thus, the demand for money is equal to the total value of all goods and services transacted during any given period of time. Fisher points out that in a country during any given period of time, the total quantity of money (MV) will be equal to the total value of all goods and services bought and sold (i.e. PT).

The above equation (transaction equation) can also be expressed as follows : $P = \frac{MV}{T}$. This implies that the quantity of money determines the price level. The price level varies directly with the quantity of money and the value of money varies inversely with the changes in the supply of money.

But in modern times, money includes banks' demand deposit or credit money as well. Recognising the growing importance of bank deposits or credit money, Fisher later on extended the equation of exchange to include credit money in the form of :

$$MV + M'V' = PT, \text{ or } P = \frac{MV + M'V'}{T}$$

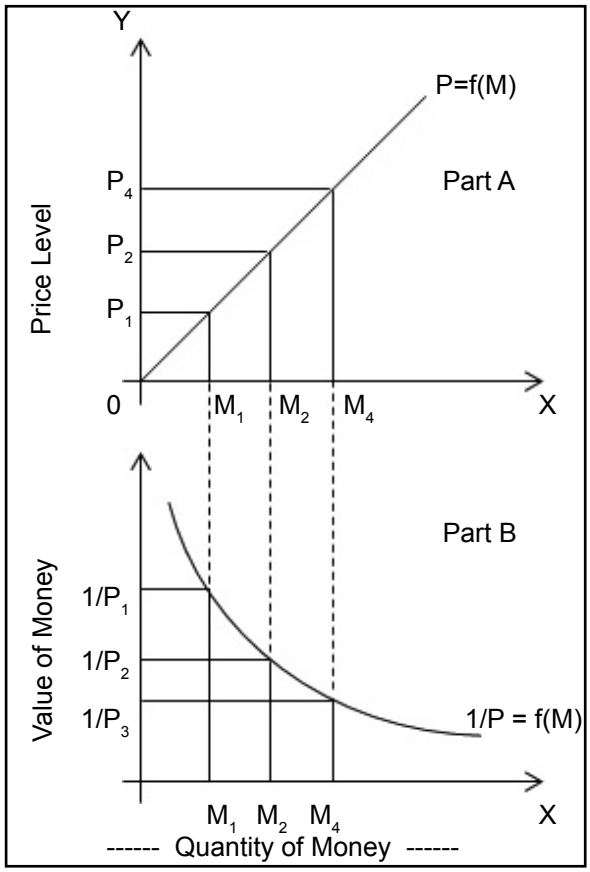
Here, M' = deposits in the bank or credit money, V' = velocity of circulation of credit money.

From the equation it follows that the price level (P) is determined by i) the quantity of money in circulation (M), ii) the

velocity of circulation of money (V), iii) the volume of bank or credit money ($M^{/}$), iv) the velocity of circulation of bank or credit money ($V^{/}$) and iv) the volume of trade (T). The equation of exchange further shows that the price level (P) is directly related to M,V, $M^{/}$ and $V^{/}$ and inversely related to T. Fisher established a direct and proportionate relationship between the changes in the quantity of money and the resultant price-level.

Fisher's quantity theory of money is explained with the help of the following figure 2.1.

Figure 2.1: Fisher's Quantity Theory of Money



In figure 2.1, part- A shows the effect of changes in the quantity of money on the price-level. When the quantity of money is M_1, the price level is P_1, when the quantity of money is doubled M_2, the price level is also doubled P_2. Further, when the quantity of money is increased four fold to M_4, the price level also increases by four times to P_4. This relationship is expressed by the curve P=f (M) from the origin at 45^0. Part-B of figure shows the inverse relation between the quantity of

money and the value of money, which is taken on the vertical axis. When the quantity of money is M_1, the value of money is $\frac{1}{P_1}$. But with the doubling of the quantity of money to M_2, the value of money becomes one half of what it was before, $\frac{1}{P_2}$. And with the quantity of money increased by four-fold to M_4, the value of money is reduced to $\frac{1}{P_4}$The inverse relationship between the quantity of money and the value of money is shown by the downward sloping curve $\frac{1}{P}$=f(M) .The above conclusion of Fisher is based on the following assumptions.

Assumptions of Fisher's Equation of Exchange:

- The price level or P is a passive element in the equation of exchange ; P is affected by other factors but it does not effect those factors. P is the resultant, not the cause.
- The volume of trade (T) is an independent element in the equation of exchange and remains constant in the short period. The assumption is that there exists full employment of resources in society. T is not affected by any change in any of the other elements in the equation of exchange (Say, M, V, M/, V'); rather is determined by certain other factors, such as natural resources, climatic condition, population, techniques of production etc.
- The velocity of circulation of money (V is an independent element in the equation and like T) is also constant in the short period. Any change in M or P has no effect on V, for V depends upon external factors, such as commercial customs of the country, banking habits of the people, trade activities, facilities of investment etc. Since these factors do not change in the short period, V may be more or less constant during this period.
- The ratio of credit money to legal tender money remains constant. In Fishers words " Under any given conditions of industry and civilization, deposits tend to hold a fixed normal ratio to money in circulation. Thus, the inclusion of M/ does not normally disturb the quantitative relation between money and prices."

Critical Evaluation of the Theory:

The Fisherian approach of the quantity theory of money has been subjected to the following criticisms :

- The quantity theory of money is based on certain unrealistic assumptions. That the factors V, V/, T remain constant is not correct. There may be other factors which may bring about a change in price; for instance, there may be changes in total income. The real cause of the price change is the individual income. During the depression, even if there was abundance of money supply, the income was low and hence the price was low.
- The three factors M,V and T are not independent variables as Fisher says. They are interdependent; for instance, a change in M itself may cause change in V and thus causes a change in P disproportionate to a change in M. When a currency depreciates, people do not wish to hold it, hence its rapidity of circulation (V) increaseas and prices rise. Similarly, a change in M may cause a change in T, and a change in P may bring about a change in M. An increase in the supply of money (M) may bring about a rise in prices (P) which may raise profits, and thus, provide a stimulus to production (T).
- Fisher's equation rests on the assumption of full employment in which the volume of trade (T) is constant. But in case factors are idle, a rise in total spending may bring about an increase in production and as such may not lead to a proportionate rise in prices. According to critics, the state of full employment does not last long. For several reasons, the prices of goods and services change much more than in proportion to the change in the quantity of M.
- A serious defect in the theory is that it offers us a long-term analysis of the value of money. The theory ignores the short period. Sometimes there are drastic and far reaching changes in the value of money in a short period. Lord Keynes rightly observed that the study in the long-

run was of little value and said 'in the long-run we are all dead.'

- The quantity theory does not tell us precisely how changes in money supply influence the price level. It shows only the last stage of the rise in the price level consequent upon an increase in M, but it does not explain the actual process through which an increase in money supply increases the price level stage, by stage. According to Prof. Hawtrey, changes in money supply do not affect the price level directly. They influence first the rate of interest, and in turn influences the price level. The main drawback of the Fisherian equation is that it merely mentions the changes in the price level instead of providing causal explanation of the whole phenomenon.
- The quantity theory is one sided and is incomplete in the sense that it considers only the supply side of money as the most important factor and assumes the demand for money to be constant. Thus, it neglects the demand for money which can cause changes in its value. Fisherian equation considers money as the medium of exchange and neglects its equally important function as the store of value. Money is demanded only for transaction and not for its own sake. This view has been criticised by Cambridge economists including Keynes. They point out that money is an asset, and as such, it is demanded by the people who want to keep their assets in a liquid form, i.e. to recognise the importance of the demand for money as a store of value.
- MV=PT is an identity,not an equation.Hence the statement is a truism i.e. bound to be true,given the assumption.

Conclusion : From the criticism levelled against the theory, it is found that the quantity theory of money is imaginary, defective and incomplete as Keynes said. This theory does not provide for a precise and accurate measurement of the purchasing power of money. The theory also lacks mathematical

exactness which shows the direct and proportional relationship between the quantity of money and the price level. Again, it does not adequately explain the process which brings about changes in the price level consequent upon changes in the supply of money. As such the theory is not very helpful; it has, at best, a limited place in monetary economics. It is not looked upon as a reliable and useful tool of analysis and policy.

Nevertheless, the theory has its value as a simple expository device. Although the theory lacks mathematical sophistication, yet as an expression of a tendency, it provides us with information about the causes of the changes in the prices of goods and services in the economy. As is well known, most of the changes in the price-level are the result of the changes in the quantity of money. The quantity theory throws adequate light on the changes in the supply of money in the economy. The theory also proves useful in enabling us to establish control on the general price level. If the prices rise, then the remedy in terms of the quantity is to effect a reduction in the money supply to bring the price level down. On the contrary, if the general price level in the economy registers a decline, then the remedy according to the theory is to allow an increase in the money supply to give a push upward to the price-level. Thus, the theory proves helpful in stabilising the price-level in the economy. This theory forms the basis of the modern banking techniques of open market operation and bank rate policy.



CHECK YOUR PROGRESS

Q 1: Why is money demanded as per classical economists? (Answer in about 30 words)

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Q 2: Explain the cash transaction approach in determining price level in an economy. (Answer in about 40 words)

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Q 3: Mention any two assumptions of the Fisherian exchange equation. (Answer in about 30 words)

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Q 4: Mention any two major criticisms levelled against the quantity theory of money. (Answer in about 50 words)

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2.3.2 Cambridge Approach to Quantity Theory of Money

The transaction approach to the quantity theory of money enjoyed its popularity in the USA mostly due to the pioneering work of Irving Fisher in the period prior to the First World War. But in Great Britain a slightly different approach to the quantity theory was attempted by the Cambridge economists like Marshall, Pigou, Robertson and J. M. Keynes. This approach is known as cash balance approach based on the hoarding aspect of money.

The demand for money according to the Cambridge economists arises out of the preference for the hard cash by the people.

Determination of Price Level and the Value of Money (In Cash Balance Approach) : This theory is an improvement over the cash transaction version in the sense that it is based

on the national income approach and takes into account the concept of liquidity. According to the cash balance approach to the quantity theory, the value of money or price level depends upon the demand for money and also its supply as well. This approach considers the demand for and supply of money at a particular point of time rather than over a period of time as the transaction approach does. The supply of money is its stock at a particular point of time rather than a flow, it comprises all the cash and bank deposits subject to a withdrawal by cheques (i.e. liquidity). The supply of money set against the community's aggregate demand (or cash balances) determines the level of prices or the value of money in the economy. An increase in the demand for money means smaller demand for goods and services because the people can have larger cash balances only by cutting down their expenditure on goods and services. Consequently the price level will fall, but the value of money will rise. Converse will be the case with the fall in the demand for money. A fall in the demand for money means a larger demand for goods and services on the part of the people. Consequently, the price level will rise but the value of money will fall.

At any time, the public holds a certain amount of cash balance sufficient to purchase a given volume of goods and services. This will not be the whole of income but a part of it. Income is represented by the total goods and services produced and available at any time . But the whole of the income is not needed at any time to be consumed. Now, if the total national income in goods and services is represented by R (real income) and the portion that is required to be purchased at any time is represented by K, then KR will be the amount of real income to be kept in the form of money (M) and if the average of their prices is P then the equation will be KRP= M, or P = M/ KR.Here,KRP implies money income to be kept in the form of cash which constitutes the demand for money.

This equation is like the Fisher's equation, the only difference is that instead of taking the total volume of goods (T), herein only

that portion of goods entering into final consumption has been taken into account which is purchased at a particular moment.

Marshall's Equation:

Alfred Marshall gave his cash balance equation in the following form:

$$M=KPY$$

Where,

K=The proportion of real income people want to hold in the form of cash

M=Quantity of money(Currency and demand deposit)

P=Price level

Y=Aggregate real income

From the equation it can be seen that the value of money can be found out by dividing the total amount of goods which the people want to hold out of the total income by the amount of cash held by the public.Thus,

$$1/P=KY/M$$

Similarly, the price level can be found out by dividing the money supply by the amount of goods which the community wants to hold.Thus,

$$P=M/KY$$

Thus, for example, if M=Rs. 100,Y=2,000 units,K=1/2,then the value of money will be1/P=KY/M

$$=1000/100=10 \text{ units of goods/rupee}$$

Therefore, the price level will be P=M/KY=100/1000=1/10 per unit

Pigou's Equation:

Prof. Pigou developed the cash balance approach by putting forward a new equation as given below :

$$P = \frac{KR}{M}$$

In this equation P stands for purchasing power or the value of money. Hence, the numerator and the denominator have been reversed.

R indicates the aggregate real income expressed in terms of a particular commodity enjoyed by the community at any given point of time.

K represents that proportion of R (the aggregate real income) which is held by the public in the form of cash balances.

M represents the total money stock or total cash held by a community. Money is held by a community not merely in terms of cash but also in terms of bank deposits subject to the withdrawal of cheques. In order to include bank deposits in money, Pigou further modified the above equation as follows :

$$P = \frac{KR}{M}\{C + h\ (1\text{-}C)\}$$

In this equation, C is the proportion of money which the public keeps in the form of legal tender, h represents the proportion of cash reserves to deposits held by the banks, and (1-C) implies that proportion of total money which is held by the people in the form of bank deposits.

In the above equation P (the purchasing power of money or the value of money) varies directly with K or R and inversely with M. This implies that the price level varies inversely with K or R and directly with M.

In this equation K is more significant than M for explaining the changes in the purchasing power or the value of money. This means the value of money depends upon the demand of the people to hold money.

Robertson's Equation:

Robertson's cash balance equation can be given as follows:

$$M=KPT$$

Where,M=Money supply

P=Price level

T=Total amount of goods and services to be purchased during a year.

K=Proportion of T which people wish to hold in the form of cash.

The equation clearly shows that P changes directly with M and inversely with K and T. Robertson's equation can be easily comparable with the Fisher's equation.

Keynes' Equation:

According to Keynes, the demand for money arises only with reference to consumer goods.His equation can be stated as follows:

$$N=PK$$

Where,N=Cash balance held by the public

P=Price level of consumer goods

K=Proportion of consumer goods over which cash is kept

Assuming K to be constant, there is a direct and proportional relationship between N and P. P can be expressed as

$$P=N/K$$

In order to consider bank deposits,Keynes extended his equation as follows:

$$P=N/K+RK^{/}$$

Where,R=Cash reserve ratio of the banks

$K^{/}$ =The real balance held in the form of bank money

Assuming K,$K^{/}$ and R to be constant,we observe that there is a direct and proportionate relationship between N and P.

Critical Evaluation of the Theory: The Cambridge approach to the quantity theory of money has been subjected to the following criticisms :

- Like the Fisherian equation of exchange, the Cambridge equation M=KPY also establishes a direct and proportionate relationship between the price level and quantity of money, assuming the other things to remain constant.So it is nothing but a truism.
- Demand for money is subjected to uniform unitary elasticity in Cambridge approach.Apart from it the stock of money and the volume of goods and services are assumed to be constant, which makes this approach a static one.
- Although speculative motive causes violent changes in demand for money, still the Cambridge economists ignore the speculative demand for money which turned out to be an important determinant of holding money.
- Putting much more emphasis on the consumption goods, investment goods are completely ignored by Pigou and

Keynes in their equations,which makes the purchasing power of money very narrow .

- The rate of interest influences not only the demand for money but also the price level.But this phenomena is completely ignored by the Cambridge Economists .
- By assuming the neutrality of money and a dichotomy between the money market and the goods market, the Cambridge economists ignored the real balance effect .
- By putting much more emphasis on real income as the sole determinant of K, they overlooked the importance of other factors such as price level, banking and business habits of the people , which may influence the value of K.
- According to this approach the value of money is determined by K. But critics point out that K not only influences the value of money but also is influenced by it.

