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INTRODUCTION

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Money is any object or record that is generally accepted as payment for goods and services and repayment of debts in a given countryor socio-economic context. The main functions of moneyare distinguished as: a medium of exchange; a unit of account; a store of value; and, occasionally in the past, a standard of deferred payment. The money supply of a country consists of currency (banknotes and coins) and bank money (the balance held in checking accounts and savings accounts).

Bank money usually forms by far the largest part of the money supply. One cannot begin to understand how money is created and how it works without a good understanding of the banking system, and the special role of the central bank. Banking in India originated in the last decades of the 18th century. The first banks were The General Bank of India, which started in 1786, and Bank of Hindustan, which started in 1790; both are now defunct. The Government of India issued an ordinance and nationalized the fourteen largest commercial banks with effect from the midnight of 19 July 1969. Asecond dose of nationalization of six more commercial banks followed in 1980.

This book, *Money and Banking*, is written with the distance learning student in mind. It is presented in a user-friendly format using a clear, lucid language. Each unit contains an Introduction and a list of Objectives to prepare the student for what to expect in the text. At the end of each unit are a Summary and a list of Key Words, to aid in recollection of concepts learnt. All units contain Self Assessment Questions and Exercises, and strategically placed Check Your Progress questions so the student can keep track of what has been discussed.

BLOCK - I
EVOLUTION OF MONEY AND CURRENCIES

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UNIT 1 MONEY

Structure

1.0 Introduction
1.1 Objectives
1.2 Definition, Concept and Functions
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1.0 INTRODUCTION

Money, as we know it today, is the result of a long process. At the beginning, there was no money. People engaged in barter, the exchange of merchandise for merchandise, without value equivalence. This elementary form of trade prevailed at the beginning of civilization, and may be found today among people of primitive economies, in regions where difficult access makes money scarce and, even in special situations, where people barter items without regard for their equivalence in value.

Some commodities, for their utility, came to be more sought than others are. Accepted by all, they assumed the role of currency, circulating as an element of exchange for other products and used to assess their value. This was the commodity money. Salt was another commoditymoney, difficult to obtain, mainlyin the interior part of continents, also used as a preservative for food. Later, commodities became inconvenient for commercial trades, due to changes in their values, the fact of being indivisible andeasilyperishable, therefore checkingtheaccumulation of wealth.

As soon as man discovered metal, it was used to made utensils and weapons previously made of stone. For its advantages, as the possibility of treasuring, divisibility, easy of transportation and beauty, metal became the main standard of value. It was exchanged under different forms. Metal items came to be very valued commodities. As its production required, in addition to knowledge of melting, knowing where the metal could be found in nature, the task was not at the reach of everyone. The increased value of these objects led to its use as money and the circulation as money of small-scale replicas of metal objects. The first metals used in coinage were gold and silver. Employment of these metals happened for their rarity, beauty, immunity to corrosion, economic value, and for old religious habits.

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In the Middle Ages, the keeping of values with goldsmiths, persons trading with gold and silver items, was common. The goldsmith, as a guaranty, delivered a receipt. With time, these receipts came to be used to make payments, circulating from hand to hand, giving origin to paper money. In this unit, we will study about the meaning, functions and significance of money.

1.1 OBJECTIVES

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

- Understand the concept of money
- Discuss the functions of money
- Explain the significance of money

1.2 DEFINITION, CONCEPT AND FUNCTIONS

Money can be defined as anything that is generally acceptable as a means of exchange and that at the same time acts as a measure and a store of value. The most important function of money is to act as a medium of exchange. There are many theories related with money such as quantity theory of money and Keynesian theory of money.

Inflation, demand pull and cost push are also important components of money and its effect on the society. The effects of inflation are generally seen in a broad way.

1.2.1 Meaning, Functions and Significance

Money can be anything which is normally and generally acceptable as a medium of exchange or as a means of payment for the settlement of all the transactions.

Various things have served as money at different times and places. They have varied from Cowrie Shells, goats, cows and rice to silver and gold pieces and coins, paper currency notes and demand deposits of banks.

Meaning of Money

Money can be described as anything that is generally acceptable as a means of exchange and that at the same time acts as a measure and a store of value. It is that by delivery of which debt contracts and price contracts are discharged, and in the shape of which general purchasing power is held.

There are four approaches to define the money:

1. Conventional approach
2. Chicago approach
3. Gurley and Shaw approach
4. Central Bank approach

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Difficulties of barter system

In the past, transactions were done with by exchanging goods or services. This system of exchange was known as barter system. At that time there was no acceptable commodity of payment to purchase another commodity that was depended on the demand of another person. There were many difficulties in the barter system. Some of them are as follows:

- Lack of standard unit of account
- Double coincidence of wants
- Impossibility of subdivision of goods

According to this system, a person who wanted to have a cow had to locate another person who offered to give up the cow and who was willing to accept in exchange the goods offered by him.

Functions of Money

Functions of money can be divided into following parts:

- **Primary functions:** These functions can be further divided into the following:
  - **Medium of exchange:** Money has made the exchange of goods and commodities quite simple.
  - **Measure of value:** Money is the valuation of all the available goods and services within the economy. It serves as a measuring rod for goods and services.
- **Secondary function:** Money can be further subdivided into the following parts:
  - **Standard of deferred payments:** Money serves as a unit in terms of which deferred payments is stated. Deferred payments are those payments which are to be made in the future.
  - **Store of value:** Saving is a basic human nature. A person saves some part of the income for future uncertainty. It is therefore, essential that the goods chosen as money should be such that can be easily stored without deterioration or wastage.
  - **Transfer of Value:** Acceptability and moveability of money has made the transfer of movable and immovable assets very simple.
- **Contingent functions:** They are those functions that are done only in some specific conditions with the help of money like, basis of credit, distribution of social income, equalizations of marginal utilities and liquidity of property.
  - **Basis of credit:** This modern era is known as the era of credit, but the base of credit is money. You cannot imagine credit or credit creation without the help of money.

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- **Distribution of social income:** For the production process, you need all the factors of production like, land, labour, capital, raw material and entrepreneurship. It is mandatory to pay to all the factors of production for their contribution in the production process.
- **Liquidity of assets:** Money provides the liquidity to all movable or immovable assets of an individual. No one can sell or purchase property (immovable assets) without the help of money.

Significance of Money

Some of the most important advantages of money are as follows:

- Money facilitates exchange.
- Money promotes trade.
- Money leads to division of labour and specialization.
- Money promotes saving.
- Money helps the economy to come out from recession.
- Money helps in making transaction.

1.3 ANSWERS TO CHECK YOUR PROGRESS QUESTIONS

1. There are many theories related with money such as quantity theory of money and Keynesian theory of money.
2. In the past, transactions were done with by exchanging goods or services. This system of exchange was known as barter system.

1.4 SUMMARY

- Money can be defined as anything that is generally acceptable as a means of exchange and that at the same time acts as a measure and a store of value. The most important function of money is to act as a medium of exchange.
- Money can be described as anything that is generally acceptable as a means of exchange and that at the same time acts as a measure and a store of value. It is that by delivery of which debt contracts and price contracts are discharged, and in the shape of which general purchasing power is held.

- Money is the valuation of all the available goods and services within the economy. It serves as a measuring rod for goods and services.
- Acceptability and moveability of money has made the transfer of movable and immovable assets very simple.
- For the production process, you need all the factors of production like, land, labour, capital, raw material and entrepreneurship. It is mandatory to pay to all the factors of production for their contribution in the production process.
- Money provides the liquidity to all movable or immovable assets of an individual. No one can sell or purchase property(immovable assets) without the help of money.
- Money facilitates exchange, promotes trade, leads to division of labour and specialization, promotes saving, helps the economy to come out from recession and also helps in making transaction.

1.5 KEY WORDS

- **Inflation:** It refers to the general increase in prices and fall in the purchasing value of money.
- **Liquidity:** It refers to the cash.
- **Recession:** It is a period of temporary economic decline during which trade and industrial activity are reduced, generally identified by a fall in GDP in two successive quarters.

1.6 SELF ASSESSMENT QUESTIONS AND EXERCISES

Short-Answer Questions

1. Name the four approaches to define money.
2. What were the difficulties of the barter system?

Long-Answer Questions

1. Explain the functions of money.
2. Discuss the significance of money.

1.7 FURTHER READINGS

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UNIT 2 PAPER CURRENCY

Structure

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2.1 Objectives
2.2 Systems of Note Issue
2.2.1 Gold Standard
2.3 Answers to Check Your Progress Questions
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2.0 INTRODUCTION

In British India, the system of note issue commenced with the Paper Currency Act of 1861 which gave the Government the monopoly of note issue in India. The management of paper currency across the geographical expanse of the Indian sub-continent was a task of considerable proportions. Initially the Presidency Banks were appointed as agents to promote the circulation of these notes in view of their existing infrastructure. The Act of 1861 authorised the Presidency Banks to enter into agreements with the Secretary of State for becoming agents for the issue, payment and exchange of promissory notes of the Government of India. The problem of redemption of these notes over vast expanses of the Indian sub-continent led to the concept of 'Currency Circles', where these notes were legal tender.

These Currency Circles increased in number as the Government progressively took over the work. The agency agreements with the Presidency Banks were finally terminated in 1867. The Management of Paper Currency was subsequently, in turn, entrusted to the Mint Masters, the Accountant Generals and the Controller of Currency.

This unit specifically deals with the paper currency.

2.1 OBJECTIVES

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

- Understand the concept of note issue
- Examine the aspects of note issue and the state
- Analyse the importance of note issue and the Central Bank
- Explain the principles and systems of note issue

- Describe the gold standard system and Rate of Exchange under the Gold Standard System

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2.2 SYSTEMS OF NOTE ISSUE

Although the origin of central banking dates back to 1894, when the 'the Governor and the Company of the Bank of England', the present day Bank of England, was established, the art of central banking assumed new dimensions only during the 20th century. Central banking is in fact essentially a 20th century phenomenon. The earlier institutions were, by and large, banks of issue with the sole or principal right of note issue. Modern central banking techniques were unknown to them. Theywere not verydifferent from other existing institutions doingbanking business except for the special relations which they had with their respective governments. It was only through a process of trial and error that they come to occupy the pivotal and strategic status which they enjoy in the present day monetary and banking structure.

Even at the beginning of the 20th century, manycountries were still without central banks. The First World War and the consequent chaotic monetaryconditions brought home to these countries the imperative necessity of establishing a centralized institution capableof creating and maintainingequilibrium in the monetary sphere. The International Financial Conference held at Brussels in September 1920 pointed out the urgency of establishing a central bank in those countries which had not yet established a central bank. This conference resolved that in countries where there is no central bank of issue, one should be established. The Genoa Conference, in the spring of 1922, also emphasized the importance of a central bank as an agency to correct the financial disequilibrium and to promote international cooperation in the monetary world.

There was a welcome reception to these advices throughout the world. The next three decades saw many countries equipping themselves with central banks. In 1900, there were only 18 central banks whereas now there are 172. These central banks have drawn their statutes in such a manner as to give novel meanings to central banks, of course, drawing inspiration from the experiences of the older central banks. The dynamic changes in the economic organism of each country raised the status of its central bank from the position of a bank of issue to that of a leader and symbol of economic development. Thus, the importance of central banking institutions has gained universal recognition and theynow occupya unique position in the economic map of everycivilized country. It took nearlythree centuries for the 'art of central banking' to attain the present day importance. Nevertheless, it would not be correct to say that central banking has attained its full growth. Indications are that the role of central banks is continually expanding. In the words of De Kock, 'central banks have developed their own code of rules and practices, which can be described as 'the art of central banking' but which, in a changing world, is still in the process of evolution and subject to periodical adjustment'.