Conclusion :Although the Cambridge version of quantity theory of money is criticised on several grounds, still it is superior to the Fisherian version on many grounds.The Cambridge version is much more realistic as it put emphasis on human motive in terms of K.Here both demand for money and supply of money get due importance.In determining the price level, both level of income and changes in it are taken into account.The Cambridge version of quantity theory of money establishes that if K changes, then without changing the supply of money, price level may change.The Cambridge version is successful in explaining the phenomena of trade cycle because of the presence of K variable. All the variables used in the Cambridge version are defined in a realistic and convenient manner. Apart from this it provided the foundation for the development of the liquidity preference theory of Keynes.

2.3.3 Comparision between Fisherian Approach and Cambridge Approach

In order to compare the two approaches of quantity theory of money, let us consider the similarities and dissimilarities of both the approaches.

Similarities:

- Since V and K are reciprocal to each other, as V shows the rate of spending and K shows the extent of holding, therefore the Fisherian equation P=MV/T is similar to Robertson's equation P=M/KT .
- The conclusion of both the approaches is more or less same as both established that the money supply and value of money are inversely related.
- MV of Fisher's equation, M of Robertson's & Pigou's equation and N of Keynes' equation- all refer to the total supply of money.

Dissimilarities:

- Fisher lays emphasis on the supply of money whereas the Cambridge approach stresses on the demand for money to hold in the form of cash.
- The Fisherian approach is based on the medium of exchange function of money while the Cambridge approach is based on the hoarding aspects of money.
- Although both the approaches emphasise on the same phenomena 'money', the former describes money from the flow point of view while the later describes it from the stock point of view.
- Fisher lays emphasis on the transaction velocity of circulation while the Cambridge economists put importance on the income velocity of circulation of money.
- P is different in both the approaches.In the Fisherian approach it is the average price level whereas in the Cambridge approach it is the price of consumer goods.
- The Fisherian approach is closely associated with the institutional and technical factors related to the money spending process of individual. But the Cambridge economists are more concerned about the economic factors in determining the wealth people want to hold in the form of cash.



CHECK YOUR PROGRESS

Q 5: What is the transaction demand for money as stated in the Cambridge version? (Answer in about 40 words)

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Q 6: Explain some differences between cash transaction and cash balance approaches of demand for money ? (Answer in about 50 words)

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2.4 LET US SUM UP

- There are two views regarding the demand for money based upon the two functions of money, viz.,
  - money as a medium of exchange,
  - money as a store of value.
- The value of money or the price level of an economy is based on the medium of exchange function of money according to the American school .
- Fisher's equation MV=PT, where price level is directly related to money supply and inversely to the value of money . This version is known as cash transaction version of the quantity theory of money.
- The cash balance approach of the Cambridge school has a different view from the American school.
- According to the Cambridge economists, demand for money arises out of the liquidity preference of the people. The emphasis of this school was on the store of value function of money.

- Although there are many similarities between cash balance approach of the Cambridge school and cash transaction approach of Fisher, still the former is a superior version than the later.



2.5 FURTHER READING

- Gupta, S. B. (2003). Monetary Economics – Institutions, Theory and Policy. New Delhi: S. Chand and Company Ltd.
- Mithani, D. M. (2002). *A Course in Macroeconomics.* Mumbai: Himalaya Publishing House.
- Paul, R. R. (2008). *Monetary Economics.* Ludhiana: Kalyani Publisher
- Sheth, M. L. (2002). *Monetary Economics*. Agra: Lakshmi Narayan Agarwal.



2.6 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q 1: According to the classical economists, money is demanded to buy goods and services that satisfy people's wants. This means that the demand for money arises on account of exchnage transactions of goods and services in the economy.

Ans to Q 2: According to the cash transaction approach of the quantity theory of money, demand for money is equal to the total value of all good and servcies transacted in any given period of time. Thus, this theory implies that the quantity of money determines the price level in an economy.

Ans to Q 3: Two important assumptions of the Fisherian exchange equation are: 1) The price level is a passive element. 2) The volume of trade is an independent element and remains constant in the short period.

Ans to Q 4: Two major criticisms levelled against the theory of quantity theory of money are: a) the assumption of full employment in the economy is unrealistic, b) it does not explain the process of the determination of price level and it discusses only the supply side, assuming the demand side as constant.

Ans to Q 5: According to the Cambridge economists, the transaction demand for money arises out of liquidity preference of the people. People desire to have cash or liquid money with themselves to buy goods and services for fulfilling the daily requirements. This is known as transaction motive for money.

Ans to Q 6: The difference between the cash transaction and cash balance approaches of demand for money are :

1. Cash transaction approach stresses the supply of money while the cash balance approach puts emphasis on the demand for money to hold in the form of cash.
2. Fisher regards money as just a medium of exchange, while the Cambridge approach stresses the store of value aspects of money.
3. In Fisherian equation money is regarded as a flow,while in Cambridge money is regarded as a stock concept.



2.7 MODEL QUESTIONS

Short Questions (Answer each question in about 150 words)

Q 1: Mention the important assumptions on which Fisher's equation of exchange rests.

Q 2: What do you mean by demand for money in the classical approach ?

Q 3: Identify some similarities between the transaction and cash balance approaches to the quantity theory of money.

Q 4: Discuss the important criticisms of Fisher's quantity theory of money.

Essay-type Questions (Answer each question in about 300-500 words)

Q 1: Explain Fisher's equation in the determination of price-level and the value of money.

Q 2: State the difference between the American version and the Cambridge version of the quantity theory of money.

Q 3: Critically explain the cash balance approach of quantity theory of money.

Q 4: Explain the superiority of the cash balance approach over the cash transaction approach of quantity theory of money.

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UNIT 3: DEMAND FOR MONEY: KEYNESIAN APPROACH

UNIT STRUCTURE

3.1 Learning Objectives

3.2 Introduction

3.3 Transaction Demand for Money

3.4 Precautionary Demand for Money

3.5 Speculative Demand for Money

3.6 Total Demand for Money

3.7 Let us Sum Up

3.8 Further Reading

3.9 Answers to check your progress

3.10 Model Questions

3.1 LEARNING OBJECTIVES

After reading this unit, you will be able to

- learn the meaning of Keynesian demand for money or liquidity preference
- distinguish between the various motives of demand for money in the Keynesian approach
- outline the determinants or factors influencing the different types of demand for money.
- understand the concept of liquidity trap.

3.2 INTRODUCTION

The Keynesian Theory of Demand for Money was formulated by Keynes in his book '*The General Theory of Employment, Interest and Money'*(1936).According to Keynes, demand for money arises because money has liquidity and he termed it as 'liquidity preference' which means the desire of people to hold their money as cash.

Now the question is why money is demanded when it does not earn any income to the people who hold it and at the same time there are other non-money assets available in the economy that can yield some income in the form of interest to its holders. In classical theory, demand for money arises only because money serves as a medium of exchange. But in Keynesian theory, along with medium of exchange, money is also demanded as a store of value. Money is demanded not only for what it does, but also for what it is. It is the only perfect liquid asset. Liquidity refers to the pace and ease at which it can be converted into something else. Thus unlike the classical economists, Keynesian theory of demand for money gives prominence to the asset demand for money. Thus, in this unit, you will learn how the Keynesian approach of demand for money is different from the Classical approach of demand for money.

Keynes talks about three motives of demand for money or liquidity preference- (i) transaction motive (ii) precautionary motive and (iii) speculative motive. Keynes also used the term total cash balance to indicate total demand for money. He talked about two types of cash balances- active cash balances and idle cash balances. Active cash balances consist of demand for money for transaction and precautionary motives and idle cash balances imply money held for speculative motive. In this unit, we shall present an overview of transaction, precautionary and speculative motive of demand for money. Thus, after going through this unit you will acquire a fair knowledge about the Keynesian approach of demand for money.

3.3 TRANSACTION DEMAND FOR MONEY

According to Keynes, the transaction demand for money relates to “the need of cash for the current transactions of personal and business exchange” .The transaction demand for money arises from the medium of exchange function of money. Money serves as a medium of exchange and that is why people hold a portion of their income as cash or liquidity in order to make current transactions. There is a lack of perfect synchronisation between receipts of money or income of individuals and payments of money or expenditure made by people. Generally people receive income at some intervals but they have to make expenditures on daily basis. Therefore people hold a part of

their income in hard cash to make day to day expenditures on goods and services. Transaction demand for money therefore bridges the gap between periodic receipts of income and continuous expenditures of individuals and businessmen.

Transaction motive of demand for money is again subdivided into *income motive* and *business motive* by Keynes. The *income motive* is meant to fill the gap between receipt of income and daily expenditures of households. The demand for money for income motive depends on

- **The Level of Income:** The amount of money demanded for income motive varies directly with the level of income. Day to day transaction requirement of a rich man is generally higher than a poor and therefore people with higher income hold more money or cash to spend in consumption oriented daily expenditure than comparatively lower income groups.
- **The Price Level:** Rising price level decreases the purchasing power of money. With rising prices or during inflation, transaction demand for money tends to rise and during periods of falling prices or deflationary period, demand for money for transaction motive tends to fall.
- **Time Gap between Receipt and Expenditure of Income:** Income is generally earned periodically but expenditure requirement arises on a continuous basis. So this requires households to hold money in the form of cash to fill up the gap between receipt of income and the corresponding expenditure. If the gap between receipt and expenditure of income is high, transaction demand for money will be high and vice versa.
- **Frequency of Receipts:** There is an inverse relationship between frequency of income receipts and the level of transaction demand for money. Transaction demand for money tends to rise as the frequency of receipts falls and vice versa.
- **Frequency of Expenditures:** Frequency of expenditures also influence transaction demand for money and the later varies inversely with expenditure frequency.If frequency of expenditure increases demand for money for transaction motive decreases and vice versa.
- **Availability of Credit:** If credit facilities are cheap and easily available then lesser cash will be held for transaction motive. People

will feel lesser need of cash when large transactions can be made with convenient credit facilities.

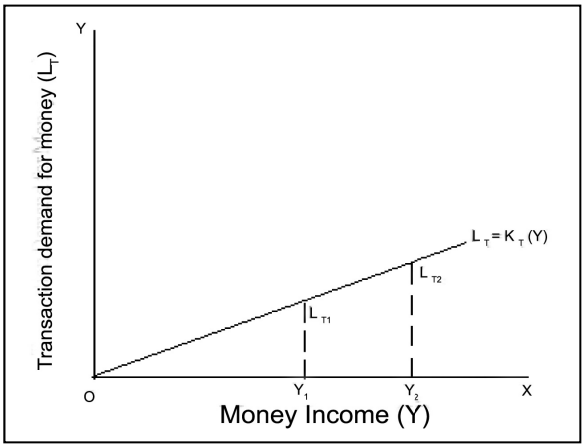
The *business motive* is about current transaction motive of businessmen and entrepreneurs. Businessmen and entrepreneurs need to keep a part of their resources as liquid to meet daily needs of business like payment for raw materials, wages and salaries of labourers and employees and other current expenditures. Money held for this motive depends primarily on business turnovers.

Assuming basic institutional and technical practices determining the income and expenditure flows to be constant, demand for money for transaction purpose can be said to be dependent on the level of income and it is directly proportional to the income level. Higher the level of money income, higher is the transaction demand for money and vice versa. Symbolically

$$L_T=K_T(Y)$$

Where L_T means demand for money for transaction motive, Y represents money income and K_T is the proportion of money income held for transaction purpose. Keynes also mentioned transaction demand for money to be interest inelastic i.e. rate of interest has no influence on L_T and it only depends on the level of income. However in post Keynesian period, economists William J. Baumol and James Tobin have shown that transaction demand for money is sensitive to many other economic variables including rate of interest.

Fig 3.1: Transaction demand for money as an increasing function of income level



In fig 3.1, money income is measured along the X axis and demand for money for transaction purpose is measured along the Y axis.The L_T curve depicts the transaction money demand which shows that it rises along with the rise in level of income. At income level Y_1, transaction demand for money is L_{T1} and as income rises to Y_2, the later rises to $L_{T2.}$ Thus transaction demand for money curve slopes upward and it is an increasing function of the level of income.



CHECK YOUR PROGRESS

Q1: What is liquidity preference?(Answer in about 30 words)

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Q2: What is transaction demand for money? (Answer in about 40 words)

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Q3: Briefly explain income and business motives of transaction demand for money (Answer in about 50 words)

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Q4: What are the determinants of transaction demand for money? (Answer in about 30 words)

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3.4 PRECAUTIONARY DEMAND FOR MONEY

Along with day to day expenditures people need additional amount of cash or liquidity to fulfil their needs at times of emergencies and sudden contingencies. The precautionary demand for money depends on the expectations regarding future income receipts and expenditures. Uncertainty about future income and unforeseen contingencies is the main reason behind precautionary demand for money.For businessmen, precautionary demand for money arises for uncertainties about future business expectations like profit, loss and economic uncertainties like inflation, depression etc. Households also need to keep cash for emergencies like unemployment, accidents, sickness etc. According to W.W. Haines, factors like size of assets, insurance availability, future income expectations, credit availability, efficiency and safety of financial institutions in making interest earning, assets available etc. influence the precautionary demand for money. But Keynes maintained that like the transaction demand for money, the precautionary demand for money is also a constant and direct function of the level of income. Higher the level of income, higher is the demand for money for precautionary motive. This is basically due to two reasons:

- Just as transaction money demand increases with the rise in income, people's demand for security and convenience also rises as their income grows and for this a larger amount of cash is held for unforeseen situations.

- Increase in income of business houses enhances their business operations and financial commitments and this creates more demand for money for precautionary purpose.

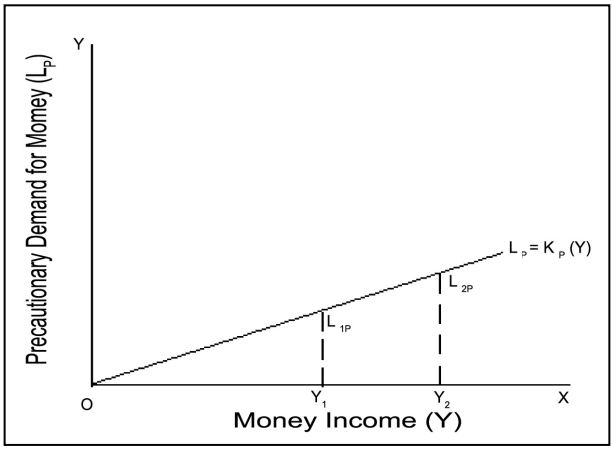
Symbolically,

$$L_P=K_P(Y)$$

Where $L_P$means demand for money for precautionary motive, Y represents money income and $K_P$is the proportion of money income held for Precautionary purpose.

Thus similar to transaction demand function, the demand for money function for precautionary motive is also a rising function of income level and slopes upward from left to right as shown in fig 3. 2.

Fig 3. 2: Precautionary demand for money as an increasing function of income



Both transaction demand and precautionary demand for money are rising functions of level of income and are interest inelastic. These two together constitute **demand for active cash balances**(L_1). Symbolically,

$$L_1 = L_T + L_P$$
$$= K_T(Y) + K_P(Y)$$
$$= K(Y)$$

Thus demand for active balances is a function of income and there exists a positive relationship between the two.



CHECK YOUR PROGRESS

Q5: What is precautionary demand for money? (Answer in about 30 words)

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Q6: What do you mean by demand for active cash balance? (Answer in about 40 words)

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Q7: Explain the relationship between demand for active balances and income level. (Answer in about 40 words)

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3.5 SPECULATIVE DEMAND FOR MONEY

The speculative demand for money talks about the store of value or asset function of money. Classical economists while talking about demand for money did not discuss about the store of value function of money and that is why speculative demand for money is a unique and revolutionary contribution made by J.M. Keynes. According to classical economists, people hold money only for transaction and precautionary motives i.e. only active balances are held by people. Keynes put forward that people hold money above active balances in speculation about future uncertainties; i.e. hoarding is present and people keep idle balances along with active balances.

Speculative demand for money implies holding certain amount of cash in hand in speculation about future gains due to future changes in the rate of interest. Keynes assumes that there are two types of assets in the economy- money and bonds (which include all types of securities and assets except money).

Relationship between Bond Prices and Market Rate of Interest: A bond is a contractual debt obligation issued by government or a business corporation where the holders get promise to get periodic rate of interest and principal value at the time of maturity. There is an inverse relationship between bond prices and market rate of interest. The relationship between bond price or value of bond and market rate of interest can be illustrated with reference to a coupon bond that provide regular interest payments in addition to paying the face value of the bond at maturity. The face value specifies the amount that will be paid when the bond matures. In particular, a coupon bond specifies a coupon rate of interest. This coupon rate determines the percentage of the face value of the bond that will be paid each year as interest. For a coupon bond that matures in one year, it's price can be obtained by using the following formula.

$$P_{CB} = \frac{FV + PMT}{1 + i}$$

Where,

P_{CB}: Price of the coupon bond

FV: The value of the bond

PMT: Coupon payment

And 'i': Market rate of interest.

Let us suppose, FV: Rs. 2000,

Coupon rate: 10%

And 'i': 10%

Thus, PMT= Rs.2000 x 10% =Rs.200

Hence, $P_{CB} = \frac{2000 + 200}{1 + 10\%} = 2000$

Now if the current rate of interest becomes 8%, then the bond price will be

P_{CB} =2200/ (1+0.08) = 2037.03

Thus a fall in the rate of interest appreciates the current market value of the bond. If on the other hand, current market rate of interest increases to 12%, the current value of the bond comes down as shown below

P_{CB} =2200 / (1+0.12)=1964.28

The illustration shows that when current rate of interest comes down to 8%, the price of the bond goes up to Rs. 2037 and when current rate of interest increases to 12 %, bond price depreciates to Rs. 1964.

In general, the formula for value of the bond at the end of n year is given by

$$PCB = \frac{PMT}{1 + i} + \frac{PMT}{(1 + i)^2} + \frac{PMT}{(1 + i)^2} + \ldots \ldots \ldots \ldots + \frac{PMT + FV}{(1 + i)^n}$$

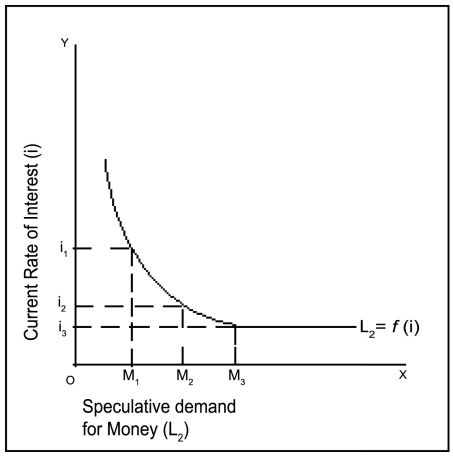
***Rate of interest and expectations about the future*:** When people decide about whether to keep their wealth in cash or in bond form they make expectation about the future gains or losses. If rate of interest is anticipated to rise in the future which implies bond prices are expected to fall,people will hold cash to invest it in future when prices of bonds and securities fall.On the other hand when future rate of interest is expected to depreciate and bond prices to rise, people prefer to invest in bonds by holding lesser cash and sell the bonds at higher prices in future to make profit. Thus if anticipation about future rate of interest is high, money held for speculative motive is high and vice versa. Now this anticipation about future rate of interest and the decision of people whether to hold bond or cash depends on the current market rate of interest. If the current rate of interest is higher than the conventionally regarded normal interest rate, then it is expected that in future it will fall. Thus a higher current rate of interest will indicate that speculative demand for money will be low and people will prefer bonds to holding cash. On the other hand, if current rate of interest is low, people will expect it to rise in future and as such demand more cash for speculative motive.

Thus demand for money for speculative motive is an inverse function of the current market rate of interest. If current rate of interest is high, demand for money for speculative purpose is low and vice versa. Symbolically,

$$L_2=f(i)$$

The inverse relationship between speculative demand for money and current market rate of interest is shown in figure 3.3

Fig. 3.3: Speculative demand for money as a decreasing function of rate of interest and liquidity trap



In the Fig 3.3 along the X axis we measure demand for money for speculative motive and current market rate of interest is measured along the Y axis. The Demand for money curve for speculative motive or the liquidity preference curve (L_2) slopes downward from left to right depicting the inverse relationship between speculative demand for money and current rate of interest. At higher rate of interest such as i_1, speculative demand for money is at a lower level M_1. When rate of interest falls to i_2, money held under speculative motive increases to M_2 and further it rises to M_3 when rate of interest falls to an even lower level i_3.

Liquidity Trap: Fig 3.3 shows that at very low rate of interest level i_3, the speculative demand for money curve becomes perfectly elastic. This implies that when rate of interest falls to a certain lower level, people have no interest to lend money or purchase bonds and they want to keep the whole money in the form of cash. This portion of the liquidity preference curve indicates an 'absolute liquidity preference' by the people and termed as 'liquidity trap'. Here everyone is convinced to think that current market rate of interest is very low and it is definitely going to rise in the future.Holding bonds becomes too risky at this time and people speculating a future rise in the rate of interest wants to hold unlimited amount of cash. The rate of interest cannot fall further after reaching this critical low position and becomes sticky. Liquidity trap arises because of the following reasons:

- People invest in bonds in expectation of income in the form of interest earnings. Moreover the process of converting cash to bond involves certain cost. If the rate of interest is too low such that it cannot cover the cost and inconvenience of holding bonds, then people will have no incentive to hold bonds.

- Liquidity trap creates a floor level for rate of interest and it cannot fall further. In such a situation there is every possibility that it will rise in the future and prices of bonds will fall. This makes people to hold only cash and no bond is purchased.

- When people hold money rather than bonds, they have to forgo income in the form of rate of interest. So rate of interest is the cost of holding money in the form of cash. At very low rate of interest, this cost becomes very negligible which induce people to hold more and more cash.

The policy implication of the situation of liquidity trap is that monetary policy becomes ineffective in the region of liquidity trap. Expansionary monetary policy cannot further lower the rate of interest to boost investment and recover the economy from depression when the liquidity trap comes into existence. This is the reason why Keynes raised doubt about the effectiveness of monetary policy to tide over economic depression and favoured fiscal policy which can raise the aggregate demand through tax cuts and increased government expenditure.

3.6 TOTAL DEMAND FOR MONEY

Total demand for money consists of demand for active cash balances which includes transaction and speculative demand for money and demand for idle cash balances or speculative demand for money. Demand for active cash balance is a stable function of the level of income and is interest inelastic unless the rate of interest is too high. Demand for idle cash balances is a function of the current market rate of interest. Thus the total demand for money in the economy is a function of income level and rate of interest.

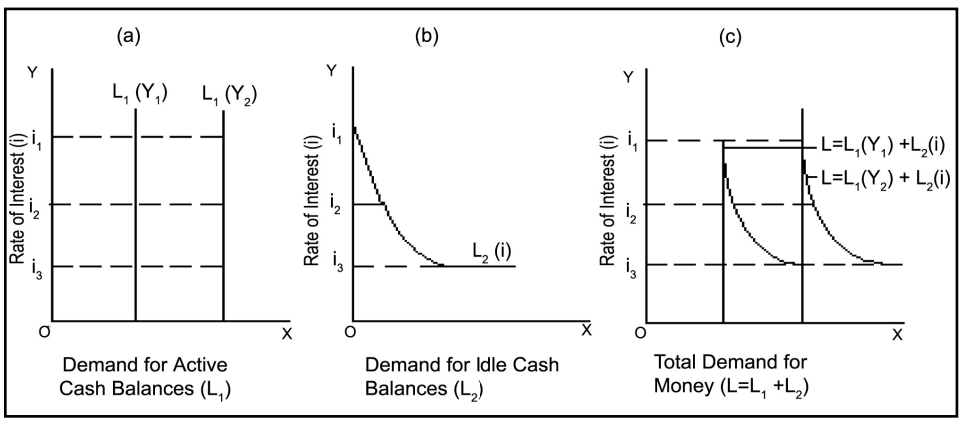
$$L=L_1+L_2$$

$$= K(Y)+ f (i)$$

$$=F(Y, i)$$

Fig 3.4, shows diagrammatically that the total demand for money is the lateral summation of demand for active balances and demand for idle balances.

Fig 3.4: Total Demand for money



In part (a) of fig 3.4, demand for active balances(L_1) has been shown as a function of rate of interest at different level of income. As we know that demand for active balances is interst inelastic, so the L_1 curves are vertical straight lines. At Y_1 level of income, demand for active balances is represented by $L_1(Y_1)$ curve. When income rises to Y_2, the demand curve for active balances shifts to $L_1(Y_2)$. Part (b) of the figure shows the speculative money demand or demand for idle cash balnce curve(L_2). The curve slopes downward showing an inverse relationship between speculative demand for money and current market rate of interest. In part (c), the total demand for money curve(L) is shown which is derived by summation of L_1 and L_2 curves.The shape of the total demand for money curve is determined by the speculative demand for money (L_2) curve. Its position is determined by the level of income. When income increases from Y_1 to Y_2, the total demand for money curve shifts to the right.



CHECK YOUR PROGRESS

Q8: Define speculative demand for money. (Answer in about 30 wors)

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Q9: What is liquidity trap? (Answer in about 40 words)

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Q10: What is the relationship between rate of interest and bond prices? (Answer in about 40 words)

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3.7 LET US SUM UP

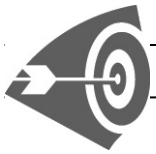
- The Keynesian theory of demand for money was formulated by Keynes in his book '*The General Theory of Employment, Interest and Money'* (1936).According to Keynes, demand for money arises because money has liquidity. He termed it as 'liquidity preference' which means the desire of people to hold their money as cash or liquidity.
- Unlike the classical economists, Keynesian theory of demand for money gives prominence to the asset demand for money. Keynes talks about three motives of demand for money or liquidity preference- (i) transaction motive (ii) precautionary motive and (iii) speculative motive.
- The transaction demand for money arises from the medium of exchange function of money. Money serves as a medium of exchange and that is why people hold a portion of their income as cash or liquidity in order to make current transactions.
- Transaction motive of demand for money is again subdivided into *income motive* and *business motive* by Keynes. The *income motive* is meant to fill the gap between receipt of income and daily expenditures of households.*Business motive* is about current transaction motives of businessmen and it depends on business turnovers.
- Demand for money for transaction purpose is dependent on the level of income and it is directly proportional to the income level.
- Precautionary demand for money arises due to demand for holding cash in order to meet the requirement of unforeseen future contingencies. This demand for money is also an increasing function of the level of income.
- The speculative demand for money talks about the store of value or asset function of money. Speculative demand for money implies holding certain amount of cash in hand in speculation about future gains due to future changes in the rate of interest.
- Demand for money for speculative motive is an inverse function of the current market rate of interest. If current rate of interest is high, demand for money for speculative purpose is low and vice versa.

- At very low rate of interest level, the speculative demand for money curve becomes perfectly elastic and people want to keep whole of their wealth as cash. This is known as liquidity trap.
- Total demand for money in an economy depends on the level of income and rate of interest.



3.8 FURTHER READING

- Ahuja, H.L (2003). *Macroeconomics- Theory and Policy*. New Delhi: S.Chand & Company Ltd.
- Paul,R.R.(2008). *Monetary Economics*. Ludhiana: Kalyani Publisher
- Rana, K.C and Verma, K.N. (1976). *Macroeconomics Analysis*. Jalandhar: Vishal Publishing Co.



3.9 ANSWERS TO CHECK YOUR PROGRESS

Ans. to Q No 1: According to Keynes, demand for money arises because money has liquidity and he termed it as 'liquidity preference' which means the desire of people to hold their money as cash or liquidity.

Ans. to Q No 2: Transaction demand for money implies demand for holding cash in order to make current expenditures on goods and services by households and businessmen.

Ans. to Q No 3: The *income motive* of transaction demand for money is meant to fill the gap between receipt of income and daily expenditures of households. Basically it arises because there is a time gap between receipt of income and the corresponding expenditures and therefore people hold a certain amount of cash to meet expenditure requirements during this gap. The *business motive* is about current transaction motive of businessmen and entrepreneurs and it primarily depends on business turnovers.

Ans. to Q No 4: Transaction demand for money depends on various factors like income, price level, the time gap between

receipt of income and expenditure, frequency of income and expenditure, business turnovers etc. However if we assume all these factors which affect income and expenditure flows to be constant, then transaction demand for money can be said to be an increasing function of income level.

Ans. to Q No 5: Precautionary demand for money implies demand for holding certain amount of cash by people to meet their requirements at times of unforeseen future contingencies like unemployment, sickness, accidents etc.

Ans. to Q No 6: Demand for active cash balances implies demand for money for transaction and precautionary motives. Demand for active cash balances depends on income level and it is interest inelastic.

Ans. to Q No 7: Demand for active cash balances consists of demand for money for transaction and precautionary motives. Demand for active balances is a rising function of the level of income. When income level goes up people's demand for active cash balances rises and vice versa.

Ans. to Q No 8: Speculative demand for money implies holding certain amount of cash in hand in speculation about future gains due to future changes in the rate of interest. The speculative demand for money talks about the store of value or asset function of money.

Ans. to Q No 9: At very low rate of interest level, the speculative demand for money curve becomes perfectly elastic. This implies that when rate of interest falls to a certain lower level, people have no interest to lend money or purchase bonds and they want to keep the whole money in the form of cash. This portion of the liquidity preference curve indicates an 'absolute liquidity preference' by the people and termed as 'liquidity trap'

Ans. to Q No 10: There is an inverse relationship between bond prices and market rate of interest. If rate of interest is high bond

price will be low and a lower rate of interest implies hike in prices of bonds and securities.



3.10 MODEL QUESTIONS

Short questions (Answer each question in about 150 words)

Q1: How does Keynesian theory of demand for money differ from Classical theory of demand for money?

Q2: Briefly explain the difference between demand for active balances and demand for passive balances.

Q3: State the concept of liquidity trap.

Q4: What are the policy implications of liquidity trap?

Essay-type questions (Answer each question in about 300-500 words)

Q1: Explain the three motives of demand for money put forward by Keynes.

Q2: State and explain the factors on which demand for money depends.

Q3: Derive the Keynesian total demand for money function.

Q4: Show diagrammatically that the total demand for money is the lateral summation of demand for active balances and demand for idle balances.

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UNIT 4: RESTATEMENT OF THE QUANTITY THEORY OF MONEY

UNIT STRUCTURE

4.1 Learning Objectives

4.2 Introduction

4.3 Restatement of the Quantity Theory of Money

4.3.1 Keynes' Reformulation of the Quantity Theory of Money

4.3.2 Friedman's Reformulation of the Quantity Theory of Money

4.3.3 Friedman versus Keynes

4.4 Let Us Sum Up

4.5 Further Reading

4.6 Answer to Check your Progress

4.7 Model Questions

4.1 LEARNING OBJECTIVES

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

- know the shortages and deficits of the traditional quantity theory of money
- explain the modification of quantity theory of money that has been made by J.M. Keynes and Milton Friedman
- make a comparison of quantity theory of money with similar line of thinking.

4.2 INTRODUCTION

The traditional quantity theory of money has been formulated by two schools of thought: *one,* the classical economist Fisher's cash transaction approach and *two*, the Cambridge cash balance approach which represents the neo classical view. The first school was pioneered by the Irving Fisher and the second school was supported by the Cambridge economists like Marshall, Pigou, Robertson etc. The Fisher's

quantity theory of money states that when the money in circulation increases, the price level also increases in direct proportion and the value of money decreases and vice versa. Thus, Cash transaction approach considers money only as medium of exchange. In this view, people hold money only for transaction purposes. People do not hold any idle cash balances in excess of their transaction demand because it is wasteful as it involves loss of interest. Thus the classical economist somehow ignored the store of value function of money. The Cambridge economists recognize the asset function of money by considering the determination of value of money in terms of supply and demand. According to this theory, people hold idle cash balance because it performs medium of exchange and store of value. The Cambridge approach between these two, is considered to be superior to the extent that it uses liquidity preference theory of interest as its basis of analysis, discards the concept of velocity of circulation of money, explains subjective factors and trade cycles, related to short period and applicable under all circumstances. However, both the approaches despite using slightly different equations, finally end up the analysis with similar conclusion that there is a direct and proportional relationship between the quantity of money and price level and an inverse proportionate relationship between the quantity of money and the value of money.