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Functions of a Central Bank

It is difficult to lay down any hard and fast rule regarding the functions of a central bank. The powers, the range of functions and the organizational set up of central banks vary from country to country. On the one hand, one sees the state-owned and state-controlled Bank of England which follows the centralized system of central banking. At the other extreme, there is the American system of Federal Reserve Banks owned by the Member Banks and coordinated by the Federal Reserve Board, following the decentralized system of central banking. However, a careful study into the operative techniques of the various central banks would enable us to draw certain broad conclusions as to the general functions of a central bank.

One of the earliest of the functions to be discharged by a central bank is that of acting as a bank of issue. In addition, it is a controller of currency; a bankers' bank and lender of the last resort, an agent, advisor and banker to the government, a custodian of the nation's metallic reserves, etc. In this connection, the observations made by the Governor of the Bank of England before the Royal Commission on Indian Currency (1926) are highly illuminating. According to him, a central bank should have the sole right of note issue. It should be the sole channel for the output and intake of legal tender currency. It should be the holder of all government balances, the holder of the reserves of the other banks in the country. It should be the agent, so to speak, through which the financial operations, at home and abroad, of the government would be performed. It should further be the duty of a central bank to effect. As far as it could, suitable contraction and expansion, in addition to aiming generally at stability, and to maintain that stability within as well as without. Whenever necessary, it should be the ultimate source from which emergency credit might be obtained in the form of discounting of approved bills or advances on approved bills or advances on short-term securities, or government paper.

The nature of these functions points out one basic fact, namely, that central banking is entirely different from commercial or other branches of banking and that its main aim is to serve in the public interest and not to secure profits. The functions of a central bank and the obligations resting upon it are of a very special character calling for skill, experience and judgment of a kind different from those which must be possessed by commercial and other branches of banks. It is true that no banker can neglect the rules of prudence and safety; but the object of a commercial banker is to make a profit. The situation of a central bank is such that it must often undertake operations which are not only profitable, but also result in losses. Its aim must be the economic welfare of the country.

Monopoly of Note Issue

An important function of a central bank is the issue of legal tender currency. The main reasons for the concentration of note issue in a central bank may be found in the necessity of bringing about uniformity in the note circulation of a country and of

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avoiding the anomaly of over-issue by many banks established with the primary motive of securing profits. Further, the monopoly enjoined by a bank, which has close connections with the state, confers on the notes a distinctive prestige. These notes are capable of commanding public confidence. Above all, the very basis of monetary management is closely correlated with the capacity of a central bank to vary the total amount of legal tender currency according to the requirements of the productive sectors of the economy. Thus, it invariably follows that a central bank, which is endowed with the necessary powers of monetary management, must be equipped with the monopoly of note issue.

However, as an issuer of currency, the role of the central bank in the future could be made complicated if not redundant, by the evolution of money substitute or digital money. Whether national currency itself will continue to be as important as it is now is another issue. In this connection, it is relevant to note that 'euro' has heralded the era of regional currencies.

Note Issue and the State

The separation of note issue from the hands of the state has been advocated mainly because of the danger of over-issue. According to Kisch and Elkin, 'if the government itself has the right of note issue, either alone or in association with one or more banks, political considerations and pecuniary needs of the state rather than considerations of a sound monetary economy are likely sooner or later to become the determining factor.' Again, 'a state issue is likely to be unduly inelastic if the government of the day keeps to the paths of financial virtues, but all too elastic if the government finding itself in pecuniary difficulties is unable to resist the attractions of the printing press.' Therefore, instead of the state monopolizing the note issue, it would be better if that right is entrusted with the central bank, subject to the overall supervision of the state. This would facilitate the function of the central bank in the field of monetary management. It is true that the state can bring pressure upon the central bank for an over-issue. But the resistance which is usuallyoffered by the central bank against unsound monetaryand financial policies on the part of the state is at least one advantage in favour of the central bank being the issuer of notes.

Principles of Note Issue

There are two different schools of thought regarding the principle of note issue, viz., the currency principle and the banking principle. According to the currency principle, the amount of legal tender currencyshould be limited to the gold reserves kept by a central bank. This assumes full convertibility of currency. The main advocates of this principle were Sir Robert Peel, Lord Overstone and Colonel Torrens of England. The Peel's Act of 1844 in England was the outcome of this principle. The supporters of this principle hold that currency, under such a system, will expand and contract in the same manner as it would have expanded or contracted had metallic money been in circulation. Thus, the currency principle

assures maximum safety for the currency. Nevertheless, it lacks elasticity. The supply of currency is absolutely tied down to the supply of gold, irrespective of the demands of trade and industry. Further, the principle does not take the power of the banks to create credit into account. In short, the currency principle may seem simple and intelligible to those who ignore the existence of credit, and the domestic demand which makes a larger circulation desirable at some periods than others.

Against this is the view held by the advocates of the banking principle. According to them, there is no need to keep a hundred per cent reserves against the notes issued. Such a system would impair the productive capacityof the nation by making note issue inelastic. However, the supporters of this principle insist that the quality of notes should be maintained by assuring convertibility of notes. The great merit of this principle is that note issue, under this system, will correspond with the requirements of trade and industry. In other words, it will provide the country with an elastic currency, adequate in volume to the changing needs of the people. Further, guarantee as to convertibility will act as a regulator of note issue. The danger of over-issue is minimized to almost nil because notes which are in excess of the requirements of trade and industry will be returned to the bank of issue for conversion. In this connection, an important defect of this principle may be pointed out. For assuring convertibility of notes, the bank of issue must keep at least a small percentage of the total notes issued as reserves. If the over-issue exceeds these reserves, the bank of issue will find it impossible to convert the excess notes which are returned. An example may make the point more clear.

Suppose the total amount of note issue is₹10,000 and gold reserves worth ₹100 is kept by the bank of issue. According to our foregoing argument, any over-issue of notes will be returned to the bank of issue for conversion. Let us assume that the bank of issue has issued additional notes, in excess of the requirements of trade and industry, to the order of₹150. Naturally, notes amounting to ₹150 will be returned to the bank of issue for conversion. At this stage the issuing bank is confronted with the problem of conversion. Its reserves amount to only ₹100 whereas notes returned for conversion amount to₹150. Thus, the danger of over-issue will make the system of note issue inconvertible followed by loss of public confidence and monetary instability.

In conclusion, it may be observed that both these principles are not worthy of adoption as they are. It is necessary to provide elasticity to the notes in circulation without affecting adverselypublic confidence. In a certain sense, banking principle assures elasticity and currency principle assures public confidence. At the same time, the former exposes the note issue to the serious risk of monetary instability and the latter makes it inelastic.

Systems of Note Issue

By coordinating the advantages of the banking principle and the currency principle, various systems of note issue have been evolved by different countries, such as the

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partial fiduciarysystem, maximum fiduciary system, proportionate reserve system, minimum reserve system and foreign exchange reserve system.

Under the partial fiduciary system, a fixed amount is laid down by law which need only be covered by government securities. Notes issued above this amount must be fully backed by gold. England was the first country to adopt this system under the Peel's Act of 1844. The declared purpose of the Act was 'to cause our mixed circulation of coins and bank notes to expand and contract, as it would have expanded and contracted under similar circumstances had it consisted exclusively of coins.' The purpose of fixing the fiduciary issue, i.e., the amount of notes to be covered by government securities only, was to economise that amount of gold without impairing the convertibilityof notes. The fiduciaryissue was arrived at with regard to the smallest amount which would always remain in circulation. This method was subjected to severe criticism. According to the critics, the system was not capable of satisfying the needs of trade and industry, and as such it lacked elasticity. On the other hand, the supporters of the system contended that it was capable of commanding public confidence by ensuring full convertibility of notes and avoiding the danger of over-issue.

The inelastic nature of the system was clearly evidenced by subsequent events. In 1928, the Treasury was given the power to increase the fiduciary issue, which it still retains subject to its notification to the Parliament. In other words, under this system (maximum fiduciarysystem), a flexible maximum is laid down up to which notes maybe issued without gold cover. Thus, the system ensures elasticity and makes the supplyof moneycoincide with the requirements of trade and industry instead of tying it to the supply of gold. However, the system is criticized on the ground that it facilitates inflation and exposes the currencyto the danger of monetary instability.

Another system of note issue was prevalent in the USA between 1866 and 1913. According to this system, each National Bank was authorized to deposit bonds of the Federal Government having 'circulation privilege', and then issue notes in its own name upon the security of the deposited bonds. The system, no doubt, assured the safety of bank notes but it lacked elasticity. The inelastic nature of the system was clearly evidenced by the panic of 1907, when people found it difficult to obtain sufficient quantity of circulating medium. Consequently, it was abandoned in 1913 in favour of the proportionate reserve system.

Under the proportionate reserve system, the central bank is obliged to keep a percentage of the total note issue in gold. The remainder should be covered by sound collateral securities. This system was first introduced in Germany, which provided for a minimum reserve of one-third of the notes in circulation. The remainder was to be covered by discounted paper having a maturity of not more than three months. Provision was also made for additional issue, in excess of the limits so fixed, subject to certain restrictions. This system was adopted in the USA in 1913 with minor modifications. Under the Federal Reserve Act of 1913, the

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Federal Reserve Banks were required to maintain gold reserves equal to 40 per cent of the face value of all federal reserve notes in circulation. In 1934, the Gold Reserve Act provided for the maintenance of reserves in gold certificates. These requirements were modified by the Act of 1945, which reduced the gold certificates reserve requirements from 40 per cent to 25 per cent.

This system has the great advantage of elasticity. It ensures an adequate supply of currency to meet the trade demands of the country without any awkward rigidity. The provision to cover the uncovered portion by collateral securities like discounted paper and government obligations facilitates the central bank to expand the note issue in accordance with the volume of business activities. Further, the minimum reserve requirement provides a limiting factor against over-issue. It is also capable of commanding public confidence. The system has become very popular because of its added merits, especially in those countries where new central banks have been established during the beginning of 20th century. In this connection, it maybe pointed out that the Hilton Young Commissionrecommended the suitability of this system for India.

However, the system is not wholly devoid of disadvantages. Locking up gold reserves has often been pointed out as a shortcoming of this system. At the same time, full convertibilityis not guaranteed because of the insufficiencyof reserves to redeem all the notes. As such reserves will not be available for conversion.

An extension of the above method may be found in the system of allowing the central bank to cover its note issue by foreign securities with or without a minimum percentage of gold reserves against notes and making the notes a first charge on all assets of the central bank. This system gives more freedom to the central bank.

Reserve Requirements and Currency Regulation

The necessity and purpose of any rigid reserve requirements against note issue under the present day circumstances have been questioned by many authorities. Do they in any way increase the confidence of the public in the currency? Or, do they in any way add to the security of the currency?