But here is not the end of the formulation of the quantity theory of money. The modification in terms of reformulation and restatement of the same is on from here onwards. In this unit you will learn about the Keynes' and Friedman's Reformulation of the Quantity Theory of Money. Apart from it this unit enables you to compare the Keynes' and Friedman's Reformulation of the Quantity Theory of Money and helps you to understand which one is better and why.

4.3 RESTATEMENT OF THE QUANTITY THEORY OF MONEY

The contradiction regarding the formulation of the quantity theory of money is still a matter to be solved. The development of the theory of demand for money has taken two different paths. One

path of development is represented by Keynes. The second line of development is represented by Milton Friedman. The difference between the two lines of development is how money is treated in the formulation of the theory of demand for money. In the first line of development, pre and post Keynesian economists treated money as sterile form of wealth and demand for money is prompted by different kinds of motives like transaction, precaution, speculation and store of wealth. Friedman, whose quantity theory represents the second line of development, treats money as any other durable goods. Now, let us first start with Keynes in the following section.

4.3.1 Keynes' Reformulation of the Quantity Theory of Money

Keynes does not agree with the older quantity theorists that there is direct and proportionate relationship between quantity of money and price level. According to him, the effect of change in quantity of money on price is indirect and non proportional. Keynesian reformulated quantity theory is based on the following assumptions:

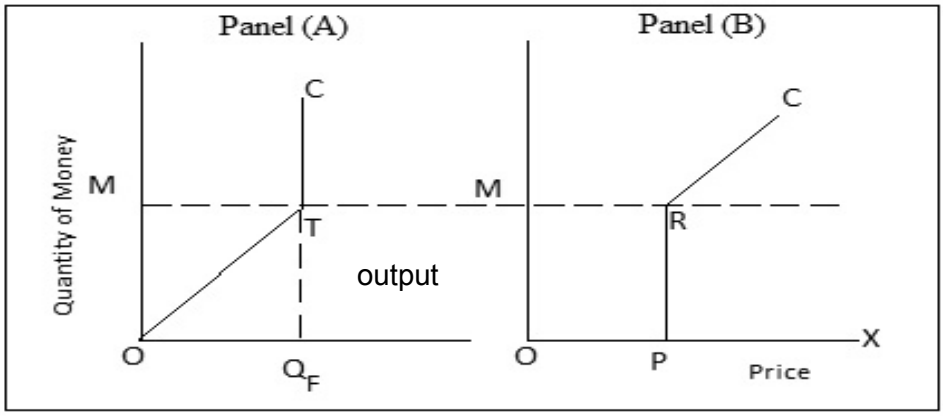
- All factor of production are in perfectly elastic supply so long as there is any unemployment.
- All unemployed factors are homogenous, perfectly divisible and inter changeable.
- There are constant returns to scale, so those prices do not rise or fall as output increases.
- Effective demand and quantity of money change in the same proportion so long as there are any unemployed resources.

Given these assumptions, the Keynesian chain of causation between change in quantity of money and price is an indirect one through the rate of interest. This means when the quantity of money is increased, its first impact is on the rate of interest which tends to fall. Given the marginal efficiency of capital, a fall in the rate of interest will increase the volume of

investment. The increased investment will raise effective demand through the multiplier effect there by increasing income, output and employment. Since the supply curve of factors of production is perfectly elastic, in a situation of unemployment, wage and non wage factors are available at constant rate remuneration. As a result of constant returns to scale, price do not rise with the increase in output so long as there is any unemployment.

Under these circumstances, output and employment will increase in the same proportion as effective demand and the effective demand will increase in the same proportion as the quantity of money. But "once full employment is reached, output ceases to respond at all to changes in the supply of money and so in effective demand." The elasticity of output in response to change in supply, which was infinite as long as there was unemployment, falls to zero. The entire effect change in the supply of money is exerted on prices which rise in exact proportion with the increase in effective demand. Thus, so long as there is unemployment, output will change in the same proportion as the quantity of money, and there will be no change in prices; and when there is full employment, prices will change in the same proportion as the quantity of money. Therefore the reformulated quantity theory of money stresses the point that with increase in quantity of money, price rise only when the level of full employment is reached, and not before that.

Figure 4.1: Relationship between price and quantity of money



The reformulated quantity theory of money is illustrated in figure 4.1 (A) and (B) where OTC and PRC are the price curves relating to the quantity of money. Panel (A) in the figure shows that as the quantity of money increases from O to M, the level of output also rises along the OT portion of the OTC curve. As the quantity of money reaches OM level, full employment output OQ_f is being produced. But after point T, output cannot rise as full employment is reached.

Panel (B) of the figure shows the relationship between quantity of money and price. So long as there is unemployment, prices remain constant whatever the increase in the quantity of money. Prices start rising only after the full employment level is reached. In the figure, the price level OP remains constant at the OM quantity of money corresponding to the full employment level of output OQ_f. But an increase in the quantity of money above OM raises price in the same proportion as the quantity of money. This is shown by RC portion of the price curve PRC.

Superiority of the Keynes' Reformulation of the Quantity Theory of Money over the Traditional Quantity Theory of Money:

The Keynesian theory of money is considered to be superior to the traditional quantity theory of money on the following grounds:

- Keynesian theory is superior to the traditional quantity theory in the ground that unlike the traditional quantity theory of money, Keynes establishes an indirect and non-proportional relationship between quantity of money and price.
- Another superiority of the Keynesian theory is that it considers monetary theory with value theory. Keynes integrates monetary theory, output and employment through the rate interest.
- The unrealistic assumption of full employment of the traditional quantity theory is being restated by Keynes as an exception.
- The traditional quantity theory believes that every rise in the quantity of money leads to inflation but Keynes establishes that

so long as there is unemployment, the rise in prices is gradual and there is no danger of inflation.

4.3.2 Friedman's Reformulation of the Quantity Theory of Money

Friedman in his easy, "The Quantity of Money- A Restatement" published in 1956, set down a particular model of quantity theory of money. In his restatement of the quantity theory, he asserts that "Money does matters". He also pointed out the fact that his quantity theory is basically a theory of demand for money. It is rather not a theory of output, income or price. Friedman's theory of demand for money is partly Keynesian and partly non-Keynesian. Friedman formulated his demand for money in the form of real money defined M/P where M is income in nominal terms and P is price index. For specifying the determinants for real money, Friedman makes a distinction between two kinds of ultimate wealth holders - individual households and business firms.

Demand for Money by Ultimate Wealth Holders: According to Friedman, for ultimate wealth holders, 'Money is one form in which they chose to hold their wealth'. So, demand for money for them may be expected to be the function of the following variables-

- **Total Wealth:** Total wealth includes both Physical and non human wealth. 'In practice, estimates of human wealth are seldom available.' Friedman considers 'permanent income' as the most useful measure of total wealth.
- **Proportion of Human Wealth in Total Wealth:** According to Friedman, human wealth such as personal earning capacity is a major asset but because of some institutional constraint the conversion of human into non-human wealth is limited. So, 'the fraction of total wealth that is in the form of non-human wealth is an additional important variable'.
- **The Expected Rate of Return on Money and Other Assets:** The expected rate of return on money is zero,

sometimes even negative as is in case of demand deposits. But the rate of return on other form of assets like bonds, equities, securities, is greater than zero. So, there is a relative cost of holding money. This relative rate of real return is a determinant of demand for money.

- **Other Variables:** The other variables include-(a) the services rendered by money as an asset, (b) the degree of economic stability expected to prevail in the future.

Wealth Holders Demand Function for Money: Friedman has symbolized these determinants into a demand function for money by an individual wealth holder as followings-

$$M/P=f\ (y, w, r_m, r_b, r_e, \Delta p/p; u)$$

Where, M= demand for nominal money, P= price index, M/P= demand for real money, y= real income, w=fraction of wealth in non-human form (i.e., fraction of income derived from property), r_m =expected rate return on money, r_b = expected rate of return on fixed value securities, including expected change in their prices, r_e = expected rate return on equities including expected change in their prices, $\Delta p/p$ = expected rate of change of prices of goods (i.e., the expected rate of return on real asset) , u= any variable other than income which may affect the utility attached to the services of money.

Friedman however has mentioned the problems in applying this demand function for the economy as a whole. Problems arise in aggregation due to i) change in the distribution of real income (y) in the fraction of non-human wealth (w) and ii) problem in defining y and w in estimating expected rate of return as constructed with actual rate of return, and quantifying the variables classified under u. Even if the problem of distribution of y and w are ignored, the above equation may be applied to the economy as whole but still the problem of quantifying the variables classified under u remains.

Demand for Money for Business Firms: Friedman mentioned that the demand for money by the business firms depends on the following modifications-

- Friedman includes 'Scale' of the enterprise as a substitute variable for 'Total wealth' and for him, there are several measure for scale-total transaction, net value added, net income, total non money capital and net worth.
- The division of wealth between human and non-human form has no special relevance to business enterprises.
- The rate of returns on money and alternative assets is much important as these rates determine the net cost of holding the money balances.
- The variables classified under u may be equally important for the business firms as the ultimate wealth holders.

Aggregate Demand for Money: According to Friedman the money demand function mentioned above in the equation can be regarded as symbolizing the business demand for money with w excluded, and also symbolizes the aggregate demand for money too.

Limitations of Friedman's Reformulation of the Quantity Theory of Money: The Limitations of Friedman's reformulation of the quantity theory of money are as follows-

- Friedman has been criticised for using broad definition of money including M_1 and M_2 which leads to the conclusion that interest elasticity of demand for money is negligible. In this situation his theory is weak to make a choice between short run and long run interest rates.
- As Friedman considers money is not a luxury good.
- Johnson criticises Friedman in unnecessarily separating wealth from income. For him, income is the return of wealth and wealth is the present value of income.
- Friedman neglects the affect of prices, output or interest rates on money supply but they do have significant impacts.
- Friedman does not tell anything about the timing and speed of adjustment or the length of time to which his theory is applicable.

Conclusion: Friedman's application to monetary theory of the basic principle of capital theory- that is the yield on

capital, and capital the present value of income-is probably the most important development in monetary theory since Keynes's general theory. The theoretical significance lies in the conceptual integration of wealth and income as influence on behaviour.

4.3.3 Friedman versus Keynes

The comparison between Friedman and Keynes can be seen from the following points-

- Friedman uses broader definition of money as compared to Keynes in explaining the demand for money. He treats money as an asset or capital goods which is held for the stream of income. On the other hand, the Keynesian definition of money consists of demand deposits and non-interest bearing debt of the government.
- According to Friedman the demand for money on the part of wealth holders is a function of money variables. In Keynesian theory, the demand for money as an asset is confined to just bonds where interest rates are the relevant cost of holding money.
- In Friedman's theory the monetary changes will directly affect prices and production of all types of goods and people will buy or sell any asset held by them. But according to Keynes, monetary changes affect economic activities indirectly through bond prices and interest rates.
- Keynes divides money balances into transaction, precautionary and speculative motives. But no such distinction has been made by Friedman.
- Friedman uses permanent and nominal income to explain his theory of money. Keynes, on the other hand, does not make any such distinctions.



CHECK YOUR PROGRESS

Q1: Write the name of some of the Cambridge economists. (Answer in about 10 words).

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Q. 2: Mention the assumptions of Keynes' reformulation of the quantity theory of money. (Answer in about 50 words).

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Q3: Briefly explain the Keynes' reformulation of the quantity theory of money. (Answer in about 100 words).

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Q4: Mention the variables used by Friedman to explain individual wealth holder demand function. (Answer in about 30 words)

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Q5: List out a few defects of the Friedman's reformulation of the quantity theory of money. (Answer in about 30 words)

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Q6: Make a brief comparison between the Friedman's and Keynes' reformulation of the quantity theory of money. (Answer in about 70 words).

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4.4 LET US SUM UP

- Quantity theory of money was first put forward by the classical economist Irving Fisher. According to this theory, if the money in circulation increases, the price level also increases in direct proportion and the value of money decreases and vice versa. This version included the medium of exchange function of money. But later on, the Cambridge economists made an extension including the store of value function of money in it with some slightly different equations which was considered a superior one to the earlier version.
- J.M. Keynes again made the further modification of the theory. According to him when the quantity of money is increased, its first impact is on the rate of interest which tends to fall. Given the marginal efficiency of capital, a fall in the rate of interest will increase the volume of investment. The increased investment will raise effective demand through the multiplier effect thereby

increasing income, output and employment. Since the supply curve of factors of production is perfectly elastic, in a situation of unemployment, wage and non wage factors are available at constant rate remuneration. There being constant returns to scale, price do not rise with the increase in output so long as there is any unemployment. Under these circumstances, output and employment will increase in the same proportion as effective demand and the effective demand will increase in the same proportion as the quantity of money. But "once full employment is reached, output ceases to respond at all to changes in the supply of money and so in effective demand." Thus, so long as there is unemployment, output will change in the same proportion as the quantity of money, and there will be no change in prices; and when there is full employment, prices will change in the same proportion as the quantity of money.

- Friedman in his easy, "The quantity of money-a restatement" published in 1956, set down a particular model of quantity theory of money. In his restatement of the quantity theory, he asserts that "Money does matters" Friedman formulated his demand for money in the form of real money defined by M/P where M is income in nominal terms and P is price index. For specifying the determinants for real money, Friedman makes a distinction between two kinds of ultimate wealth holders-individual households and business firms. For ultimate wealth holders Friedman included the following variables-
  - Total Wealth
  - Proportion of human wealth in Total Wealth
  - The expected rate of Return on Money and other assets.
  - Other variables like services rendered by money as an asset and degree of economic stability.

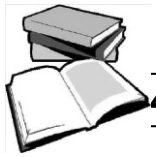
- Friedman has symbolized these determinants into a demand function for money. By an individual wealth holder as followings-

$$M/P=f\ (y;\ w,\ r_m,\ r_b,\ r_e,\ \Delta\ p/p;\ u)$$

Where, M= demand for nominal money, P= price index,

M/P= demand for real money, y= real income, w=fraction of wealth in non-human form (i.e., fraction of income derived from property), r_m =expected rate return on money, r_b = expected rate of return on fixed value securities, including expected change in their prices, r_e = expected rate of return on equities including expected change in their prices, $\Delta p/p$ = expected rate of change of prices of goods (i.e., the expected rate of return on real asset) , u= any variable other than income which may affect the utility attached to the services of money.

- In Friedman's version the monetary changes will directly affect prices but in Keynes' version monetary changes affect economic activities indirectly through bond prices and interest rates.



4.5 FURTHER READING

1. Ahuja, H.L., (2016). *Macroeconomics.* New Delhi: S. Chand & company.
2. Dwivedi, D.N., (2010). *Macroeconomics.*New Delhi: Tata McGraw Hill Pvt. Ltd.
3. Rana, K.C, Verma K.N., (2014). *Macroeconomic Analysis.* Jalandhar: Vishal Publishing Company.
4. Vaish, M.C, (2007). *Macroeconomic Theory.* New Delhi: Vikas Publishing House Pvt Ltd.



4.6 ANSWER TO CHECK YOUR PROGRESS

Answer to Q. No. 1: Friedman, Marshall, Pigou, Robertson etc.

Answer to Q. No.2: Keynes' reformulation of the quantity theory of money is based on the following assumptions-

- All factors of production are in perfectly elastic supply so long as there is any unemployment.
- All unemployed factors are homogenous, perfectly divisible and inter changeable.

- There are constant returns to scale, so those prices do not rise or fall as output increases.
- Effective demand and quantity of money change in the same proportion so long as there are any unemployed resources.

Answer to Q. No. 3: According to the Keynesian quantity theory of money when the quantity of money is increased, its first impact is on the rate of interest which tends to fall. Given the marginal efficiency of capital, a fall in the rate of interest will increase the volume of investment. The increased investment will raise effective demand through the multiplier effect thereby increasing income, output and employment. But "once full employment is reached, output ceases to respond at all to changes in the supply of money and so in effective demand." Thus, so long as there is unemployment, output will change in the same proportion as the quantity of money, and there will be no change in prices; and when there is full employment, prices will change in the same proportion as the quantity of money.

Answer to Q. No. 4: The variables used by Friedman to explain individual wealth holder demand function are:

- Total Wealth
- Proportion of human wealth in Total Wealth
- The expected rate of Return on Money and other assets
- Other variables like services rendered by money as an asset and degree of economic stability.

Answer to Q. No. 5: Defects of the Friedman's reformulation of the quantity theory of money are:

- As considered by Friedman money is not a luxury good.
- As considered by Friedman income is not separate from wealth.
- It neglects the affect of prices, output or interest rates on money supply

Answer to Q. No. 6: We can compare Friedman's and Keynes' reformulation of the quantity theory of money on the following grounds:

- In Friedman's theory the monetary changes will directly affect prices but according to Keynes, monetary changes affect economic activities indirectly through bond prices and interest rates.
- According to Friedman the demand for money on the part of wealth holders is a function of money variables. In Keynesian theory, the demand for money as an asset is confined to just bonds.
- Friedman treats money as capital goods which are held for the stream of income but the Keynesian definition of money consists of demand deposits and non-interest bearing debt of the government.



4.7 MODEL QUESTIONS

Short Questions (Answer each question in about 75 words)

Q1: State briefly the classical development to the quantity theory of money.

Q2: State briefly the neo-classical development to the quantity theory of money.

Q3: To what extent is Keynesian theory superior to the traditional quantity theory of money?

Q4: How does Keynes establish the relation between price and quantity theory of money?

Essay-type Questions (Answer each question in about 300-500 words)

Q1::State and explain the reformulation of Keynesian theory of money.

Q2: Explain Friedman's restatement of traditional quantity theory of money.

Q3: Give an account of detailed comparison between the Keynesian theory and Friedman's theory of money.

Q4: Explain the different paths associated with the restatement of quantity theory of money.

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UNIT 5: SUPPLY OF MONEY

UNIT STRUCTURE

5.1 Learning Objectives

5.2 Introduction

5.3 Definition of Supply of Money

5.4 Determinants of Money Supply

5.5 Concept of Money Multiplier

5.6 Concept of Credit Multiplier

5.7 Empirical Measurement of Money

5.7.1 The Narrow Definition of Money

5.7.2 The Broad Definition of Money

5. 8 Let Us Sum Up

5.9 Further Reading

5.10 Answers to Check Your Progress

5.11 Model Questions

5.1 LEARNING OBJECTIVES

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

- understand the meaning of the term supply of money
- know the determinants of supply of money
- explain the concept of credit multiplier
- illustrate the concept of money multiplier
- understand the empirical measurement of money.

5.2 INTRODUCTION

This unit is concerned with familiarizing you with supply of money, determinant of supply of money, the concept of credit multiplier and money multiplier.

In general, the term “supply of money” can be defined as the total stock of currency and other liquid instrument held by the public and circulating in an economy during a particular point of time. The term “public” refers to the individuals and the business firms in the

economy, excluding the central government, the central bank and the commercial banks. Money may be regarded as something, which is generally used as a means of payment and accepted for the settlement of debt.

There are various determinant of supply of money such as monetary base, money multiplier, reserve ratio, currency ratio, confidence in bank money, time deposit ratio, real income, interest rate, monetary policy and seasonal factors and public desire to hold currency etc.

The money multiplier is the amount of money that banks generate from each unit of the currency reserves. The value of the money multiplier depends on the desired currency deposit ratio and the excess deposit ratio.

The credit multiplier, also referred to as the credit expansion multiplier, is a function used to describe the amount of money a bank creates in additional to money supply through the process of lending the available capital it has in excess of the bank's reserve requirement.

5.3 DEFINITION OF SUPPLY OF MONEY

The supply of money is a stock at a particular point of time, though it conveys the idea of a flow over time. The term 'the supply of money' is synonymous with such terms as 'stock of money', 'money supply' and 'quantity of money'. The supply of money is a policy variable determined jointly by the monetary authority, banks and the public. However, in most of the time the monetary authority plays the dominant role in the determination of the supply of money. To study the mechanism of supply of money, it is essential to understand the distinction between two types of money- ordinary money and high powered money. All the empirical measures of money as given by the Reserve Bank of India popularly known as M_1, M_2, M_3 and M_4 can be termed as ordinary money.On the other hand high powered money is the money craeated by the Reserva Bank of India (RBI) and the Government of India held by the public and banks. The total amount of supply of money is determined by various factors, which are discussed in the next section of the chapter.

5.4 DETERMINANTS OF MONEY SUPPLY

There are basically two theories of determination of the money supply. According to the first view, the money supply is determined exogenously by the central bank. The second view holds that the money supply is determined endogenously by changes in the economic activity, which affects people's desire to hold currency relative to deposits and the rate of interest etc.

Broadly, the determinant of money supply can be classified into two catagories such as monetary base and the money multiplier. These two broad determinants of money supply are, in turn influenced by other factors. We will discuss all the determinant of supply on money as follows:

- **The Monetary Base:** The monetary base is considered as the most important determinant of supply of money. Money supply varies directly in relation to the changes in the monetary base. Monetary base refers to the supply of fund available for use either as cash or reserve of the central bank. Monetary base changes due to the policy of the government or is influenced by the value of money. The current practice is to explain the determinants of the money supply in terms of the monetary base or high-powered money. High-powered money is the sum of commercial bank reserves and currency (notes and coins) held by the public. High-powered money is the base for the expansion of bank deposits and creation of the money supply. Thus, the supply of money varies directly with changes in the monetary base, and inversely with the currency and reserve ratios.

- **Money Multiplier:** Money multiplier (m) has positive influence upon the supply of money. An increase in the size of m will increase the money supply and vice versa.A detailed discussion regarding money multiplier is carried out in subsequent section of the chapter.

- **The Level of Bank Reserves:** The level of bank reserves is another determinant of the money supply. Commercial bank reserves consist of reserves on deposits with the central bank and currency in their tills or vaults. It is the central bank of the country that influences the reserves of commercial banks in order to determine the supply of money. The central bank requires all commercial banks to hold reserves equal to a fixed percentage of both time and demand deposits. These are

the legal minimum or required reserves. Required reserves (RR) are determined by the required reserve ratio (RRr) and the level of deposits (D) of a commercial bank. For example, if the deposit amount is Rs100 lakhs and the required reserve ratio is 20 percent, then the required reserves will be 20% x Rs100 lakhs = Rs 20 lakhs. If the reserve ratio is reduced to 10 per cent, the required reserves will also be reduced to Rs 10 lakhs. Thus the higher the reserve ratio, the higher the required reserves to be kept by a bank, and vice versa. But it is the excess reserves (ER) which are important for the determination of the money supply. Excess reserves are the difference between total reserves (TR) and required reserves (RR): ER=TR–RR. If total reserves are Rs 100 lakhs and required reserves are Rs 20 lakhs, then the excess reserves are Rs 80 lakhs (100 – 20 lakhs).

When required reserves are reduced to Rs 10 lakhs, the excess reserves increase to Rs 90 lakhs. It is the excess reserves of a commercial bank which influence the size of its deposit liabilities. A commercial bank advances loans equal to its excess reserves which are an important component of the money supply. To determine the supply of money with a commercial bank, the central bank influences its reserves by adopting open market operations and discount rate policy. Open market operations refer to the purchase and sale of government securities and other types of assets like bills, securities, bonds, etc., both government and private, in the open market. When the central bank buys or sells securities in the open market, the level of bank reserves expands or contracts. The purchase of securities by the central bank is paid for with cheques to the holders of securities who, in turn, deposit them in commercial banks thereby increasing the level of bank reserves. The opposite is the case when the central bank sells securities to the public and banks who make payments to the central bank through cash and cheques thereby reducing the level of bank reserves.

It should be noted that commercial bank reserves are affected significantly only when open market operations and bank policy supplement each other. Otherwise, their effectiveness as determinants of bank reserves and consequently, of money supply is limited.

- **Statutory Liquidity Ratio:** Apart from this CRR, the commercial banks also need to keep liquid in the form of cash, gold and unencumbered

approved securities which are known as Statutory Liquidity Ratio (SLR). This SLR is by law an additional measure to determine money supply. The raising of the SLR has the effect of reducing the money supply with the commercial banks for the lending purposes and the lowering of the SLR tends to increase the money supply with banks for advances. At present (as of July, 2013), the SLR as fixed by RBI in India is 23%.

- **Open Market Operations:** To determine the supply of money with a commercial bank, the central bank influences its reserves by adopting open market operation. These refer to the purchase and sale of government securities and other types of assets like bills, securities, bonds etc, both government and private, in the open market. When the central bank buys and sells securities in the open market, the level of bank reserves expands or contracts. The purchase of securities by the central bank is paid for with the cheque to the holder of securities who in turn, deposit them in the commercial banks thereby increasing the level of bank reserves. The opposite is the case when the central bank sells securities to the public and banks who make payment to the central bank through cash and cheque thereby reducing the level of bank reserves.

- **Discount Rate Policy:** The discount rate policy affects the money supply by influencing the cost and supply of bank credit to commercial banks. This is known as bank rate in India. It is the interest rate at which commercial banks borrow from the central bank. A high interest means that commercial banks get less amount by selling securities to the central bank. In turn, the commercial banks raise their lending rates to the public thereby making advances dearer for them. Thus, there will be contraction of credit and the level of commercial bank reserves. The opposite is the case when the bank rate is lower. This means it tends to expand credit and consequently the bank reserves expand.

- **Public Desire to Hold Currency and Deposits:** People's desire to hold currency (or cash) relative to deposits in commercial banks also determines the money supply. If people are in the habit of keeping less in cash and more in deposits with the commercial banks, the money supply will be large. This is because banks can create more money with larger deposits. On the contrary, if people do not have banking

habits and prefers to keep their money holdings in cash, credit creation by banks will be less and the money supply will be at a low level.

- **Time-Deposit Ratio:** Time deposit ratio (t), which represents the ratio of the time deposit to the demand deposit is a behavioural parameter having negative effect on the money multiplier (m) and thus on the money supply. A rise in t reduces m and thereby the supply of money decreases.

- **Monetary Policy:** *Monetary policy is the single most important determinant of money supply by definition.* A change in the monetary policy has profound impact on behaviour of the banking institutions and people to hold money in the form of cash. *The monetary policy determines the money supply in an economy by deciding on the CRR, SLR, Repo Rate, Reverse Repo Rate, Open Market Operations, Selective Credit Control and so on.*



ACTIVITY 5.1

Do you think that the public desire to hold currency is an important determinant of money supply? Explain with the help of hypothetical example.

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CHECK YOUR PROGRESS

Q1: Money supply varies directly in relation to the changes in the monetary base. (True/False)

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Q2: Confidence in the Bank Money is an important determinant of supply of money. (True/False)

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5.5 CONCEPT OF MONEY MULTIPLIER

To explain the concept money multiplier, it is required to discuss the relation between money multiplier and high-powered money. The current practice to define money multiplier is in terms of high powered money. The high powered money is the sum of the commercial bank

reserves and currency held by the public. High powered money is the base for expansion of bank deposit and creation of the value of the money mutplier. This can be explained as follows:

The money supply consists of deposits of commercial bank (D) and Currency (C) held by the public. Thus the supply of money (Ms)

$M_s = D + C$ ----------(1)

On the otherhand, the high powered money (H) consists of currency held by the public (C) plus required reserve ratio (RR) and the excess reserve of the commercial bank.

$H_P = C + RR + ER$ ----------(2)

Now, the relation between M_s and H_P can be explained as a ratio of M_s to H_P.

$$\frac{M_s}{H_p} = \frac{\frac{D}{D} + \frac{C}{D}}{\frac{C}{D} + \frac{RR}{D} + \frac{ER}{D}} \quad \text{.....(3)}$$

or $$\frac{M_s}{H_p} = \frac{1 + \frac{C}{D}}{\frac{C}{D} + \frac{RR}{D} + \frac{ER}{D}} \quad \text{.....(4)}$$

By substituting Cr for $\frac{C}{D}$, RR_r for $\frac{RR}{D}$, ER_r for $\frac{ER}{D}$, equation 4 becomes

or $$\frac{M_s}{H_p} = \frac{1 + Cr}{Cr + RR_r + ER_r} \quad \text{.....(5)}$$

Thus high powerd money and money supply are equal to

or $$M_s = \frac{1 + Cr}{Cr + RR_r + ER_r} \times H_p \quad \text{.....(6)}$$

Now $\frac{1 + Cr}{Cr + RR_r + ER_r}$ can be termed as money multiplier (m) and equation 6 can be rewritten as $M_s = mH$..... (7)

equation 7 expresses the money supply as a function of money multiplier and high powered money.

It can be easily drawn from the above discussion that the size of the money multiplier is determined by the currency ratio (C_r) of the

public, the required reserve ratio (RR_r) and the excess reserve ratio (ERr) of the commercial bank. The lower the values of these ratios are, the higher are the values of the multiplier. The significance of money multiplier can be assessed from the fact that if m is fairly stable, the central bank can manipulate the supply of money by manipulating high powered money.

5.6 CONCEPT OF CREDIT MULTIPLIER

Credit mutiplier is a process over time which ultimately results in multiple expansion and creation of bank credit, deposit and money from a given increase in high powered money. It explains how banks create credit and deposit when their reserve base increases. To explain the credit multiplier, we have to make some simplifying assumptions and conduct the analysis with the help of a numerical example.

- The bank offers only one kind of deposit, namely demand deposit (D).
- The earning asset of banks comprises only of loans to the commercial borrowers.
- The average as well as marginal value of the desired currency-deposit ratio (c) is equal to .5.
- The desired reserve-deposit ratio of banks (which includes both the required reserve ratio and their excess reserve ratio) is equal to .1.
- There is no dearth of demand for bank loans at the going lending rate of banks, so that the bank can remain fully loaned up all the time.

The underlying logic of credit multiplier is that not all the depositors come to withdraw their deposit at the same time. The other important aspect is that if their is outflow of some deposit, there are inflows of fresh deposit every day so that the bank needs to keep only a certain fraction of total deposits in the form of cash reserve and the rest can be either loaned out or invested to earn income(other investment is ruled out by investment).

Now, we assume that the public possesses cheque worth Rs 60 crores. Further, we assume that all the payments are made in the form of cheque drawn on commercial banks. The public deposits these cheques with their banks for collection. The banks, after collection, credit

the deposit accounts of their clients. Thereby, each of the deposit of the public are reserved with bank and bank reserve increases by Rs 60 crores. Assuming the currency deposit ratio of .5, the public withdraws Rs 20 crores from the bank in currency and leaves only 40 crores worth of D and R with the banks(20/40). The crucial point is that the banks come in possession of Rs 40 crore through the sale of deposit of equal value. Such deposits that bring in new reserve to banks are called primary deposits. The multiple creation of credit, deposits and money starts with the receipt of the new reserve (Δ R) of Rs. 40 crores in the bank. The bank finds it neither necessary nor profitable to hold on all the Δ R of Rs 40 crores, as these reserve do not earn them any interest income. According to the desired reserve ratio of .1, they need to keep only Rs 4 crore with them, and lend the rest (Rs 36 crore) to the borrowers on interest. When the bank lend Rs 36 crores, these constitute the first round of credit creation. Since the deposit liabilities of the banks are a part of the money supply in the economy, the banks do not pay their borrowings in the form of cash. All that the bank does is to allow thier borrowers to draw cheque upon their loan/credit account with concerned banks upto the maximum amount of loan and credit granted. This is where the another feature of commercial banking comes to the force. When the borrower spend the loan amount in the market, the recipient of payments withdraw in currency only a part of the payments and deposit the rest with the banks. How much they withdraw in currency is the desired value of c of the public. In our example, we have assumed the value of c is 0.5. Therefore, the public withdraws Rs 12 crores in the form of currency and deposit Rs 24 crores back with banks(12/24). The usual from of realising payments of a cheque is to deposit it for collection. The currency withdrawal from bank is called currency drain and the return flow of deposit represents accretion of secondary deposits. These deposits are different from primary deposits in that they do not bring in new reserve to banks. Rathar they have been created out of loans extended by the bank themselves. With the accretion of secondary deposit of Rs 20 crores, the second round increase in deposits and money has taken place. When the banks receive Rs 24 crore deposit, this indicates that out of the first round credit of 36 crores, they have lost only Rs 12 crores as currency drain to the public. That is, if they have Rs 24 crores of new deposit liabilities, they are also left with Rs 24 crore Δ R with them. But not all of it can be lent out.