The purpose of covering the note issue by gold reserves is often stated as the desire on the part of the currency authorities to sustain public confidence in the domestic currency. However, it would not be correct to say that under the present day circumstances, people's faith in the currency is wholly dependent on the gold reserves kept against it. The bankruptcy of a modern central bank is almost impossible because the government of the countryis close behind the bank to help it whenever necessary. As early as 1870, Walter Bagehot observed in connection with the stability of the Bank of England, '… neither the Bank nor the Banking Department have ever had an idea of being "put into liquidation"; most men would think as soon of 'winding up' the English nation'. These remarks hold good even in the case of other central banks. The bankruptcy of a modern central bank is never

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likely except in the event of the bankruptcy of the national government itself. This popular belief of the people has been amply demonstrated by past experiences. For instance, the Bank of England transferred its entire gold holdings to the Exchange Equalisation Account at the outbreak of the World War. However, this did not precipitate loss of public confidence in the currency. Although the provision still remains that note issue over above the fiduciary limit must be fully backed by gold reserves, the limit of fiduciary is altered from time to time so as to make it equal to the needs of the nation. Thus, today the Bank of England issues notes without any gold backing or, at best, with negligible gold backing. The limit of fiduciary which remained at 80 million pounds sterling at the outbreak of the War (1939) was increased to 2,325 million pounds sterling in 1961. The fact that the Bank holds only a trifling amount of gold has not affected adversely the soundness of pound sterling. The reduction of reserve requirements of the Federal Reserve Banks in the USA, a country which possesses the largest stock of gold, from 40 per cent to 25 per cent in 1945 is another case in point. The changes made in the Reserve Bank of India Act may also be pointed out in this context. The Amendment Act of 1956 provided for the revaluation of gold and a shift from the proportionate reserve system to the minimum reserve system of note issue.

Another argument in favour of maintaining rigid reserve requirements is that such requirements will act as a brake on anyinflationary over expansion of currency bythe central bank. However, the success of a central bank in controlling inflationary pressures in the economy is mainly dependent on the overall monetary policy pursued by it rather than on the statutory gold reserves which it has to maintain. This is especially true from the point of view of the increasing popularity of bank credit. Moreover, if gold reserve requirements are rigidly fixed, the central bank will find it difficult to expand currency when it may do well to the nation as a whole. Further, the bank will find it difficult to discharge efficiently its function as a lender of the last resort.

2.2.1 Gold Standard

The gold standard is a monetary system where a country's currency or paper money has a value directly linked to gold. With the gold standard, countries agreed to convert paper money into a fixed amount of gold. A country that uses the gold standard sets a fixed price for gold and buys and sells gold at that price. Under the gold standard system, gold can be used as a medium of exchange and the transaction can be settled without difficulty since it is easy to find out the gold contents of a unit of each currency.

Rate of Exchange under the Gold Standard System

When a country is on the gold standard system, actual gold coins will be in circulation, or the currency note will be convertible into metallic gold by tendering it at the central bank. There will not be anyartificial restrictions in the movement of gold into or out of the country.

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When two countries are on the gold standard system, determination of the rate of exchange between their currencies is comparatively easy. It will be in proportion to the gold contents of one unit of one currency expressed in terms of the gold contents of one unit of the other currency. Let us assume that India and the US are on the gold standard. Further that one rupee contains one unit of gold of 11/12 fineness and one dollar contains 47.25 units of gold of the same fineness. Then the rate of exchange between the US dollar and rupee will be $1 = ₹47.25. This rate is known as the equilibrium rate of exchange or the 'mint par of exchange'. The mint par of exchange has been defined as 'the number of units of the one currency which should legally contain the same amount of pure metal as does, legally, a given number of units of the other currency'.

Limits to the Fluctuations in the Rate of Exchange under the Gold Standard System

The fluctuations in the rate of exchange under the gold standard system are limited. Even if the market rate of exchange is temporarily different from the mint par of exchange, it will always have a tendency to come back to the equilibrium level, viz., the mint par. Let us examine how the forces operate to make the market rate equal to the mint par.

Suppose, 'A' in India is importing goods worth $1,000 from the US. 'A' can settle this transaction either by sending 47,250 units of gold (assuming that the mint par is $1 = ₹47.25) or by purchasing $1,000 from an exchange dealer. The exchange dealer will be in possession of foreign exchange sold to him by exporters. Let us further assume that the exchange dealer quotes an exchange rate of $1 = ₹48. In other words, 'A' has to spend ₹48,000 to purchase $1,000. In that case, he will prefer to send 47,250 units of gold to the US, where the exporter in that country can change it for $1,000. This is because 'A' can purchase 47,250 units of gold with ₹47,250 whereas if he purchases $1,000 he will have to spend ₹48,000. This will have the effect of decreasing the demand for dollars in India, forcing the exchange dealers to bring down the market rate of exchange for dollars. This process will go on till the market rate becomes equal to the mint par.

This, however, is subject to one modification. Sending gold involves certain expenses like packing charges, shipping charges, loss of interest while gold is in transit, insurance charges, refining charges, etc. To continue the above example, if 'A' wants to send gold worth $1,000, he will have to buy 47,250 units of gold by spending ₹47,250. Then he will have to get it packed and send it by sea or air, thereby incurring freight charges. Further, he should see that the gold is refined so as to bring it on a par with the fineness of gold obtainable with the American monetary authorities. This involves refining charges. Again, during the course of transit, gold is locked up in an idle manner. Assuming that it takes one month for transportation of gold from India to the US, 'A' will be losing interest for ₹47,250 during that period. Furthermore, 'A' has to incur insurance charges in connection with the insurance of gold transported. Let us suppose, these expenses amount

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to ₹250. This means that to send gold worth $1,000, 'A' has to incur ₹47,500 in all. Thus, although the mint par of exchange is $1 = 47.25, the rate as far as 'A' is concerned works out to ₹47.50 when he uses gold as the medium of exchange. If the market rate of exchange is above this point, 'A' will prefer to send gold. This will be the case with other importers also. The resulting decrease in the demand for dollars will force the exchange dealers to bring down the market rate of exchange to $1 = 47.50. This point is known as the 'Gold Export Point' or the 'Upper Specie Point' from the point of view of India and the 'Gold Import Point' or the 'Lower Specie Point' from the point of view of the US. Likewise, there is a 'Gold Import Point' for India and a 'Gold Export Point' for the US. These points are known as the 'Gold Points' or the 'Specie Points'. To sum up, the equilibrium rate of exchange (or, the mint par of exchange) under the gold standard system is likely to fluctuate but these fluctuations are strictly limited to the gold export point and the gold import point, otherwise known as the specie points.

2.3 ANSWERS TO CHECK YOUR PROGRESS QUESTIONS

1. The International Financial Conference held at Brussels in September 1920 pointed out the urgency of establishing a central bank in those countries which had not yet established a central bank. This conference resolved that in countries where there is no central bank of issue, one should be established.
2. Central bank is a controller of currency; a bankers' bank and lender of the last resort, an agent, advisor and banker to the government and a custodian of the nation's metallic reserves.
3. The separation of note issue from the hands of the state has been advocated mainly because of the danger of over-issue.
4. Under the partial fiduciary system, a fixed amount is laid down by law which need only be covered by government securities. Notes issued above this amount must be fully backed by gold.

2.4 SUMMARY

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- Central banking is in fact essentially a 20th century phenomenon. The earlier institutions were, by and large, banks of issue with the sole or principal right of note issue.
- The International Financial Conference held at Brussels in September 1920 pointed out the urgency of establishing a central bank in those countries which had not yet established a central bank. This conference resolved that in countries where there is no central bank of issue, one should be established. The Genoa Conference, in the spring of 1922, also emphasized the importance of a central bank as an agency to correct the financial disequilibrium and to promote international cooperation in the monetary world.
- The dynamic changes in the economic organism of each country raised the status of its central bank from the position of a bank of issue to that of a leader and symbol of economic development. Thus, the importance of central banking institutions has gained universal recognition and they now occupy a unique position in the economic map of every civilized country.
- On the one hand, one sees the state-owned and state-controlled Bank of England which follows the centralized system of central banking. At the other extreme, there is the American system of Federal Reserve Banks owned by the Member Banks and coordinated by the Federal Reserve Board, following the decentralized system of central banking.
- One of the earliest of the functions to be discharged by a central bank is that of acting as a bank of issue. In addition, it is a controller of currency; a bankers' bank and lender of the last resort, an agent, advisor and banker to the government, a custodian of the nation's metallic reserves, etc.
- According to the Governor of the Bank of England before the Royal Commission on Indian Currency (1926) a central bank should have the sole right of note issue. It should be the sole channel for the output and intake of legal tender currency. It should be the holder of all government balances, the holder of the reserves of the other banks in the country. It should be the agent, so to speak, through which the financial operations, at home and abroad, of the government would be performed. It should further be the duty of a central bank to effect.
- It is true that no banker can neglect the rules of prudence and safety; but the object of a commercial banker is to make a profit. The situation of a central bank is such that it must often undertake operations which are not only profitable, but also result in losses. Its aim must be the economic welfare of the country.

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- An important function of a central bank is the issue of legal tender currency. The main reasons for the concentration of note issue in a central bank may be found in the necessity of bringing about uniformity in the note circulation of a country and of avoiding the anomaly of over-issue by many banks established with the primarymotive of securing profits. Further, the monopoly enjoined by a bank, which has close connections with the state, confers on the notes a distinctive prestige.
- However, as an issuer of currency, the role of the central bank in the future could be made complicated if not redundant, by the evolution of money substitute or digital money. Whether national currency itself will continue to be as important as it is now is another issue. In this connection, it is relevant to note that 'euro' has heralded the era of regional currencies.
- There are two different schools of thought regarding the principle of note issue, viz., the currency principle and the banking principle. According to the currencyprinciple, the amount of legal tender currencyshould be limited to the gold reserves kept by a central bank. This assumes full convertibility of currency. According to banking principle, there is no need to keep a hundred per cent reserves against the notes issued. Such a system would impair the productive capacity of the nation by making note issue inelastic.
- The great merit of this principle is that note issue, under this system, will correspond with the requirements of trade and industry.
- By coordinating the advantages of the banking principle and the currency principle, various systems of note issue have been evolved by different countries, such as the partial fiduciary system, maximum fiduciary system, proportionate reserve system, minimum reserve system and foreign exchange reserve system.
- Under the proportionate reserve system, the central bank is obliged to keep a percentage of the total note issue in gold. The remainder should be covered by sound collateral securities.
- The minimum reserve requirement provides a limiting factor against over-issue. It is also capable of commanding public confidence. The system has become very popular because of its added merits, especially in those countries where new central banks have been established during the beginning of 20th century. In this connection, it may be pointed out that the Hilton Young Commission recommended the suitability of this system for India.
- Today the Bank of England issues notes without any gold backing or, at best, with negligible gold backing. The limit of fiduciary which remained at 80 million pounds sterling at the outbreak of the War (1939) was increased to 2,325 million pounds sterling in 1961. The fact that the Bank holds only a trifling amount of gold has not affected adversely the soundness of pound sterling. The reduction of reserve requirements of the Federal Reserve Banks

in the USA, a country which possesses the largest stock of gold, from 40 per cent to 25 per cent in 1945 is another case in point.

- The fluctuations in the rate of exchange under the gold standard system are limited. Even if the market rate of exchange is temporarilydifferent from the mint par of exchange, it will always have a tendency to come back to the equilibrium level, viz., the mint par.

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2.5 KEY WORDS

- **Note issue:** It refers to the act by a government or bank of printing an amount of new paper money and making it available to use.
- **Digital money:** It is a currency that exists purely in digital form.

2.6 SELF ASSESSMENT QUESTIONS AND EXERCISES

Short-Answer Questions

1. Write a short note on the note issue and the state.
2. What is Rate of Exchange under the Gold Standard System?

Long-Answer Questions

1. Describe the currency principle and the banking principle.
2. Discuss the limits to the fluctuations in the rate of exchange under the Gold Standard System.

2.7 FURTHER READINGS

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UNIT 3 INDIAN CURRENCY SYSTEM

NOTES

Structure

3.0 Introduction
3.1 Objectives
3.2 Development and Problems
3.2.1 Post Independence
3.3 Answers to Check Your Progress Questions
3.4 Summary
3.5 Key Words
3.6 Self Assessment Questions and Exercises
3.7 Further Readings

3.0 INTRODUCTION

The Currency Department in RBI attends to the core statutory function of note and coin issue and currency management. This involves forecasting the demand for fresh notes and coins, placing the indent with four printing presses and mints, receiving supplies against those indents and distributing them through the 18 offices of the Bank, a wide network of currency chests, repositories and small coin depots. The Department also keeps an account of notes in circulation and also the stocks at RBI offices and currency chests. Currency notes reflect the nation's rich and diverse culture, her struggle for freedom and her proud achievements as a nation. With a view to bringing the identity closer to the cultural heritage of the country as also for showcasing her scientific advances, a new series of notes in a new design is being launched. The Government of India has the sole right to mint coins. The responsibility for coinage vests with the Government of India in terms of the Coinage Act, 1906 as amended from time to time. The coins are issued for circulation only through the Reserve Bank in terms of the RBI Act. In this unit we will study about the Indian currency system.

3.1 OBJECTIVES

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

- Explain the development of Indian currency system
- Discuss currency management undertaken by the RBI

3.2 DEVELOPMENT AND PROBLEMS

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The history of the Indian rupee traces back to Ancient India in circa 6th century BCE, ancient India was one of the earliest issuers of coins in the world. During the British Colonial Era, historically, the rupee was a silver coin. This had severe consequences in the nineteenth century when the strongest economies in the world were on the gold standard. The discovery of large quantities of silver in the United States and several European colonies caused the panic of 1873 which resulted in a decline in the value of silver relative to gold, devaluing India's standard currency. This event was known as "the fall of the rupee".

In 1898, the Indian Currency Committee or Fowler Committee was appointed bythe British-run Government of India to examine the currencysituation in India. They collected a wide range of testimony, examined as many as forty-nine witnesses, and only reported their conclusions in July 1899, after more than a year's deliberation. The committee stated the following:

The committee concurred in the opinion of the Indian government that the mints should remain closed to the unrestricted coinage of silver, and that a gold standard should be adopted without delay. They recommended (1) that the British sovereign be given full legal tender power in India, and (2) that the Indian mints be thrown open to its unrestricted coinage (for gold coins only).

These recommendations were acceptable to both governments, and were shortly afterwards translated into laws. The act making gold a legal tender was promulgated on 15 September 1899; and preparations were soon thereafter undertaken for the coinage of gold sovereigns in the mint at Bombay. This law was just to defraud Indian people, as gold sovereign coins were never minted in India. Following the independence of British India in 1947 and the accession of the princely states to the new Union, the Indian rupee replaced all the currencies of the previously autonomous states.

3.2.1 Post Independence

Under Section 22 of the RBI Act, the RBI has the sole right for the issue of currency other than one rupee notes and one rupee coins and subsidiary coins. As in the case of Bank of England, the RBI maintains two departments, viz., the Issue Department and the Banking Department. The notes are a liability of the Issue Department alone. The assets of the Issue Department which form the backing for the note issue are kept separate from those of the Banking Department. According to Section 33 of the RBI Act, the assets of the Issue Department against which bank notes are issued should consist of gold coin and bullion, foreign securities, rupee coins, Government of India securities and such bills of exchange and promissory notes payable in India and as are eligible for purchase by the Bank. Under the original Act of 1934, not less than 2/5th of the assets of the Issue Department were required to be held in gold coin, gold bullion or foreign securities.

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The value of gold coin and gold bullion was not allowed to fall below ₹40 crore. In order to facilitate the Second Five Year Plan, a change in the currency reserve position was brought about by the RBI (Amendment) Act, 1956. This Amendment Act provided for two changes in the monetary system, viz.:

1. The revaluation of gold reserves held by the RBI from the original very low price of ₹21.24 per tola to ₹62.50 per tola which was the rupee equivalent of the price agreed by the International Monetary Fund.
2. A shift from the Proportionate to the Minimum Reserve System with regard to the issue of currency.

Simultaneously with the revaluation of gold, the minimum reserve to be held in gold was fixed at ₹115 crore. According to the second change, there would be no limit to the volume of currency that could be issued by the RBI provided it maintained a minimum of ₹115 crore of gold and ₹400 crore of foreign exchange. There was a further provision in the Amendment Act that the foreign exchange could be allowed to fall below ₹400 crore up to a limit of ₹300 crore under certain conditions and with the previous approval of the Government of India.

In October 1957, the RBI Act was further amended. According to this amendment, the aggregate value of gold coin, gold bullion and foreign securities held in the Issue Department should not at any time be less than ₹200 crore, of which the value of gold coin and gold bullion should, at no time, be less than ₹115 crore. The provision to Section 37 stipulating a floor limit on the value of foreign securities to be held in the Issue Department at ₹300 crore was deleted. The net effect of the amendment, therefore, is that while the provision about gold reserves remains unaltered, the effective minimum limit for foreign securities will be ₹85 crore. Provision has also been made, as in other countries, for the suspension of the requirement regarding reserves of foreign exchange to meet unforeseen contingencies. It must, however, have gold equivalent to ₹115 crore.

Currency Management

As an extension to the above function, the RBI is entrusted with the task of currency management in India. Currently, it involves management of 3,800 crore pieces of currency notes valued at ₹2,33,000 crore. While currently 1,200 crore pieces are being printed every year, the printing capacity has been built up to a futuristic level of 1,800 crore pieces annually. The current position of supply of fresh notes is comfortable. Hence, the Bank is concentrating on faster and better distribution of notes and coins by augmenting its capacity to withdraw soiled notes from circulation and processing them in faster ways through increased mechanization and automation. Apart from maintaining adequate supply of fit notes in circulation and disposal of soiled notes, preventing counterfeiting of high denomination bank notes is another challenge faced by the RBI in the context of currency management. There are reports of organized counterfeiting from across the border. In order to combat this problem, the RBI has initiated a series of steps in cooperation with the

Central Government. These include, among others, strengthening the security features on the currency notes and launching awareness campaigns about the available identifiable features in genuine bank notes.

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3.3 ANSWERS TO CHECK YOUR PROGRESS QUESTIONS

1. In 1898, the Indian Currency Committee or Fowler Committee was appointed by the British-run Government of India to examine the currency situation in India.
2. RBI has initiated steps to combat counterfeiting of notes which include strengthening the security features on the currency notes and launching awareness campaigns about the available identifiable features in genuine bank notes.

3.4 SUMMARY

- During the British Colonial Era, historically, the rupee was a silver coin. This had severe consequences in the nineteenth century when the strongest economies in the world were on the gold standard. The discovery of large quantities of silver in the United States and several European colonies caused the panic of 1873 which resulted in a decline in the value of silver relative to gold, devaluing India's standard currency. This event was known as "the fall of the rupee."
- In 1898, the Indian Currency Committee or Fowler Committee was appointed by the British-run Government of India to examine the currency situation in India. They collected a wide range of testimony, examined as many as forty-nine witnesses, and only reported their conclusions in July 1899, after more than a year's deliberation.
- The Indian Currency Committee concurred in the opinion of the Indian government that the mints should remain closed to the unrestricted coinage of silver, and that a gold standard should be adopted without delay. They recommended (1) that the British sovereign be given full legal tender power in India, and (2) that the Indian mints be thrown open to its unrestricted coinage (for gold coins only).

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- The act making gold a legal tender was promulgated on 15 September 1899; and preparations were soon thereafter undertaken for the coinage of gold sovereigns in the mint at Bombay. This law was just to defraud Indian people, as gold sovereign coins were never minted in India. Following the independence of British India in 1947 and the accession of the princely states to the new Union, the Indian rupee replaced all the currencies of the previously autonomous states.
- Under the original Act of 1934, not less than 2/5th of the assets of the Issue Department were required to be held in gold coin, gold bullion or foreign securities. The value of gold coin and gold bullion was not allowed to fall below ₹40 crore. In order to facilitate the Second Five Year Plan, a change in the currency reserve position was brought about bythe RBI (Amendment) Act, 1956.
- In October 1957, the RBI Act was further amended. According to this amendment, the aggregate value of gold coin, gold bullion and foreign securities held in the Issue Department should not at any time be less than ₹200 crore, of which the value of gold coin and gold bullion should, at no time, be less than ₹115 crore.
- The RBI is entrusted with the task of currency management in India. Currently, it involves management of 3,800 crore pieces of currency notes valued at 2,33,000 crore. While currently 1,200 crore pieces are being printed every year, the printing capacity has been built up to a futuristic level of 1,800 crore pieces annually.

3.5 KEY WORDS

- **Tola:** It is a traditional Ancient Indian and South Asian unit of mass, now standardised as 180 troy grains (11.663 8038 grams) or exactly 3/8 troy ounce.
- **Amendment:** It refers to a minor change or addition designed to improve a text, piece of legislation, etc.
- **Counterfeiting:** It is a fraudulent imitation of something else.

3.6 SELF ASSESSMENT QUESTIONS AND EXERCISES

Short-Answer Questions

1. What did the Indian Currency Committee or Fowler Committee state?
2. What were the two changes provided by the RBI (Amendment) Act, 1956?

Long-Answer Questions

1. Describe the development of the Indian currency system.
2. Explain the currency management system the RBI.

NOTES

3.7 FURTHER READINGS

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UNIT 4 OVERVIEW OF MONEY

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Structure

4.0 Introduction
4.1 Objectives
4.2 Evolution of Money
4.3 Definition of Money
4.4 Functions of Money
4.5 Answers to Check Your Progress Questions
4.6 Summary
4.7 Key Words
4.8 Self Assessment Questions and Exercises
4.9 Further Readings

4.0 INTRODUCTION

Money has no actual value in itself. It can be a metal coin, a shell or a piece of paper. It has a symbolic value as it communicates the importance and trust that people keep on it. The value of money is derived by virtue of its functions, viz., as the unit of account, a medium of exchange, a store of value and a standard of deferred payments.

Bartering was a direct trade of goods and services but had a lot of issues. Gradually, a type of currency–involving easily traded items like animal skins, salt, and weapons developed over the centuries. These traded goods served as the medium of exchange. This trading system spread across the world. The introduction of moneyincreased the speed of conducting businesses. International trade got a boost due to the shift to paper money in Europe. The process of currencies buying was started by the banks and the ruling classes which created the first currency market. Money acts as a medium of exchange, a unit of account and a store of value. We will study more about the different approaches to the definition of money and its functions.

4.1 OBJECTIVES

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

- Discuss the evolution of money
- Understand the definition of money and its various aspects
- Describe the various approaches to the definition of money
- Explain the functions of money

4.2 EVOLUTION OF MONEY

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Money ranks first among man's most important inventions and its evolution through time is an epitome of the history of human civilization. Supporting this view, John Maynard Keynes has stated that 'money, like certain other elements in civilization, is a far more ancient institution than we were taught to believe some few years ago. Its origins are lost in the mists when the ice was melting, and may well stretch back into, the paradisaic intervals in human history of the interglacial periods when the weather was delightful and the mind free to be fertile of new ideas—in the Islands of the Hesperides or Atlantis or some Eden of Central Asia.'[1]

The serious shortcomings or inconveniences of the barter system convinced people of the great necessityof finding some alternative efficient method of managing the affairs of the economy. The too many arbitrarily fixed separate exchange ratios; the frequent waste of substantial time and effort in locating the persons and transactions requiring the double coincidence of wants; the want of some common measure of value and lack of a suitable store of value caused unbearable hardships to people. It did not perhaps matter much so long as people were satisfied with their primitive way of life and living. Barter was, however, outmoded as a way of life for those who were keen to grow and were impatient to conduct trade in many commodities.