Again ΔR of Rs 24 crore they kept Rs 2.4 crore. Then the surplus or undesired excess reserve with them will be the value of Rs 21.6 (24-2.4) crores. Banks lend this again, which represents second round creation of credit for them. Again, as the loan proceeds are spent by the borrower, the recipient of payments redeposit with banks only Rs 14.4 crores and withdraw from bank Rs 7.2 crores in cash to add to their holding of currency. The currency drain reduces the surplus excess reserve with bank from Rs 21.6 crore to Rs 14.4 crore, the amount exactly equal to third round gain of deposit by banks. The process goes on in several rounds of credit creation and creation of deposit and money. But in each round the amount of credit, deposit, and money becomes smaller and smaller. As in the Keynesian theory of expenditure multiplier, each series of expansion of credit, deposit, and money is an infinite geometric series.

In this example, the round of expansion of D will be Rs 40, 24, 14.4..... They will be sum

$$\frac{1}{c+r} \Delta H$$

$$\text{or } \frac{1}{0.5 + 0.1} \Delta \text{ 60 corores = Rs. 100 cores}$$

The round of expansion of bank credit will be given by 36,21,6,12.96..... This will sum to $\frac{1 - r}{c+r} \Delta H$ or $(1-r).\ \Delta D$ =Rs. 90 corores.

Similarly, on summation, the expansion of money supply will be given by

$$\frac{1 - r}{c+r} \Delta H = 2.5.\ 60 \text{ corores} = \text{Rs.}150 \text{ cores.}$$

In the above example, the respective multiplier are

(a) Deposit Multiplier = $\frac{1}{c+r} = \frac{1}{.6} = 1.667$

(b) Bank Credit Multiplier = $\frac{1 - r}{c+r} = 1.5$

Credit multiplier is a function of two asset ratio: c and r. In the literature of money supply, they are called the proximite determinant of credit multiplier. Since they are behavioural asset ratio, they are themselves functions of other variables such as several rates of interest, the spread of banking facilities in the country, especially rural areas, holding of black money etc.



ACTIVITY 5.2

Try to derive the relation between high-powered money and money multiplier.

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CHECK YOUR PROGRESS

Q3: Currency ratio is an important determinent of money multiplier (True/False)

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Q4: Credit multiplier results in multiple expansion and creation of bank credit (True/False)

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Q5: What is high powered money? (Answer in about 40 words)

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Q 6: Mention the determinants of money supply. (Answer in about 40 words)

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Q 7: Mention the relationship between monetary base and total supply of money in an economy. (Answer in about 40 words)

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5.7 EMPIRICAL MEASUREMENT OF MONEY

As discussed in unit 1 and in this unit, it is clear that money is something, which is measurable. Before defining money empirically, it is necessary to analyse the theoretical definition of money. Once we are able to define money theoretically, identification can be made about the things that serve as money in an economy. This exercise will help you to compute the total stock of various forms of money at a particular point of time. In other words, the empirical definition of money will give knowledge about the total supply of money in an economy. It is required to be mentioned here that money supply is the amount of money in circulation in the economy at any point of time. The supply of money includes not only currency and coins but also the demand and time deposits of banks, post office savings etc. At present in India, money consists of coins, paper currency and demand deposits. Coins are an example of metallic money. They are known as token money because the intrinsic (metallic) value of token coin is less than the face value. Currency notes, on the other hand, are merely pieces of paper that hardly has any intrinsic value of their own. The currency notes can be converted into other notes or token coins of equal value. The demand deposit is not like coins or currency notes that can be passed on from hand to hand for transfer of purchasing power. Deposits are only entries in the ledgers of banks to the credit of their holders. Only those demand deposit of bank on which cheques can be drawn are considered as money.

Another important aspect of money is that there is a distinction between money and near money. Money is a legal tender and gives the possessor liquidity in hand. It performs the medium of exchange function. On the other hand, near money assets do not have any legal status. They possess moneyness or liquidity but not ready liquidity like money. They are almost perfect substitutes for money as a store of value.

5.7.1 The Narrow Definition of Money

From the above discussion, basic ideas regarding money and supply of money are formed. In this section of the chapter, a discussion is carried out regarding the empirical definition

of money supply in narrow sense as given by the RBI. This classification of the definition of money is based on liquidity of the different forms of money. Liquidity means how easily it can be converted into different forms of assets.

According to the RBI, the measurement of money supply is an empirical issue. The RBI has published various measures of money supply. Till 1967-68, the RBI used to publish only one single measure of money supply (M_1). M_1 is defined as the sum of currency and demand deposit, both held by the public. M_1 defines for money supply in the traditional sense and emphasizes the medium of exchange characteristic of money. It includes only the most liquid and the generally most accepted means of payment available as medium of exchange and for final settlement of debt.

Another change was introduced by the Reserve Bank of India in the year 1977. Since then the RBI has been publishing data on four alternative measures of money supply. The first of this measure is known as M or M_1. M_1 is the summation of currency with the public (C), demand deposits with all commercial and cooperative banks (DD) and 'other deposits' held with Reserve Bank of India (OD). In other words.

$$\mathbf{M_1 = C + DD + OD} \text{---------- (1)}$$

Thus, M_1 defines money supply in the traditional sense and emphasizes the medium of exchange charcteristic of money. In equation (1), currency includes both paper currency as well as coins. But paper currency is dominant in the form of RBI issued notes of denomination of rupee two and above such as rupees five/ ten / twenty / fifty / hundred / five hundred and newly introduced rupees two thousand etc. In addition to this, Ministry of Finance, Government of India, supplies one/two/five/ ten rupee coins. These are direct liabilities of the Government of India which are put into circulation by the RBI as an agent of the Central Government.

The second component of M_1 is demand deposit. But demand deposit here means only net demand deposits of bank

and not their total demand deposits. This is because the money is defined as something held by the public and total deposits include both deposits from the public and inter-bank deposit. The inter-bank deposits are deposits which one bank holds with others. Since they are held by the public, they are netted out of the total demand deposits to arrive at net demand deposits.

The third component of M_1 are its deposit other than those held by the government, bank and a few others. They include demand deposit of quasi-government institution (like the IDBI), foreign central banks and governments, the IMF and the World Bank etc. However, the third component of money supply of M_1 constitutes a very small portion of the money supply.

Thus we conclude that M_1, which is also known as narrow definition money, includes only the most liquid and generally the most accepted means of payment available as medium of exchange and for final settlement of debt. Other measures of money such as M_2, M_3 and M_4 are discussed in the next section of the chapter.



ACTIVITY 5.3

Trace out the components of M_1?

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5.7.2 The Broad Definition of Money

In this section of the unit, a discussion is presented about other empirical measures of money as given by the RBI such as M_2, M_3 and M_4 .

The RBI started publishing a “broader measure of money supply”, called aggregate monetary resources” from the year 1967-68. It was defined empirically as the M_1 plus the time

deposit of the bank held by the public. From April 1977, yet another change was introduced by the RBI. Since then the RBI has been publishing data on four alternative measures of money supply in place of the earlier two. The new measures are denoted by M_1, M_2 M_3 and M_4. The M_1, which is considered to be the most liquid form of money, has been discussed in the previous section.

M_2, as defined by the RBI, includes all the components of M_1. Along with that, M_2 also includes post office saving bank deposits. Post offices accept two types of deposits such as saving deposit and time deposits. The time deposit also includes recurring deposit and cumulative time deposits. Savings deposits of post office are withdrawable on demand, but only by withdrawable slip. The chequeable portion of these deposits is negligibly small. There is restriction on the number of withdrawal per month and also a maximum limit on a single withdrawal. Thus, encashability of post-office saving deposits is not perfect which makes M_2 less liquid money as compared to M_1

Thus,

M_2 = M_1 + saving deposits with Post Office Saving Banks

Now, we are in a position to identify the components of M_3 and M_4. The M_3 measure of money supply is known as aggregate monetary resources. This measure of money supply includes the components of M_1 and other time deposits of all commercial and coorperative banks (excluding inter bank time deposits). Thus

M_3 = M_1 + other time deposits of all commercial and coorperative banks (excluding the inter- bank time deposits)

Now let us look at the empirical definition of money which is known as M_4. This is considered to be the least liquid among all the empirical measures of monetary resources. The M_4 is the summation of M_3 plus total post office deposit. Thus

M_4 = M_3 + total deposits with the post office savings organisation (excluding National Savings Certificates)

Out of these measurers, M_1 has the greatest degree of liquidity. Other measures have liquidity in the descending order with M_4 having the lowest degree of liquidity.



CHECK YOUR PROGRESS

Q 8: Money is anything that acts as a medium of exchange (True/False).

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Q 9: Medium of exchange is considered to be the unique and primary function of Money (True/False).

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Q 10: M_1 is considered to be the most liquid form of money (True/False).

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Q 11: Why M_2 is less liquid money compared to M_1? (Answer in about 70 words)

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Q12: Out of M_1, M_2, M_3 and M_4 forms of money, which one has the most and which one has the least degree of liquidity? (Answer in about 20 words)

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Q 13: Mention the constituents of money supply. (Answer in about 50 words)

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5.8 LET US SUM UP

- Supply of money is the total stock of currency and other liquid instruments held by the public and circulating in an economy during a particular point of time.
- There are various determinant of supply of money such as monetary base, the required reserve ratio and excess reserve ratio of the bank, monetary policy, public desire to hold currency and confidence of the people on banks etc.
- Money multiplier is an important determinant of total supply of money in an economy.
- The value of the money multiplier is determined by the currency ratio (C_r) of the public, the required reserve ratio (RR_r) and the excess reserve ratio (ERr) of the commercial bank.
- The significance of money multiplier (m) can be assessed from the fact that if the value of the money multiplier is stable, the central bank can manipulate the supply of money by manipulating high-powered money.
- Credit mutiplier is a process over time which ultimately results in multiple expansion and creation of bank credit, deposit and money from a given increase in high powered money.
- Based on liquidity, the Reserve Bank of India has empirically classified money into four catagories M_1, M_2, M_3 and M_4.
- M_1 is considered to be the most liquid form of money followed by M_2, M_3 and M_4.



5.9 FURTHER READING

- Gupta, S. B. (2003). *Monetary Economics: Institutions, Theory and Policy.* S. Chand & Company Ltd.
- Jhingan, M. L. (2012). *Monetary Economics.* Vrinda Publications P Ltd.

- Mithani, D. M. (2002). *A Course in Macroeconomics.* Mumbai: Himalaya Publishing House.
- Paul, R. R. (2008). *Monetary Economics.* Ludhiana: Kalyani Publisher
- Rana, K. C. & Verma, K. N. (2009). *Macro Economic Analysis.*New Delhi: Vishal Publishing Co.
- Sheth, M. L. (2002). *Monetary Economics*. Agra: Lakshmi Narayan Agarwal.



5.10 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q No 1: True

Ans to Q No 2: True

Ans to Q No 3: True

Ans to Q No 4: True

Ans to Q 5: High powered money is the determinant of money supply that consist of i) gold stock, ii) amount of money issued by the government i.e. coins and currency etc. and iii) the outstanding central government credit i.e. loan securities etc. It is given by -

High powered money (H) = C + RR + ER. where C =currency, RR= reserve ratio; and ER= excess reserve.

Ans to Q 6: The determinants of money supply are both exogenous and endogenous. The exogenous factors of money supply are determined by the central bank. The endogenous factors are determined by changes in economic activities which affect peoples' desire to hold currency relative to deposit, the rate of interest etc.

Ans to Q 7: The monetary base is considered as the most important determinant of supply of money. Money supply varies directly in relation to the changes in the monetary base. Monetary base refers to the supply of fund available for use either as cash or reserve of the central bank. Monetary base changes due to the policy of the government or is influenced by the value of money.

Ans to Q No 8: True

Ans to Q No 9: True

Ans to Q No 10: True

Ans to Q No 11: M_2, as defined by the RBI, includes all the components of M_1. Along with that, M_2 also includes post office saving bank deposits. Post offices accept two types of deposits such as saving deposit and time deposits. The time deposit also includes recurring deposit and cumulative time deposits. Savings deposits of post office are withdrawable on demand, but only by withdrawable slip. The chequeable portion of these deposits is negligibly small. There is restriction on the number of withdrawal per month and also a maximum limit on a single withdrawal. Thus, encashability of post-office saving deposits is not perfect which makes M_2 a less liquid money as compared to M_1

Ans to Q 12: Out of these measurers, M_1 has the greatest degree of liquidity. Other measures have liquidity in the descending order with M_4 having the least degree of liquidity.

Ans to Q13: The constituents of monetary supply are given as:

M_1=C+DD+OD, where C= Currency, DD= Demand Deposit and OD= Other Deposit of RBI as are in the nature of demand deposits.

M_2=M_1+ saving deposits with Post Office Saving Banks.

M_3= M_2+Net Time Deposit with banks

M_4= M_3+all types of deposit's with Post Offices – National Saving Certificates.



5.11 MODEL QUESTIONS

Short Questions (Answer each question in about 150 words)

Q1: What is the monetary base of a country?

Q2: What is high powered money?

Q3: Write a short note on supply of money.

Q4: Explain how the velocity of circulation of money affects the money supply.

Q5: Explain the degree of liquidity of the constituents of money supply.

Essay- type Questions (Answer each question in 300-500 words)

Q 1: Explain how changes in the monetary base influence the total supply of money in an economy.

Q 2: Explain the relation between high-powered money and money supply.

Q 3: Explain the process of derivation of money multiplier.

Q 4: Explain the process of credit creation by the bank with the help of credit multiplier.

Q 5: Critically discuss the narrower definition of money.

Q 6: Explain the constituents of money supply.

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UNIT 6: FUNCTIONS OF CENTRAL BANK

UNIT STRUCTURE

6.1 Learning Objectives

6.2 Introduction

6.3 Functions of Central Bank

6.4 Role of central bank in Developing Countries

6.5 Let Us Sum Up

6.6 Further Reading

6.7 Answers to Check Your Progress

6.8 Model Questions

6.1 LEARNING OBJECTIVES

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

- know the different functions that a central bank performs in a modern economy
- explain why central bank is regarded as the apex institution in the money and financial market in an economy
- discuss the special role played by the central bank in a developing country like India in addition to its traditional role.

6.2 INTRODUCTION

The central bank of a country is the apex institution of a country's monetary system. Since the monetary system is the most important component of the financial system of a country, a central bank is also the apex institution of its financial system. The central bank assumes the responsibility of organization, monitoring, regulation and development of the monetary and financial system of a modern economy. Any modern economy that runs with money and credit is crucially dependent on the financial system. Here in lies the most important responsibility of the central bank of a country. In addition, in a developing country like India, the central bank needs to perform certain promotional role in accordance with the broad socio-economic objectives of the country.

The present unit discusses the main functions of the central bank, various credit control measures it takes up, and the special role that it has to play in a developing country.