The birth of money came as a multifold blessing to mankind. It was first introduced as the unit of account—*numeraire*—to do away with the necessity of having to state separately the value of each good and service in terms of the other goods and services creating an unmanageable number of separate exchange ratios even in a simple economy where people produced and consumed only a few goods and services. It was the ingenuity, perhaps, of some lazy man who was tired of remembering a needlessly large number of separate exchange ratios in a pure barter economy, who by seriously thinking to determine the values of different goods and services in terms of a single good or service whose value being determined in its own terms was a fixed unit, became the inventor of money which has showered numerous blessings on mankind. Thus, by acting as the unit of account—*numeraire*—the values of different commodities were stated in terms of some chosen central commodity—money—and the confusion resulting from a senselessly large number of arbitrarily determined separate exchange ratios was removed. For example, in a pure barter economy, to make the transactions possible even with as small a number of commodities as ten, it needed 45 separate exchange ratios. When everything is valued in terms of one commodity chosen as money, only nine separate exchange ratios emerge. Consequently, 45 is reduced to nine, as it were, by a magic wand. The magic becomes indeed astounding when the number of commodities meant for exchange is overwhelminglylarge. For example, if there are 10,000 commodities available for exchange, in the absence of money acting as the accounting unit there will be 49,995,000 separate exchange ratios.

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However, the moment money begins to function as an accounting unit or as a measuring rod, these vast exchange ratios are drastically reduced to only 9,999 separate exchange ratios.[2] The strategy worked and society moved out of the shackles of barter. The invention of money liberated the 'inferior' orders of people from servile or semi-servile conditions and substituted values expressed in terms of money for obligations expressed in terms of custom or tradition. Equating the birth of moneywith a great invention, Geoffrey Crowther has stated: 'Let us suppose that this one commodity is goat (as it is today among some East African tribes). Everything is valued in terms of the goat, and the terms of exchange between any pair of commodities can thus be easily established. A hunting-knife is worth ten goats, fifty bananas are worth one goat, five bushels of corn are worth two goats, a wife, if she is young and comely, is worth six goats and so on for everycommodity. To us this invention seems very simple. It is merely the application to the sphere of the value of the same idea that has produced the foot or the metre to measure length, the pound or gram to measure weight, the degree to measure temperature, and so forth. But at the time it was doubtless radical—the invention, perhaps of some lazy genius who found himself oppressed by the task of calculating how many bushels of corn should exchange for one tiger-skin, if three bushels of corn were equal to five bananas, twenty bananas to one goat and twenty goats to one tiger-skin. And it undoubtedly was an invention; it needed the conscious reasoning power of man to make the step from simple barter to money-accounting.'[3]

4.3 DEFINITION OF MONEY

The concept of money is very difficult to define. It belongs to the category of things which are not amenable to any single definition. It is partly so because money performs not one but four important functions in the economy with each function providing a criterion of moneyness and partly because these criteria are satisfied in different degrees by different assets. Since moneyness is at best a matter of degree, it is possible to draw only an arbitrary dividing line between money and the other non-money assets. Money is only one among many kinds of financial assets which consumers, business firms, governments and other economic units hold in their asset portfolios. However, the economists' emphasis on money *per se* is justified because unlike the other financial assets (savings bank deposits, government and corporate bonds) money is the essential ingredient in conducting most of the economic transactions in the economy. Furthermore, the demand for money, like that for an input, is a *derived* demand.

Money is a species of a large genus—one among the class of things which perform monetary functions in the economy. Some goods perform all the four essential monetary functions—act as the unit of account, a medium of exchange, a store of value and a standard of deferred payments–and no other, *e.g.*, paper currency, while other goods perform one or more monetary and non-monetary functions in the economy. The Venn diagram in Figure 4.1 clarifies the position. In the diagram, *A* is the class of things which perform one or more monetaryfunctions in the economy while *B* is a class of things, included in *A*, which perform all the four monetary functions in the economy. It is easier to understand what money consists of than to give any universally acceptable definition of money.As Harry G Johnson has rightly stated, the definition of money is one of the three unresolved issues in the monetary theory. Consequently, economists have been in open disagreement on the issue of defining money. According to Harry G Johnson[4] and Edgar L Feige[5], there are the following four important approaches to the definition of money:

1. Conventional Approach
2. Chicago Approach
3. Gurley and Shaw Approach; and
4. Central Bank Approach.

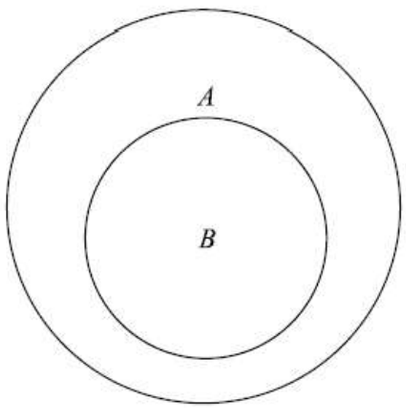

Fig. 4.1 *Venn Diagram of Money*

Each one of these four principal approaches to the definition of money may be briefly described as below.

1. **Conventional Approach:** The conventional approach to the definition of money is the oldest known approach. According to this approach, the most important function of money in society is to act as the medium of exchange. Money is what money uniquely does. It pays for all the goods and services that are transacted in the community. Consequently, anything is moneywhich functions generally as a medium of exchange in the economy. According to Ralph George Hawtrey, 'money is one of those concepts which, like a

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teaspoon or umbrella, but unlike an earthquake or a buttercup, are definable primarily bythe use or purpose which they serve'. Following this approach, Geoffrey Crowther has stated that money is *'anything* 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 measure and a store of value.'[6] The important words in this definition are those in italics. Thus, anything can be money if it is generallyacceptable by the communityin payment for anything. The only essential requirement, according to this definition of money, is the general acceptability of a thing as a means of payment.

John Maynard Keynes has defined money as 'that by delivery of which debt contracts and price contracts are *discharged* and in the shape of which General Purchasing Power is held.'[7] Dennis Holme Robertson has defined money as 'anything which is widely accepted in payment for goods, or in the discharge of other kinds of business obligations. If things which are intended to be money—the notes of certain governments—cease to be widelyaccepted in discharge of obligations, theycease to function as money.'[8] According to Raymond P Kent, 'money is anything that is commonly used and generally accepted as a medium of exchange or as a standard of value.'[9]

To be money, a thing need not itself be valuable. It must, however, be relatively scarce since it would hardly do if money could be plucked off every tree. Provided steps are taken to keep it relatively scarce and invariant in quantity, things as worthless as a scrap of paper or a tree leaf can serve as money. Historically, manything like cigarettes, banana shells, goat, metals, stones, etc., have served as money. Animal money had, however, the disadvantage of indivisibility and it was susceptible to disease, old age and death. It was also expensive to store. Minted coins, on the other hand, had the advantages of durability, divisibility and cognizability. Paper money also has some of the advantages of being a good money material.

Defined on the basis of its function as a medium of exchange, a nation's total moneystock would comprise those things which are generallyaccepted as the means of payment. This definition of moneyincludes onlythe currency and the demand deposits in commercial banks as constituting the supply of money, i.e., $M = C + D$. It excludes the time deposits in commercial banks[10] and postal savings bank deposits. The reason for excluding the time deposits from the aggregate money supply is that such deposits must be converted into either currency or demand deposits before these can be spent. Many other assets like short-term treasury securities, prime commercial papers, savings, bonds, etc., possess high liquidity in as much as these can be converted into cash or demand deposits with little loss or risk. Thus it is argued that if time deposits are included in the money supply there is no justification for excluding all these other near-liquid assets from the money supply,

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2. Chicago Approach: The Chicago approach to the concept of money is associated with the views of Professor Milton Friedman, his students, including David Meiselman, Phillip Cagan, David Fand, Anna Jacobson Schwartz and other monetary theorists of the University of Chicago. The Chicago economists have adopted a broader definition of moneybyincluding in it, besides the currency and chequeable or demand deposits, the commercial bank time deposits—fixed interest-bearing deposits placed with the commercial banks. Obviously, the Chicago approach to the definition of moneyconflicts with the conventional approach to the definition of money since the commercial bank time deposits are not directly spendable—these do not function directly as a medium of exchange in the economy. For example, if a person owns a fixed time deposit receipt worth ₹2,000 in a commercial bank and wants to use it to buy a refrigerator, he must first exchange his time deposit for currency or demand deposit which can be used to make the payment for making the purchase of the refrigerator. The economists of the Chicago School have advanced two reasons for including the time or term deposits placed with the commercial banks in their definition of money.

First, according to the Chicago School theorists, national income is more highly correlated with money as they have defined it than with money when it is alternatively defined. Since the Chicago monetary theorists have hypothesized that changes in the money supply bring about predictable changes in the national income, their definition of money, it is argued by these theorists, come closest to satisfying the empirical criterion of putting the monetary theory in a good light.[11] *Secondly,* the Chicago approach is based on the theoretical criterion of including in the definition of a single commodity all those things which are perfect substitutes for each other. It is argued by the supporters of the Chicago approach that the commercial bank time deposits are very close substitutes for currency and demand deposits. In practice, the time deposits are almost as readily available for spending as are the demand deposits or currency since most commercial banks make the time deposits available to their customers on demand, although they may require a waiting period of 30 to 60 days. In India, the time deposits are encashable when money is needed by the deposit holders provided they are willing to forgo a small percentage of interest income accrued on such deposits. Consequently, it is better to treat the time deposits in banks as if these were perfect substitutes for currencyand demand deposits rather than not to treat them so. The relatively timeless and costless ease with which time deposits can be converted into currency or demand deposits together with the universally held notion that a savings deposit account is 'money in the bank' lends credibility to the close substitutability argument. However, it is still correct to say that the time deposits held with the commercial banks are not perfect substitutes for the currency and demand

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deposits because had it been so people would not have preferred holding the zero interest-bearing currency and/or demand deposits to holding the positive interest-bearing time deposits in the banks.

3. **Gurley and Shaw Approach:** This approach, associated with the names of Professors John G Gurley and Edward S Shaw, was evolved through a series of articles and the book titled *Money in a Theory of Finance* by the two learned professors. According to the Gurley and Shaw approach, currency and demand deposits are just two among the many claims against the financial intermediaries.[12] They emphasize the close substitution relationship between the currency, demand deposits, time deposits, savings bank deposits, credit institutions' shares, bonds, etc., all of which are regarded as alternative liquid store of value by the public.

   The Gurley and Shaw approach to the definition of money is akin to the Chicago approach in its objective. Both the approaches include in money the means of payment and those assets which are close substitutes for the means of payment. Despite this similarity, the Gurley and Shaw approach is, however, different from the Chicago approach in its analysis. Unlike the Chicago approach which considers only the time deposits held with the commercial banks as close substitutes for the means of payment, the Gurley and Shaw approach includes in the close substitutes for the means of payment the deposits of and the claims against all types of financial intermediaries.

   It is necessary for taking account of the substitution relationship to define money supply as the weighted sum of currency, demand deposits and their substitutes, with the weights being assigned to each item on the basis of the degree of substitutability.[13] Thus a unit weight would be assigned to currency, demand deposits and their perfect substitutes, if any. Zero weight would be assigned to each one of those assets which were completely unrelated to currency and demand deposits. Weights ranging between one and zero would be assigned to those assets which were imperfect substitutes for currency and demand deposits. As an illustration of this approach we may assume that the public's total assets consist of (1)₹200 crore in the form of currency; (2)₹400 crore worth of bank shares; and (3)₹1,000 crore worth of ceiling fans such that public's total assets are worth₹1,600 crore. It may be further assumed that the asset demands for currency and for the ceiling fans are quite independent of one another while the degree of substitutability between the bank shares and currency is 0.50. The weighted sum of the money supply would be equal to₹400 crore or 25 per cent of the total assets because currency would be assigned a weight of one, bank shares a weight of 0.5 and the ceiling fans a weight of zero.

   The Gurleyand Shaw approach is superior to the Chicago approach because unlike the Chicago approach in which currency, demand deposits and time deposits all have been lumped together, the Gurley and Shaw approach

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refuses to lump the currency, bank deposits and close substitutes together; instead, it circumvents the problem of making arbitrary assumptions regarding the degree of substitutability by assigning the weights to different assets on the basis of their closeness to the means of payment. No effort has, however, been made by the authors of this approach to test the operational merit of the weighted sum definition of money. The concept has neither been used for testing the monetary theory nor for applying the monetary policy.

4. **Central Bank Approach:** This approach, which has been favoured by the central banking authorities, takes the broadest possible view of money as though it was synonymous with credit-funds lent to the borrowers. The supporters of the central bank approach have argued that similarity between money and the other means of financing the purchases justifies the use of a much broader concept of money measurable or immeasurable. As an example of the measurable concept, they mention the long established theory of the Federal Reserve Board according to which what matters is the total amount of credit outstanding with the quantity of money exercising its influence only because bank credit is a part of total credit. The example of the unmeasurable concept is the Radcliffe Committee's concept of liquidity of the economy and credit can be substituted for money without limit. Consequently, money is identified with the credit extended by a wide variety of sources. The reason for identifying money with credit used in the broadest possible sense of the term lies in the central bank's historic position that the 'total credit availability' constitutes the key variable for regulating the economy.

4.4 FUNCTIONS OF MONEY

It is inconceiveable to imagine a modern economy operating without the use of money. Money serves as the great instrument of commerce and industry in the economy by performing the four essential specific functions which have removed the manifold difficulties, more particularly the 'double coincidence of wants', of the pure barter system. These four functions of money emerge from its serving in the economy as:

(i) a unit of value or account;

(ii) a medium of exchange;

(iii) a standard of deferred payments; and

(iv) a store of value.

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The first two of these functions are usually called the *primary* functions of money while the remaining two are called the *derivative* functions of money as these are derived from the primary functions. We may now discuss each one of these four basic functions of money.

1. Money as Unit of Value or Account: This function of money has been variously called the 'unit of account', 'standard of value', 'common measure of value' and 'common denominator of value. The common idea present in all these terms is that money unit serves as a unit of measurement in terms of which the 'values' of all the goods and services exchanged in the economy are measured and expressed. As soon as a money unit, such as a rupee, dollar, or franc is adopted as a *numeraire* in the economy, the value of each commodity and service is expressed as a *price* which expresses the number of money units for which it will exchange or sell in the economy.

The introduction of the unit of account in terms of which the values of different goods and services were to be assessed and stated was as important for the development of economic life of the community as was the invention of the wheel for the development of technology. The existence of a common unit of account is quite indispensable for the emergence of an orderly pricing system which is essential both for rational economic calculation and choice by the individuals and for transmitting the economic information between individuals. For a rational individual choice, it is essential that different goods and services not otherwise comparable should be rendered comparable. By serving as a common unit of account—*numeraire*—money has made such a comparison possible because prices of different goods and services expressed in terms of money as a common unit of account are comparable since the worth of different goods and services is converted into a common scale for purposes of reckoning.

A common unit of account and prices stated in terms of this unit facilitates transmission of economic information between people and consequently extends the scope of specialization and division of labour beyond the narrow confines of the family or household. The prices of different goods and services stated in terms of money enable the individual to decide on what he should specialize as a seller and in what proportions he should buy and combine different goods as a buyer. The importance of money prices as the efficient means of economic communication in enabling the people in society to decide what to produce and on what to spend the proceeds of their economic efforts is realised only when these cease to fulfil this function. For example, in the German hyperinflation when money prices ceased to serve as the means of economic communication, the Germans were separated from one another living like solitary predatory beasts. Giving a graphic description of the state of Germans, Richard Hughes has stated thus: 'Money was rapidly ebbing away from between men, leaving them desperately incommunicable like men rendered voiceless by an intervening vacuum: millions still heaped on top of each other in human cities yet forced to live separate, each like some solitary predatory beast.'[14]

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No less than the households, the producers also depend on money to provide them the lines of communication. Theylook on the moneyprices of goods and services to furnish them vital information on the basis of which they make production decisions which maximize their profits. In the absence of money or when moneyceases to function as a unit of account, it becomes much more difficult and costly to obtain this information. Again, the German hyperinflation can be cited as an illustration. The German hyperinflation had created an environment in which the moneyprices and values had become virtuallymeaningless. Consequently, the German firms had to expand their office staff in order to deal with the greatly expanded task of procuring and interpreting the market information. It raised greatly the ratio of the non-productive to productive workers. For example, in the famous German firm of Siemens-Schuckert producing the electric goods this ratio had increased by 43 per cent.

It shows that the existence of moneyis a necessary condition for an efficient economic organization and development. Money prices are essential for a person to know in order to decide in which one of his many possible activities he would be most productive for the economy. He needs money prices in order to determine how best to perform this activity and how best to mix his own labour and know-how with the other factors of production. He must also know the money prices in order to choose the best form in which to consume his income and enjoy most his labour's fruits.

2. Money as Medium of Exchange: The speciality which distinguishes money from other commodities and places it in a separate class inherent in its role as the means of payment. Although it has no inherent power to satisfy human wants but by acting as the medium of exchange in the economy it commands power to purchase those goods and services which satisfy human wants. By performing its role as the medium of exchange in society, money removes the clumsiness, inconvenience and inefficiencywhich barter entails. The introduction of money as a medium of exchange in the economybydecomposing the single barter transaction into two separate transactions of sale and purchase eliminates the need for the double coincidence of wants. Consequently, much time and effort wasted in barter is saved. But what is more important is the fact that separation of a single barter transaction into two money exchange transactions involves more than a simple separation of sale and purchase elements which were implicit in the barter transaction. The use of money as a medium of exchange also necessarily separates the transactions both in time and place. It is no longer necessary for a seller of a commodity simultaneously to act also as a buyer of some other commodity and equal to the value of the commodity he wishes to sell.

It must be remembered that money will not be required as a means of payment unless we want to sell at one time and place and buy at some different time and place. It means that there is time-lag between our buying and selling activities. In the pure barter, buying and selling had to coincide both in time and

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place. By serving as the means of payment, money has relieved society of the colossal waste of time and effort which double coincidence of wants necessarily involved under the barter system. However, in order to serve as the means of payment money has also to serve as the temporary abode or store of the purchasing power.

The use of money as a medium of exchange and the consequent decomposition of every single barter transaction into two separate purchase and sale transactions allows for the use of division of labour in the decision-making process which yields returns in the form of increased rationality. It is possible for one to deal more effectively with the problem of how best to sell his services while free from the worry about how best to spend the proceeds. At the same time, however, one also needs to know generallyhow valuable, in terms of the spending power, the proceeds will be. Money is helpful on both these counts. Money enables one to deal with the separate problems of buying and selling one at a time. Furthermore, the use of money as a medium of exchange reduces the number of transactions required to achieve a given degree of specialization. Notwithstanding that a single barter transaction equals a sale and a purchase transaction, such persons trading who would be satisfied by a single barter transaction can very rarely be found because only in the extremely rare case would the goods and services which one person had to offer be exactly those goods and services which another person wanted to obtain. More generally, before a mutually satisfactory barter transaction became possible, a person had to engage in the whole complex chain of complementary barter transactions to acquire the bundle of goods and services that was most acceptable as a means of payment to the other party. Such chains of complementarybarter transactions were often longand complex involving the huge waste of time and effort. By splitting every single barter transaction into two separate money transactions of a sale and a purchase, the use of money by greatly reducing the number of transactions has effected substantial saving of time and effort. It has enabled people to sell at one place and time and to buy at another place and time. By serving as a medium of exchange in the economy, it has relieved the community of the vast inconvenience faced by it due to the double coincidence of wants inherent in the barter system. As a medium of exchange, money has opened the floodgates of free multilateral trade and the substantial advantages that flow from it.

The economy in time and effort which the use of money as the medium of exchange has made possible is quite substantial. The studyof hyperinflations, when money ceases to serve as a medium of exchange because people refuse to accept money as the means of payment and the economy reverts back to barter system, provides the basis for quantitative measurement of the welfare gain enjoyed by people byhavinga medium ofexchange which avoids theclumsiness and complexity of pure barter. According to Martin J Bailey, who estimated this gain or 'the cost to society of abandoning money entirely' for the seven different hyperinflations, ranged between 14 and 48 per cent of the national product.[15]

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The use of money as the medium of exchange by increasing the number of similar transactions increases competition thereby increasing the uniformity of the terms of contract. For example, when 2,000 people buy tea in a money economy, they make similar transactions in the same one market and by the sheer largeness of number, create a highly competitive situation on buyers' side in the market. In a barter economy, the same 2,000 people would have formed dozens of smaller, separate and non-competing groups depending on whether they paid for their tea with bread, wine, clothes, shoes or some other commodity. Consequently, in this process, competition would have greatly diminished causing the loss of collective welfare.

The above mentioned advantages of having money as a medium of exchange would be greater larger the number of people who accepted money as a medium of exchange and larger the territory in which it was accepted as the means of payment. The advantages of having a medium of exchange explain why every society sooner or later adopts a commodity particularly suitable for this purpose and uses it as money in addition to its other uses. These other uses are not essential for the moneyness[16] of money although these facilitate its gradual adoption by the society as a medium of exchange.

The value of money—its acceptance as the medium of exchange—is a matter of social convention. Each person accepts money as the means of payment because he is confident that others will also accept it in payment from him. I value money only because I know that others also do and everybody else thinks the same way. The circulatory chain involved means that in order to raise something to money's high status, it is necessary to establish a social convention requiring every member of society to accept that commodity as the means of payment. The social convention could be established through a formal pledge made by all members of the society to accept a certain agreed-upon commodity as the medium of exchange among themselves. Alternatively, such a social convention could be enforced by the legal authority of the state.

This is the basis of legal tender and the courts in the country enforce the acceptance of national currency in the discharge of all present and deferred payments. Asocial convention giving general acceptability to money as the means of payment could also be established if some important member of the group unilaterally accepts in payment a certain form of money. If he is important enough and his moneyis convenient enough, the other group members will follow suit. The use of the reserve currency wherebythe other countries use one important country's currencyas their external reserves is an example of establishing the social convention of accepting a particular form of money—the US dollar or British pound-sterling—in the discharge of payment obligations.

3. Money as Standard of Deferred Payments: As soon as money comes to be used as a unit of value and a medium of exchange, it is also inevitably used as the unit in terms of which future payments are stated. In a modern economy, a

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large number of transactions relate to future contractual payments which are stated in terms of money unit. Thus, by functioning as a unit in terms of which all future payments are expressed, money also serves as a unit or standard of deferred payments. However, money as a standard of deferred payments is satisfactory onlyif its value or purchasing power remains stable over time. When the purchasing power of money either increases or decreases through time, the interests of debtors or creditors are injured and people may mention certain safeguard clauses in future contractual obligations. For example, in Germanyduringhyperinflation the creditors insisted on mentioning the amount of debt payable in equivalent dollars or francs—currencies whose values were relatively stable— to protect themselves against the injury that may be caused to the creditors by the debtors by paying their debt moneyand interest in the fast depreciating German mark.According to the safeguard clause included in the agreement, the payment had to be made in the currency of the country of creditor's choice.