Before we present the central functions of a central bank, let us present here the broadest definition of a central bank as given by De Kock. According to him, a central bank is "a bank which constitutes the apex of the monetary and banking structure of its country and which performs as best as it can in the national economic interest, the following functions: (i) The regulation of currency in accordance with the requirements of business and the general public for which purpose it is granted either the sole right of note issue or at least a partial monopoly thereof, (ii) The performance of general banking and agency for the state, (iii) The custody of the cash reserves of the commercial banks, (iv) The custody and management of the nation's reserves of international currency, (v) The granting of accommodation in the form of re-discounts and collateral advances to commercial banks, bill brokers and dealers, or other financial institutions and the general acceptance of the responsibility of lender of the last resort, (vi) The settlement of clearance balances between the banks, (vii) The control of credit in accordance with the needs of business and with a view to carrying out the broad monetary policy adopted by the state."

Every country has its own central bank. In our country the Reserve Bank of India (RBI) is the central Bank, in England it is the Bank of England, in the USA it is the Federal Reserve System and so on.

6.3 FUNCTIONS OF CENTRAL BANK

The central bank, being the institution entrusted with the responsibility of managing the expansion and contraction of the volume of money in the interest of the general public, performs a variety of functions. Different definitions of the central bank emphasize one or more of its functions. The principal and more common functions of a central bank are as follows:

- **Currency Authority:** The central bank has the monopoly of note issue. The currency notes printed and issued by the central bank become unlimited legal tender throughout the country. The central

bank keeps three considerations in mind while performing this function. These are- uniformity, elasticity, and security. The right to note issue is regulated by law.

Central banks have been following different methods of note issue in different countries. The central bank is required by law to keep a certain amount of gold and foreign securities against the issue of notes. In some countries, the amount of gold and foreign securities bears a fixed proportion, between 25 to 40 per cent of the total notes issued.In other countries, a minimum fixed amount of gold and foreign currencies is required to be kept against note issue by the central bank. This system is operative in India whereby the Reserve Bank of India is required to keep Rs 115 crores in gold and Rs 85 crores in foreign securities. There is no limit to the issue of notes after keeping this minimum amount of Rs 200 crores in gold and foreign securities.

The monopoly of issuing notes vested in the central bank ensures uniformity in the notes issued which helps in facilitating exchange and trade within the country. It brings stability in the monetary system and creates confidence among the public. The central bank can restrict or expand the supply of cash according to the requirements of the economy. Thus it provides elasticity to the monetary system. By having a monopoly of note issue, the central bank also controls the banking system by being the ultimate source of cash. Last but not the least, by entrusting the monopoly of note issue to the central bank, the government is able to earn profits from printing notes whose cost is very low as compared with their face value.

- **Banker, Agent and Adviser to the Government:** The central bank acts as the banker to the government, both central and state governments. As banker to the government, the central bank keeps the deposits of the central and state governments and makes payments on behalf of governments. It transacts all banking business of the government like receipt and payment of money, carrying out of its exchange, remittance and other banking operations. It keeps the stock of gold of the government. Thus it is the custodian of government money and wealth.

  As an agent to the government, the central bank collects taxes on behalf of the government, undertakes management of government borrowings, and represents the government in international forum.

As a fiscal agent, the central bank makes short-term loans to the government for a period not exceeding 90 days. It floats loans, pays interest on them, and finally repays them on behalf of the government. Thus it manages the entire public debt.

In its capacity as an adviser to the government, the central bank advises the government on economic, monetary and financial matters such as devaluation, public debt management, trade policy, and foreign exchange policy and so on.

- **Bankers' Bank:** As bankers' bank the central bank acts as the custodian of cash reserves, lender of the last resort, and the clearing agent of commercial banks. Every commercial bank has to keep certain percentage of their cash deposits with the Central Bank. When a commercial bank finds itself in financial trouble it can approach the central bank for financial resources and the central bank offers support under specific terms and conditions. Since commercial banks typically approach the central bank only when all options are exhausted, it is known as the lender of the last resort. The central bank also acts as a clearing house for the commercial banks. It settles the claims of banks on each other with the minimum use of cash.

  Thus the central bank acts as the custodian of the cash reserves of commercial banks and helps in facilitating their transactions. There are many advantages of keeping the cash reserves of the commercial banks with the central bank, according to De Kock.In the first place, the centralisation of cash reserves in the central bank is a source of great strength to the banking system of a country. Secondly, centralised cash reserves can serve as the basis of a large and more elastic credit structure than if the same amount were scattered among the individual banks.Thirdly, centralised cash reserves can be utilised fully and most effectively during periods of seasonal strains and in financial crises or emergencies. Fourthly, by varying these cash reserves the central bank can control the credit creation by commercial banks. Lastly, the central bank can provide additional funds on a temporary and short term basis to commercial banks to overcome their financial difficulties.

- **Custodian of Foreign Exchange Reserve:** The central bank keeps and manages the foreign exchange reserves of the country. It is an official reservoir of gold and foreign currencies. It sells gold at fixed

prices to the monetary authorities of other countries. It also buys and sells foreign currencies at international prices. Further, it fixes the exchange rates of the domestic currency in terms of foreign currencies. It holds these rates within narrow limits in keeping with its obligations as a member of the International Monetary Fund and tries to bring stability in foreign exchange rates. Further, it manages exchange control operations by supplying foreign currencies to importers and persons visiting foreign countries on business, studies, etc. in keeping with the rules laid down by the government. Thus as the custodian of foreign exchange reserves, the central bank takes the necessary step to maintain exchange rate stability and to overcome Balance of Payment (BOP) difficulties.

- **Controller of Money Supply and Credit:** One of the most important functions of a central bank is to control the total supply of money and credit in the best interest of the national economy. The central bank has to meet the diverse claim on itself and the banking system for credit in such a manner that promotes maximum output and employment with price stability, exchange rate stability, and a high rate of growth. For this purpose, it adopts quantitative methods and qualitative methods. Quantitative methods aim at controlling the cost and quantity of credit by adopting bank rate policy, open market operations, and by variations in reserve ratios of commercial banks. Qualitative methods control the use and direction of credit. These involve selective credit controls and direct action. By adopting such methods, the central bank tries to influence and control credit creation by commercial banks in order to stabilise economic activity in the country.
- **Developmental Role:** In addition to its traditional role, a central bank also performs certain developmental and promotional roles in a developing country. This includes the development of financial infrastructure, monetization of the economy, sectoral development, distributive justice and so on. Accordingly, the central banks possess some additional powers of supervision and control over the commercial banks. They are the issuing of licenses, the regulation of branch expansion, to see that every bank maintains the minimum paid up capital and reserves as provided by law, inspecting or auditing the accounts of banks; to approve the appointment of chairmen and directors of such banks in accordance with the rules and qualifications, to control and recommend

merger of weak banks in order to avoid their failures and to protect the interest of depositors, to recommend nationalisation of certain banks to the government in public interest, to publish periodical reports relating to different aspects of monetary and economic policies for the benefit of banks and the public; and to engage in research and train banking personnel and so on.

- **Miscellaneous:** The central bank of a country also performs miscellaneous functions such as follows:
  - It collects and publishes statistical data providing information about the current status of the economy.
  - It conducts surveys; seminars etc. and publishes periodic reports on money matters.
  - It extends training facilities to the staff working in the various banking institutions.



CHECK YOUR PROGRESS

Q1: Name the institution that is regarded as the apex monetary institution of the country.

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Q2: What are the three issues the central bank keeps in mind while performing the role of currency authority?(Answer in about 30 words)

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Q3: Why the central bank is called the lender of the last resort?(Answer in about 40 words)

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6.4 ROLE OF CENTRAL BANK IN DEVELOPING COUNTRIES

As has been noted earlier, the central bank in a developing country has to play a much wider role in addition to performing its

traditional functions. As the monetary authority of the land, the central bank plays a very active role in the following directions:

- Building up and strengthening the country's financial infrastructure;
- Filling up the major institutional gaps through the setting up of new financial institutions;
- Reorganizing the existing financial institutions to facilitate and conform to changing development and other policy needs of the economy;
- Devising new measures for influencing the allocation of credit in socially desired directions.

We may discuss the role that a central bank can play in a developing country with reference to the developmental and promotional steps taken by the Reserve Bank of India (RBI). This is done in the following section.

- Promotion of Financial Institutions
- Promotion of Credit and Finance
- Allocation of credit in socially desired direction
- **Promotion of Financial Institutions:** With the objective of establishing and strengthening the financial infrastructure of the country the central bank may embark upon promoting commercial banks, co-operative banks, and promotion of bill market.

  In order to strengthen *commercial banking* structure of the economy the central bank may liquidate weak banks or amalgamate them with stronger banks, and may improve the operational standards of the banks by regular inspection and surveillance. The central bank facilitates to increase the geographical coverage of the banks and extend banking facility throughout the country. Since the beginning of economic reforms in 1991 in India, the RBI has given licenses to private sector as well as foreign entities to set up and operate banks. In recent years we have seen starting up of several small banks like RGVN (MF) to cater to the needs of various sections of the society. More recently several finacial service providers have been given licenses to operate as payment banks. The central bank can also arrange for the education and training of banking personnel. In India the RBI is playing a very active role in promoting financial literacy and facilitating Prime Minister's Jan DhanYojana.

The Central Bank, depending on the objective conditions of the country, may also contribute to country specific specialized areas such as *cooperative credit* movement in India. The RBI's role transformed from that of a Central Banker to that of an active agency that take all necessary measures for enabling the co-operative system to provide a growingly larger share of rural credit. In this role the RBI also started offering greater financial assistance to cooperatives for credit facilities to small farmers and other weaker sections and for minimizing disparities in the flow of credit to various regions.

The central bank plays a crucial role in developing a genuine bill market in the developing economy. The advantages of developing a genuine bill market are great for the banking system. Extensive use of bills increase liquidity in the system, gives higher returns to the holders, reduces the cost of holding financial assets and, in general, makes the monetary system highly elastic. All these are positive steps for improving the financial infrastructure of the economy.

- **Promotion of Credit and Finance:** For promoting credit and finance for the purpose of accelerating the economic development of the country the central bank can promote Rural & Agricultural Finance, Industrial Finance, and Export Finance.

  The central bank can assume the special responsibility to provide adequate amount of institutional credit to the agricultural and other rural activities. For this purpose it can facilitate the expansion of bank branches in rural areas and in the setting up of specialized institutions such as National Bank for Agriculture and Rural Development (NABARD), Regional Rural Banks and so on. All these help provision of adequate rural finance as well as mobilization of rural credit.

  In the industrial finance, the central bank can step in to fill the gap in the traditional commercial banking activities. It can take special measures to provide for long term development finance and bank credit for small scale industries. Such a strategy will certainly go a long way in accelerating the industrial development of the country.

  In the sphere of external trade, the central bank can take important steps to provide export credit at internationally competitive prices. This will give a very important support to the exporters which will

have a positive impact on the flow of precious foreign exchange into the country. The Central Bank, like the RBI in India, may even set up specialized institution like the Export-Import (EXIM) Bank which acts as the apex institution relating to financing of foreign trade.

- **Allocation of Credit in Socially Desired Direction:** For ensuring that adequate amount of credit in the economy gets directed towards the socially desirable sections and sectors, the central bank can devise schemes for weaker sections, credit guarantee for priority sectors, and provide for differential interest rate for designated sections of the population. In this regard the central bank can facilitate the devising and implementation of credit guarantee scheme for small scale industries; it can set up institution like Credit Guarantee Corporation to address the credit need of small transport operators, traders, artisans, self employed persons, small business enterprises, farmers and agriculturists etc. As regards differential rate of interest, the central bank can make provisions for preferential rate of interest for vulnerable and deprived sections of the society such as the scheduled cast/scheduled tribe population of India.



CHECK YOUR PROGRESS

Q4: Write the full form of NABARD and EXIM Bank.

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Q5: Mention four broad areas where in the central bank of a country can contribute in its developmental role.(Answer in about 30 words)

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Q6: Mention two advantages of a developed bill market.(Answer in about 40 words)

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6.5 LET US SUM UP

- The central bank of a country is the monetary authority of the land. It is the institution that is charged primarily with controlling the country's money and banking system. It has the responsibility of formulating and implementing the monetary policy of the country.
- Since the monetary system is the most important component of the financial system of a country, a central bank is also the apex institution of its financial system. The central bank assumes the responsibility of organization, monitoring, regulation and development of the monetary and financial system of a modern economy.
- The central bank, being the institution entrusted with the responsibility of managing the expansion and contraction of the volume of money in the interest of the general public, performs a variety of functions. These functions include the monopoly of note issue, adviser to the state and central government, bankers' bank, custodian of foreign exchange reserve, credit control, and promotional and developmental functions.
- In a developing country like India, the central bank can play a much wider role in addition to performing its traditional functions. As the monetary authority of the land, the central bank plays a very active role in the following directions: promotion of financial institutions, promotion of credit and finance, and allocation of credit in socially desired direction.



6.6 FURTHER READING

- Gupta, S. B. (1999). *Monetary Economics – Institutions, Theory and Policy*. New Delhi: S.Chand and Company Ltd.
- Paul, R.R. (1996). *Monetary Economics*. Ludhiana: Kalyani Publishers.



6.7 ANSWERS TO CHECK YOUR PRGRESS

Ans. to Q No 1: The central bank of the country, such as Reserve Bank Of India (RBI) in India.

Ans. to Q No 2: The three issues are- uniformity, elasticity, and security.

Ans. to Q No 3: When a commercial bank finds itself in financial trouble it can approach the central bank for financial resources and the central bank offers support under specific terms and conditions. Since commercial banks typically approach the central bank only when all options are exhausted, it is known as the lender of the last resort.

Ans. to Q No 4: NABARD: National Bank for Agriculture and Rural Development

EXIM Bank : Export – Import Bank.

Ans. to Q No 5: The central bank of a country in its promotional role can contribute in the following four areas:

- Building up and strengthening the country's financial infrastructure;
- Filling up the major institutional gaps through the setting up of new financialinstitutions;
- Reorganizing the existing financial institutions to facilitate and conform to changing development and other policy needs of the economy;
- Devising new measures for influencing the allocation of credit in socially desired directions.

Ans. to Q No 6: A developed genuine bill market increases liquidity in the system and makes the monetary system highly elastic.



6.8 MODEL QUESTIONS

Short Questions (Answer each question in about 150 words)

Q1: What is a Central Bank?

Q2: Why central bank is called as banker's bank?

Q3: How does the central bank promote the financial institutions in an economy?

Q4: Why a central bank is considered as the apex institution of a financial system?

Essay- type Questions (Answer each question in 300-500 words)

Q 1: Discuss the traditional functions of a Central Bank.

Q 2: Discuss the broadest definition of a central bank as given by De Kock.

Q 3: Do you think that a central bank can play a special role in the development of the economy of a developing country? Justify your answer.

Q4: Why central bank is called the Monetary Authority of a country?

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UNIT 7: CENTRAL BANK AND CREDIT CONTROL

UNIT STRUCTURE

7.1 Learning Objectives

7.2 Introduction

7.3 Methods of Credit Control: Quantitative Measures

7.4 Methods of Credit Control: Qualitative Measures

7.5 Let Us Sum Up

7.6 Further Reading

7.7 Answers to Check Your Progress

7.8 Model Questions

7.1 LEARNING OBJECTIVES

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

- know how the central bank of a country controls both the total volume as well as composition of credit in the economy
- explain all the instruments under quantitative measures of credit control
- illustrate the common measures of selective or qualitative credit control
- distinguish between the quantitative and qualitative measures of credit control.

7.2 INTRODUCTION

Controlling the total supply of money and bank credit in the best national interest is a very important function of the central bank of a country. Credit control is an important tool used by the Central Bank. It is a major weapon of the monetary policy used to control the demand and supply of money (liquidity) in the economy. It is concerned with the objective of bringing economic development with stability. Thus by credit control , which is an important function of the Central Bank, the central bank seeks to accelerate economic growth while controlling

inflationary trend in the economy. We may delineate briefly the main objectives of credit control as follows:

- Attain and maintain internal price stability
- Stablise the money market in the economy
- Eliminate cyclical fluctuations such as inflation and recession by controlling credit flow
- Meet the financial requirement of the country both during normal time and during emergency situations
- Facilitate and accelerate economic growth of the country within a specified period of time.