4. Money as Store of Value: It has been stated earlier that the introduction of moneyasa unit of accountseparates a single barter transaction implyingsimultaneous sale and purchase of equal value into two separate transactions of sale and purchase. This separation of a single barter transaction into two transactions enables one to act as a seller of one good at one place and time without being forced to act simultaneously as a buyer of another good. This separation, therefore, means separation both in time and place. Money as the medium of exchange has made it possible for people to sell goods and services at one place and time and to buy goods and services at another place and time. It is, however, not possible to do so unless it is also possible to store the means of payment, i.e., purchasing power during the intervening time. It is, therefore, obvious that money necessarily acts as a temporary store of value by virtue of its use as the medium of exchange. In other words, in order to perform the function of the medium of exchange, the value or purchasing power has to be stored in the form of money for a temporary period in order to enable people to buy and sell at different times and places. Consequently, money also has to function as the temporary abode of purchasing power in order to function efficiently as the medium of exchange in the economy.

The role or function of money as the permanent store of value—permanent abode of purchasing power—was least stressed by the early classical economists. Even the neoclassical economists, ignored the demand for money arising from wealth-holders' choosing to hold a part of their total assets in the form of money. It was argued by the classical economists that no one outside a lunatic asylum will hold his assets in the unproductive or barren form of moneyin the face of availability of alternative interest and dividend bearing assets such as riskless government bonds, corporate debentures and shares of the well-known companies. It was Keynes who first fully realized and drew attention to the significance of money's function as a permanent store of value for economic analysis and policy. The great significance of this role arises from the fact that only this function of money creates the demand for money which can be analysed in terms similar to those which are

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employed for analysing the demand for other goods and services. In its role as a permanent store of value, i.e., as one of the many forms in which assets may be held, money has many close substitutes in other productive assets—government bonds, quasi-government securities, shares and debentures of well-established corporations, bank deposits of various kinds, etc. Consequently, money has to compete with these assets and the proportion in which money is held together with these other assets depends on their differential advantages (such as yield) over money. The demand for holding moneyfor asset purposes is, therefore, a continuous and elastic function of the yield of other assets. This fact both provides a demand curve for money and renders its supply a policy tool with which the yields on other assets can be influenced.

In contrast to its function as the permanent store of value where it faces competition from other assets, it has no serious competitor in other assets in its role as a unit of account and a medium of exchange. Moreover, the use of money as a unit of account is independent of its supply.Although money's use as a medium of exchange is not independent of its supply but a shortage of supply as a medium of exchange, apart from causing inconvenience, does not cause ordinary market reactions to an excess of demand over supply such as raising the market rate of interest.

As the permanent store of value or asset, money has both certain advantages and disadvantages over its other competing yield-giving assets such as bonds, fixed deposits in banks, shares, debentures, house, land, furniture, etc. As the store of value, the chief advantages of these assets are that unlike money, these yield income in the form of interest, rent, profit or utility to their owners. They also sometimes yield capital gains to their owners. However, compared with money, these assets also suffer from certain disadvantages as store of value. *First,* their holding involves storage costs. *Secondly,* these may depreciate in money value. *Thirdly,* they are illiquid—lack in perfect liquidity or moneyness—because these are not acceptable as money. Consequently, all assets other than money lack in quick convertibility into money without involving some loss of value.

In face of the above mentioned advantages possessed by the other assets, if money is demanded as a permanent store of value in the community, it must be due to the comparative advantages of holding money which other assets lack. These advantagesare collectivelycalled liquidity, The main aspect of liquidityfollows from the fact that money acts as a medium of exchange in the economy. *First,* as an asset it commands the unique advantage of ready and immediate acceptance as the means of payment. *Secondly,* since it is accepted as the means of payment in the economy, as an asset its value can be easily predicted at some unspecified future period. *Thirdly,* as an asset its value in payment equals its value in receipt. It is so because money is perfectly liquid. In other words, as an asset money commands reversibility.All assets other than money lack perfect reversibility in the sense that their value in payment is not equal to their value in receipt. Real assets—land, consumer durables like car or television—lack reversibility the most. For

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example, the moment a car is driven out of the dealer's showroom, it loses in value because (abstracting from scarcityconditions) the purchaser will find it difficult to sell it at the price at which he had bought it a minute earlier. Even financial assets like the riskless government bonds do not command perfect reversibility as their purchase and sale are subject to certain brokerage cost although this may be quite small. Perfect liquidityarising from the general acceptability of a good as the means of payment in the economy gives rise to perfect reversibility. Since no asset other than money acts as the medium of exchange in the economy, it lacks in perfect reversibility. It is, however, necessary that in order to serve as the permanent store of value in the economy the purchasing power or the value of money should either remain stable or else should monotonically rise over time.

Finally, it is necessary to emphasize that money is anything that is generally accepted in exchange. In the past, astounding variety of money—ranging from sea shells and round stones to cigarette ends—have been used. The most essential feature of moneyis its general acceptability in the community or society in which it circulates.

4.5 ANSWERS TO CHECK YOUR PROGRESS QUESTIONS

1. The serious shortcomings or inconveniences of the barter system convinced people of the great necessity of finding some alternative efficient method of managing the affairs of the economy.
2. Money was first introduced as the unit of account to do away with the necessity of having to state separately the value of each good and service in terms of the other goods and services creating an unmanageable number of separate exchange ratios even in a simple economy where people produced and consumed only a few goods and services.
3. The fouressential monetaryfunctions—to act as the unit of account, a medium of exchange, a store of value and a standard of deferred payments.
4. According to Harry G Johnson and Edgar L Feige, there are the following four important approaches to the definition of money:
   (i) Conventional Approach
   (ii) Chicago Approach
   (iii) Gurley and Shaw Approach; and
   (iv) Central Bank Approach

5. The value of money—its acceptance as the medium of exchange—is a matter of social convention.
6. In order to serve as the permanent store of value in the economy, the purchasing power or the value of money should either remain stable or else should monotonically rise over time.

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4.6 SUMMARY

- The serious shortcomings or inconveniences of the barter system convinced people of the great necessity of finding some alternative efficient method of managing the affairs of the economy.
- The invention of money liberated the 'inferior' orders of people from servile or semi-servile conditions and substituted values expressed in terms of money for obligations expressed in terms of custom or tradition.
- by acting as the unit of account—*numeraire*—the values of different commodities were stated in terms of some chosen central commodity—money—and the confusion resulting from a senselessly large number of arbitrarily determined separate exchange ratios was removed.
- The concept of money is very difficult to define. It belongs to the category of things which are not amenable to any single definition. It is partly so because money performs not one but four important functions in the economy with each function providing a criterion of moneyness and partly because these criteria are satisfied in different degrees by different assets.
- It is easier to understand what moneyconsists of than to give any universally acceptable definition of money. As Harry G Johnson has rightly stated, the definition of money is one of the three unresolved issues in the monetary theory. Consequently, economists have been in open disagreement on the issue of defining money.
- John Maynard Keynes has defined money as 'that by delivery of which debt contracts and price contracts are *discharged* and in the shape of which General Purchasing Power is held.' Dennis Holme Robertson has defined money as 'anything which is widely accepted in payment for goods, or in the discharge of other kinds of business obligations. If things which are intended to be money—the notes of certain governments—cease to be widely accepted in discharge of obligations, they cease to function as money.' According to Raymond P Kent, 'money is anything that is commonly used and generally accepted as a medium of exchange or as a standard of value.'
- Historically, many thing like cigarettes, banana shells, goat, metals, stones, etc., have served as money. Animal money had, however, the disadvantage

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of indivisibility and it was susceptible to disease, old age and death. It was also expensive to store. Minted coins, on the other hand, had the advantages of durability, divisibility and cognizability. Paper money also has some of the advantages of being a good money material.

- The Chicago approach to the concept of money is associated with the views of Professor Milton Friedman and his students. The Chicago economists have adopted a broader definition of money by including in it, besides the currency and chequeable or demand deposits, the commercial bank time deposits—fixed interest-bearing deposits placed with the commercial banks.
- According to the Gurley and Shaw approach, currency and demand deposits are just two among the many claims against the financial intermediaries. They emphasize the close substitution relationship between the currency, demand deposits, time deposits, savings bank deposits, credit institutions' shares, bonds, etc., all of which are regarded as alternative liquid store of value by the public.
- It is necessary for taking account of the substitution relationship to define money supply as the weighted sum of currency, demand deposits and their substitutes, with the weights being assigned to each item on the basis of the degree of substitutability. Thus a unit weight would be assigned to currency, demand deposits and their perfect substitutes, if any.
- The Gurleyand Shaw approach is superior to the Chicago approach because unlike the Chicago approach in which currency, demand deposits and time deposits all have been lumped together, the Gurley and Shaw approach refuses to lump the currency, bank deposits and close substitutes together; instead, it circumvents the problem of makingarbitraryassumptions regarding the degree of substitutability by assigning the weights to different assets on the basis of their closeness to the means of payment.
- This approach, which has been favoured by the central banking authorities, takes the broadest possible view of money as though it was synonymous with credit-funds lent to the borrowers.
- Money is identified with the credit extended by a wide variety of sources. The reason for identifying money with credit used in the broadest possible sense of the term lies in the central bank's historic position that the 'total credit availability' constitutes the key variable for regulating the economy.
- Money serves as the great instrument of commerce and industry in the economy by performing the four essential specific functions which have removed the manifold difficulties, more particularlythe 'double coincidence of wants', of the pure barter system.
- As soon as a money unit, such as a rupee, dollar, or franc is adopted as a *numeraire* in the economy, the value of each commodity and service is

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expressed as a *price* which expresses the number of money units for which it will exchange or sell in the economy.

- A common unit of account and prices stated in terms of this unit facilitates transmission of economic information between people and consequently extends the scope of specialization and division of labour beyond the narrow confines of the family or household.
- The importance of money prices as the efficient means of economic communication in enabling the people in society to decide what to produce and on what to spend the proceeds of their economic efforts is realised only when these cease to fulfil this function.
- Existence of money is a necessary condition for an efficient economic organization and development. Money prices are essential for a person to know in order to decide in which one of his many possible activities he would be most productive for the economy. He needs money prices in order to determine how best to perform this activity and how best to mix his own labour and know-how with the other factors of production.
- It must be remembered that money will not be required as a means of payment unless we want to sell at one time and place and buy at some different time and place. It means that there is time-lag between our buying and selling activities.
- Money enables one to deal with the separate problems of buying and selling one at a time. Furthermore, the use of money as a medium of exchange reduces the number of transactions required to achieve a given degree of specialization.
- A social convention giving general acceptability to money as the means of payment could also be established if some important member of the group unilaterally accepts in payment a certain form of money.
- The use of the reserve currency whereby the other countries use one important country's currency as their external reserves is an example of establishing the social convention of accepting a particular form of money—the US dollar or British pound-sterling—in the discharge of payment obligations.
- In a modern economy, a large number of transactions relate to future contractual payments which are stated in terms of money unit. Thus, by functioning as a unit in terms of which all future payments are expressed, money also serves as a unit or standard of deferred payments.
- When the purchasing power of money either increases or decreases through time, the interests of debtors or creditors are injured and people may mention certain safeguard clauses in future contractual obligations.