To perform this function well a central bank uses several control instruments at its disposal. These measures can be broadly classified into two headings: Quantitative or General Credit Control Measures and Qualitative or Selective Credit Control Measures. As the name suggests, the former seeks to control the overall or aggregate availability of credit in the economy. The latter concentrates on the composition of credit. It focusses on specific sectors or areas. Both the measures can be adopted simultaneously or in isolation depending on the specific situation prevailing in the economy. In this unit we have discussed in detail the various instruments employed under the two broad measues. At the end of the unit we have also noted direct action of the central bank which is taken to enforce both qualitative and quantitative credit controls.

7.3 METHODS OF CREDIT CONTROL : QUANTITATIVE MEASURES

The quantitative methods seek to influence the total volume of credit in the banking system without any regard for the use to which it is put. The important quantitative methods are Repo Rate,Open Market Operations and Cash Reserve Ratio

Repo Rate: Repo rate is the rate at which the central bank is prepared to buy or rediscount eligible bills of exchange or other commercial paper. The central bank helps the commercial banks by

advancing loans against approved securities. The rate of interest which the central Bank charges from the commercial bank is called the repo rate.

The repo rate policy aims at influencing the cost and availability of credit to the commercial banks, and thereby the interest rate and money supply in the economy. An increase in the repo rate, by raising the cost of borrowed funds, discourages bank borrowings from the Central Bank. This in turn leads to an increase in the lending rate of commercial banks and shrinkage in the capacity to create credit. The reverse happens when the repo rate is lowered.

A deliberate manipulation of the bank rate by the central bank to influence the flow of credit created by the commercial banks is known as bank rate policy. The bank rate policy affects the demand for credit, the cost of the credit and the availability of the credit. An increase in bank rate results in an increase in the cost of credit. This is expected to lead to a reduction in demand for credit. Since bank credit is an important component of aggregate money supply in the economy, a reduction in demand for credit consequent on an increase in the cost of credit restricts the total availability of money in the economy, and hence may prove an anti-inflationary measure of control.

Similarly, a fall in the repo rate causes other rates of interest to come down. The cost of credit falls, i. e., and credit becomes cheaper. Cheap credit may induce a higher demand both for investment and consumption purposes. More money, through increased flow of credit, comes into circulation.

A fall in repo rate may, thus, prove an anti-deflationary instrument of control. The effectiveness of bank rate as an instrument of control is, however, restricted primarily by the fact that both in inflationary and recessionary conditions, the cost of credit may not be a very significant factor influencing the investment decisions of the firms.

It is not easy to predict precisely the effects of a change in the repo rate. This will depend on several factors such as – a) degree of banks' dependence on borrowed reserves; b) the sensitivity of the banks' demand for borrowed reserves to the difference between their lending and borrowing rates; c) the extent to which the other rates of interest have changed; d) the state of demand for and supply of loans from other sources etc.

Open Market Operations: Open market operations refer to the purchase and sale of securities by the central bank from/to the public and banks on its own account to adjust money supply conditions. Securities may be any eligible paper like government securities, bills, and securities of private concerns etc. The central bank sells securites to suck out liquidity from the system and buys back securities to infuse liquidity into the system. These operations are often conducted on a day-to-day basis in a manner that balances inflation while helping banks continue to lend. The central bank uses open market operations (OMOs) along with other monetary policy tools such as repo rate, cash reserve ratio and statutory liquidity ratio to adjust the quantum and price of money in the system.

Every open market purchase by the central bank increases the money supply and every sale decreases it. The open market purchase and sale affect the credit situation in the country by influencing the cash reserve of the banks. For instance ,when the central bank purchases securities from the public, the amount of cash in the system increases. This increases the cash reserves and credit creation capacity of the banking system. It also affects the interest rate as buying and selling of securities affect their prices, which in turn affect the interest rate as security prices and interest rates are inversely related.

The open market operations by the RBI is important for India for liquidity management point of view as well. In India, liquidity conditions usually tighten during the second half of the financial year (mid-October onwards). This happens because the pace of government expenditure usually slows down, even as the onset of the festival season leads to a seasonal spurt in currency demand. Moreover, activities of foreign institutional investors, advance tax payments, etc. also cause an ebb and flow of liquidity.However, the RBI smoothens the availability of money through the year to make sure that liquidity conditions don’t impact the ideal level of interest rates it would like to maintain in the economy. Liquidity management is also essential so that banks and their borrowers don’t face a cash crunch. The RBI buys government securities if it thinks systemic liquidity needs a boost and offloads them if it wants to mop up excess money.

The open market operation of central bank can be an effective instrument of monetary policy only when certain conditions are satisfied. These are : a) the market for securities should be well organized and developed; b) the central bank should have enough capacity to buy and sell securities ; c) the central bank must be free to pursue the operations for credit control and must not be tied with any other consideration.

Variable Cash Reserve Ratio(CRR): Cash reserve ratio is the percentage of the deposit that a bank has to keep with the RBI. This method changes the minimum cash reserves to be kept with the central bank by the commercial banks. This is generally considered a more direct and effective method of credit control. Changes in the cash reserve ratio influence not only the volume of excess reserves with the commercial banks, but also the credit multiplier of the banking system. An increase in the cash reserve ratio reduces excess reserves with the banking system and also the value of the credit multiplier. The reverse will happen if the cash reserve ratio is reduced. As on 12th June,2017, the CRR in India is 4%.

In India the RBI also use a measure called Statutory Liquidity Ratio (SLR).The RBI Act instructs that all commercial banks in the country have to keep a given proportion of their demand and time deposits as *liquid assets* in *their own vault*. This is called statutory liquidity ratio. As on 12th June,2017, the SLR is 20%. The word statutory here means that it is a legal requirement and liquid asset means assets in the form of cash, gold and approved securities (usually government securities). Naturally when the SLR is increased bank's ability to extend credit gets reduced.

The CRR is kept in the form of cash and that also *with the RBI*. No interest is paid on such reserves. On the other hand, SLR is the percentage of deposit that the banks have to keep as liquid assets in *their own vault.*The banks also earn an interest income on these liquid assets. However, the CRR is a more active and useful monetary policy weapon compared to the SLR.*The key differences between the CRR and the SLR* are delineated below:

- CRR is the percentage of money, which a bank has to keep with RBI

in the form of cash. On the other hand, SLR is the proportion of liquid assets to time and demand liabilities.

- The next difference between these two is that CRR is maintained in the form of cash while the SLR is to be maintained in the form of gold, cash and government approved securities.
- CRR regulates the flow of money in the economy whereas SLR ensures the solvency of the banks.
- CRR is maintained by RBI, but RBI does not maintain SLR.
- The liquidity of the country is regulated by CRR while SLR governs the credit growth of the country.

Limitations of Selective Credit Control Measures: As a control measure the method of variable reserve ratio suffers from certain limitations like any other individual measure. This method needs to be supplemented by other measures to be effective. Its effectiveness will particular require the fulfillment of the following conditions:

- There must not be any non compliance of the banks to the higher or additional reserve requirement.
- There must not be increased or compensatory borrowing by banks from the central bank and other sources.
- There must not be increased or compensatory sale of government securities by banks to the Central Bank.

7.4 METHODS OF CREDIT CONTROL: QUALITATIVE MEASURES

The regulation of credit for specific purposes is termed as selective credit control. This method of credit control operates on the distribution of total credit. The distribution of credit can have two main aspects- positive and negative. On the positive side, measures can be used to encourage greater channeling of credit into particular sectors. On the negative side, measures are taken to restrict the flow of credit to particular sectors or activities. Commonly adopted selective credit control measures are Marginal Requirement,Regulation of Consumer Credit, Rationing of Credit, Moral Suasion and Publicity.

Marginal Requirement: Changes in margin requirements are designed to influence the flow of credit against specific commodities. The commercial banks generally advance loans to their customers against some security or securities offered by the borrower and acceptable to banks. More generally, the commercial banks do not lend up to the full amount of the security but lend an amount less than its value. The difference between the market value of the security and its maximum loan value is called the marginal requirement. The margin requirements against specific securities are determined by the Central Bank. While taking a loan the borrower has to pledge a security. Now if the market value of the security is Rs.100, 000/ and the margin requirement is 25%, the maximum loan that will be given against the security is Rs.75,000/. Thus an increase in the margin requirement will reduce the amount that can be borrowed against security. In this way lending can be discouraged in specified sectors. Similarly, a fall in margin requirement leads to an increase in the borrowing value of the security.

Regulation of Consumer Credit: Under the consumer credit system, a certain percentage of the price of the product to be bought is paid by the consumer in cash which is known as the down payment. The balance is financed through a bank credit which is repayable by the consumer in installments. The central bank can control the consumer credit by changing the amount of down payment and the period of repayment of the bank credit. This method generally seeks to check excessive demand for consumer goods in order to control their price.

Rationing of Credit: Credit rationing is adopted to control and regulate the purpose for which credit is granted by commercial banks. Rationing typically takes any of the following forms –

- The central bank may fix its rediscounting facilities for any particular bank.
- The central bank may fix the minimum ratio regarding the capital of a commercial bank to its total assets.

Thus through credit rationing the central bank attempts to limit the maximum loans and advances offered to commercial banks and also to impose a ceiling for loans and advances for specific purposes.

Moral Suasion: The central bank may also exercise its moral authority over the commercial banks and advise the commercial banks

to co-operate with its monetary policy. There is no coercion involved hers. For instance, it may request or persuade commercial banks not to offer loans in the sectors where it suspects speculative activities.

Publicity: Sometime the central bank also takes recourse to publicity to educate the general public about the monetary and economic situations of the country, to influence the credit giving activities of the commercial banks, and to generate public opinion in favor of its monetary policy.

Merits of Selective Credit Control Measures: As a method of credit control the selective measures command a lot of merit as mentioned below:

- It enables the authority to divert resources from less essential to more essential sectors of the economy.
- It restricts credit only in the targeted areas without affecting the economy as a whole.
- It can come handy when quantitative credit control measures may not be very effective due to various reasons.

Limitations of Selective Credit Control Measures: However the degree of success of selective credit control measures depends on several factors. Some of the important limitations of this method are mentioned below:

- Since these measures are security oriented borrowers can manage to get other collaterals, borrow against them and then indulge in speculative activities.
- To the extent traders do not depend upon banks for financing their inventories and have other sources of finance, they can easily escape the constrains imposed by the selective control measures.
- The degree of shortfall in supply in relation to normal demand may be huge. This will encourage speculative activities even in presence of restrictive measures. Therefore, when there is acute shortages, the credit control should be imposed well in time before the prices of sensitive commodities start skyrocketing.

From the above discussion we may infer that the selective credit control measures can, at best, be a useful supplement to general credit control measures. It is also likely to be more successful when implemented along with the general credit control measures, rather than without them.

Now we should mention that in addition to the broad credit control measures discussed above, the central bank of a country also takes recourse to **Direct Action**. Direct action is taken to enforce both qualitative and quantitative credit controls. These actions refer to directions given by the central bank to the commercial banks regarding their lending and investment policies. Direct action may take any of the following forms:

- The central bank may refuse the rediscounting facility to any commercial bank whose credit giving activity is not in line with the general credit policy.

- The central bank may charge penal rate of interest over and above the bank rate, on the money demanded by a commercial bank beyond the prescribed limit.

- The central bank may even refuse to grant more credit to the banks whose borrowings are found to be in excess of their capital and resources.

Although practiced from time to time, direct actions are not popular and are generally reserved for extreme situations. It involves the use of force and creates an atmosphere of fear. In such a situation the central bank may fail to command respect and active co-operation from the commercial banks. Moreover, direct actions come in conflict with the function of central bank as the lender of the last resort.

We may note that the effectiveness of credit control measures in an economy depends upon a number of factors. First, there must exist a well-organised money market. Second, a large proportion of money in circulation should form part of the organised money market i.e the operation of the unorganised money market must not be significant. Finally, the coverage of the money and capital markets should be extensive and it should also be elastic in nature, giving them the

required flexibility.Extensiveness enlarges the scope of credit control measures and elasticity lends it adjustability to the changed conditions. It is easy to see that in most of the developed economies a favourable environment in terms of the factors noted exists. But same can not be said about the developing economies.As a result, the effectiveness of the credit control measures in developing economies is rather limited as compared to the developed countries.



CHECK YOUR PROGRESS

Q 1. What are the two broad methods of credit control adopted by a central bank of a country? (Answer in about 30 words)

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Q 2. Distinguish between the general and selective credit control measures. (Answer in about 40 words)

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Q 3. Mention the principal measures under the quantitative and qualitative credit control measures. (Answer in about 50 words)

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Q 4. What are 'Direct Actions' taken by a central bank in connection with its credit control policy? (Answer in about 30 words)

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Q 5. Mention some of the differences between the CRR and the SLR. (Answer in about 80 words)

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7.5 LET US SUM UP

- Controlling the total supply of money and bank credit in the best national interest is a very important function of the central bank of a country. To perform this function well a central bank uses several control instruments at its disposal. These measures can be broadly classified into two headings: quantitative credit control and qualitative credit control.

- While the quantitative methods seek to influence the total volume of credit in the banking system without any regard for the use to which it is put, the qualitative credit control measures influence the composition of the total credit.

- The quantitative methods include – bank rate, open market operations and variation of cash reserve. The qualitative methods include – margin requirement, consumer credit, credit rationing, moral suasion, and publicity.

- Some time the central bank of a country also takes recourse to *Direct Action*. Direct action is taken to enforce both qualitative and quantitative credit controls. These actions refer to directions given by the central bank to the commercial banks regarding their lending and investment policies.

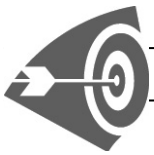
- Direct actions can take the form of refusal of rediscounting facility, imposition of penal rate of interest, and refusal of further granting of

credit to commercial banks whose credit giving activities are not in conformation to the policies of the Central Bank.



7.6 FURTHER READING

- Gupta, S. B. (1999). *Monetary Economics – Institutions, Theory and Policy*. New Delhi: S.Chand and Company Ltd.
- Paul, R.R. (1996). *Monetary Economics*. Ludhiana: Kalyani Publishers.



7.7 ANSWERS TO CHECK YOUR PROGRESS

Ans. to Q No 1: General or quantitative credit control and selective or qualitative credit control.

Ans. to Q No 2: While the quantitative credit control measures attempt to control the total volume of credit, the qualitative credit control measures attempt to control the composition of credit.

Ans. to Q No 3: The quantitative methods include – bank rate, open market operations and variation of cash reserve. The qualitative methods include – margin requirement, consumer credit, credit rationing, moral suasion, and publicity.

Ans. to Q No 4: Direct actions can take the form of refusal of rediscounting facility, imposition of penal rate of interest, and refusal of further granting of credit to commercial banks whose credit giving activities are not in conformation to the policies of the Central Bank.

Ans. to Q No 5: CRR is the percentage of money, which a bank has to keep with RBI in the form of cash where as SLR is the proportion of liquid assets to time and demand liabilities; CRR is maintained in the form of cash while the SLR is to be maintained in the form of gold, cash and government approved securities; CRR regulates the flow of money in the economy whereas SLR ensures the solvency of the banks; CRR is maintained by RBI, but RBI does not maintain SLR and the liquidity of the country

is regulated by CRR while SLR governs the credit growth of the country.



7.8 MODEL QUESTIONS

Short Questions (Answer each question in about 150 words)

Q1: What is selective credit control?

Q2: What is Statutory Liquidity Ratio?

Q3: What is credit rationing?

Q4: What is repo rate?

Essay- type Questions (Answer each question in 300-500 words)

Q 1: Critically discuss the various quantitative measures adopted by the central bank of a country in controlling credit in the system.

Q 2: Explain how different selective credit control instruments work.

Q 3: Explain the various credit control measures adopted by the central bank of a country .

Q 4: Trace out the difference between the quantitative and qualitative measures of credit control.

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