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- It is, therefore, obvious that money necessarily acts as a temporary store of value by virtue of its use as the medium of exchange. In other words, in order to perform the function of the medium of exchange, the value or purchasing power has to be stored in the form of money for a temporary period in order to enable people to buy and sell at different times and places.
- The role or function of money as the permanent store of value—permanent abode of purchasing power—was least stressed by the early classical economists. Even the neoclassical economists ignored the demand for money arising from wealth-holders' choosing to hold a part of their total assets in the form of money.
- It was argued by the classical economists that no one outside a lunatic asylum will hold his assets in the unproductive or barren form of money in the face of availability of alternative interest and dividend bearing assets such as riskless government bonds, corporate debentures and shares of the well-known companies.
- The use of money as a unit of account is independent of its supply. Although money's use as a medium of exchange is not independent of its supply but a shortage of supply as a medium of exchange, apart from causing inconvenience, does not cause ordinary market reactions to an excess of demand over supply such as raising the market rate of interest.
- The main aspect of liquidity follows from the fact that money acts as a medium of exchange in the economy. *First,* as an asset it commands the unique advantage of ready and immediate acceptance as the means of payment. *Secondly,* since it is accepted as the means of payment in the economy, as an asset its value can be easily predicted at some unspecified future period. *Thirdly,* as an asset its value in payment equals its value in receipt.

4.7 KEY WORDS

- **Barter:** It is the exchange of goods or services for other goods or services without using money.
- **Numeraire:** It refers to an item or commodity acting as a measure of value or as a standard for currency exchange.
- **Security:** It refers to a thing deposited or pledged as a guarantee of the fulfilment of an undertaking or the repayment of a loan, to be forfeited in case of default.
- **Deferred payment:** It is temporary postponement of the payment of an outstanding bill or debt, usually involving repayment by instalments.

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4.8 SELF ASSESSMENT QUESTIONS AND EXERCISES

Short-Answer Questions

1. What is the conventional approach to the definition of money?
2. Why is the Gurley and Shaw approach superior to the Chicago approach?
3. State the function of money as standard of deferred payments.

Long-Answer Questions

1. Explain the concept of money.
2. Describe the Central Bank approach to money.
3. Illustrate the function of money as a medium of exchange.

4.9 FURTHER READINGS

Mishkin, F. 2008. *The Economics of Money, Banking, and Financial Markets*. New York: Pearson Addition Wesley.

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End Notes

[1] John Maynard Keynes, *A Treatise on Money*, Volume 1, 1930, p. 13

[2] It is derived from the following formula:

$$R = \frac{n(n-1)}{2}$$

where the terms *R* and *n* denote respectively the total number of separate exchange ratios and the total number of commodities exchanged in the economy.

[3] Geoffrey Crowther, *An Outline of Money*, Revised Edition, Reprinted 1958, p. 2–3.

[4] Harry G Johnson, 'Monetary Theory and Policy,' *The American Economic Review*, Volume 52, June 1962, p. 351–4.

[5] Edgar L Feige, *The Demand for Liquid Assets: A Temporal Cross-Section Analysis*, 1964, Chapter 1.

[6] Geoffrey Crowther, *op. cit.*, p. 20.

[7] John Maynard Keynes, *op. cit.*, p. 3.

[8] Dennis Holme Robertson, *Money*, 1922, p. 2–3.

[9] Raymond P Kent, *Money and Banking*, Fourth Edition, 1961, p. 4.

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[10] A time deposit can either be withdrawn only at the end of fixed period, or it can be withdrawn only by giving a fixed period notice, or in default of fulfilling any of these two conditions it can be withdrawn by obtaining permission and/or incurring a penalty. Such deposits are *quasi-money* or near-money and not money because although indistinguishable from money as assets, these do not function generally as a medium of exchange in the economy.

[11] Milton Friedman and David Meiselman, 'The Relative Stability of Monetary Velocity and the Investment Multiplier in the United States, 1997-1959', published in *Stabilisation Policies*, p. 165–8.

[12] John G Gurley and Edward S Shaw, *Money in a Theory of Finance*, 1960.

[13] John G Gurley, *Liquidity and Financial Institutions in the Post-war Economy*, (Study Paper 14), Joint Economic Committee, 86th Congress, 2nd Session, Washington, 1960.

[14] Richard Hughes, *The Fox in the Attic*, Penguin Paperback Edition, p. 114.

[15] Martin J Bailey, 'The Welfare Cost of Inflationary Finance', *The Journal of Political Economy*, Volume 64, 1956, p. 93–110.

[16] The main attribute of moneyness is liquidity. The main aspect of liquidity is the medium of exchange function—the ready and immediate acceptance of an asset as the means of payment by as many people and over as large a geographical area as possible. The second aspect of liquidity is the predictability of the value of money at some future unspecified point of time when it will be used in payment. The third important aspect of liquidity is reversibility—its value in payment should be equal to its value in receipt.

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BLOCK II
MONEY STANDARD FORM AND ROLE OF MONEY

UNIT 5 MONETARY STANDARDS

Structure

5.0 Introduction
5.1 Objectives
5.2 Meaning
  5.2.1 Types
5.3 Answers to Check Your Progress Questions
5.4 Summary
5.5 Key Words
5.6 Self Assessment Questions and Exercises
5.7 Further Readings

5.0 INTRODUCTION

A monetary standard is a set of rules and institutions that govern the supply of money in an economy. Such set of rules and institutions collectively constrains the production of moneydue to which the standard indirectly acts on prices.Amonetary standard may also affect the rate of growth of real economic output, but that depends on expectations. Monetary institutions may also affect other economic institutions, which themselves influence economic growth. In this unit, we will study about the monetary standard and its types.

5.1 OBJECTIVES

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

- Define monetary standard
- Discuss the types of monetary standards

5.2 MEANING

A monetary standard is a set of institutions and rules governing the supplyof money in an economy. These rules and institutions collectively constrain the production of money. Through its constraints on money creation, the standard indirectly acts on prices. A monetary standard may also affect the rate of growth of real economic output, but that depends on expectations. Monetary institutions may also affect other economic institutions, which themselves influence economic growth.

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5.2.1 Types

There are two types of monetary standards—one far more prevalent in developed economies than other. Monetary standards refer to the 'system' or 'framework' that controls or facilitates the movement of money. The following are the two monetary standards:

- Commodity standard
- Inconvertible 'managed' paper standard

1. The Commodity Standard

This standard exists where the value of monetary units equal the value of specific amounts of commodity (e.g., gold).

Example of commodity standards are:

- monometallic/metallic coin standards
- metallic exchange standard
- bimetallic standard

There are some pros and more cons. There are evidently problems with these standards since they have been discarded as the monetary standard of choice. One inherent problem for the bimetallic standard is described in Gresham's Law.

On one hand, it does restrain the government from excessively expanding the money supply because MS is driven by physical availability of metal not political experience. However, metal reserves may expand excessively, or conversely contract when the economy needs liquidity to grow.

Pros also include the intrinsic value of silver and gold. Cost of producing metals is inversely related to general level of prices (it provides stability to economic output and prices), however, the process may be too slow.

2. Inconvertible 'managed' paper standard

This monetary standard is created by the government. Another term given to it is 'fiat' money. This system only works because the government values the legal tender and the public accepts the standard. The public has to accept the standard since the paper itself isn't actually worth anything—it's an abstraction. It fails when the government does not exhibit proper economic restraint and responsibility (i.e. massive hyperinflation).

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5.3 ANSWERS TO CHECK YOUR PROGRESS QUESTIONS

1. A monetary standard is a set of institutions and rules governing the supply of money in an economy.
2. Two types of monetary standards are commoditystandard and inconvertible 'managed' paper standard.
3. Examples of commodity standards are - monometallic/metallic coin standards, metallic exchange standard and bimetallic standard.

5.4 SUMMARY

- A monetary standard is a set of institutions and rules governing the supply of money in an economy. These rules and institutions collectively constrain the production of money. Through its constraints on moneycreation, the standard indirectly acts on prices. A monetary standard may also affect the rate of growth of real economic output, but that depends on expectations.
- The commoditystandard exists where the value of monetary units equal the value of specific amounts of commodity (e.g., gold).
- Inconvertible 'managed' paper standard is created by the government. Another term given to it is 'fiat' money. This system only works because the government values the legal tender and the public accepts the standard.

5.5 KEY WORDS

- **Fiat money:** It is inconvertible paper money that is made legal tender by a government decree.
- **Intrinsic value:** It refers to the worthiness of an asset.
- **Hyperinflation:** It is the monetary inflation occurring at a very high rate.

5.6 SELF ASSESSMENT QUESTIONS AND EXERCISES

Short-Answer Questions

1. What are the pros and cons of commodity standard?

Long-Answer Questions

1. Describe monetary standard.

5.7 FURTHER READINGS

NOTES

Mishkin, F. 2008. *The Economics of Money, Banking, and Financial Markets*. New York: Pearson Addition Wesley.

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UNIT 6 FORMS OF MONEY

Structure

6.0 Introduction
6.1 Objectives
6.2 Qualities of a Good Money Material
6.3 Answers to Check Your Progress Questions
6.4 Summary
6.5 Key Words
6.6 Self Assessment Questions and Exercises
6.7 Further Readings

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6.0 INTRODUCTION

This unit deals with the "Gresham's Law" which is often stated baldly as "bad money drives good money out of circulation". Gresham's law was originally based on the composition of minted coins and the value of the precious metals used in them. However, the theory has been applied to the relative stability of different currencies' value in global markets since the abandonment of metallic currency standards. Today, the legal connections between currencies and precious metals have become more tenuous and finally been cut entirely. The use of paper money as legal tender means that the issuers of money are able to obtain seigniorage by printing or loaning money into existence at will as opposed to minting new coins. The coins minting is the most basic example of Gresham's law. Gresham explained to the queen that people were aware of the change and began separating the English shilling coins based on their production dates to hoard the coins with more silver which, when melted down, were worth more than their face value. Gresham observed that the bad money was driving out the good money from circulation. More examples of Gresham's law have been given in the unit.

6.1 OBJECTIVES

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

- Understand the difference between 'good' money and 'bad' money
- Discuss Gresham's Law

6.2 QUALITIES OF A GOOD MONEY MATERIAL

Gresham's law is an economic principle 'which states that when government compulsorily overvalues one money and undervalues another, the undervalued money will leave the country or disappear from circulation into hoards, while the overvalued money will flood into circulation'. It is commonly stated that 'bad

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money drives out good', but is more accurately stated: 'Bad money drives out good if their exchange rate is set by law.'

This law applies specifically when there are two forms of commodity money in circulation which are required by legal-tender laws to be accepted as having similar face values for economic transactions. The artificially overvalued money tends to drive an artificially undervalued money out of circulation and is a consequence of price control.

Gresham's law is named after Sir Thomas Gresham (1519–1579), an English financier during the Tudor dynasty. However, the law had been stated forty years before by Nicolaus Copernicus, so in Poland it is known as the **Copernicus-Gresham Law**. The phenomenon had been noted even earlier, in the 14th century, by Nicole Oresme. The fact of bad money being used in preference to good money is also noted by Aristophanes in his play *The Frogs*, which dates from around the end of the 5th century BC.

'Good' money and 'bad' money

'Good' moneyis money that shows little difference between its nominal value (the face value of the coin) and its commodity value (the value of the metal of which it is made, often precious metals, nickel, or copper.)

In the absence of legal-tender laws, metal coin money will freely exchange at somewhat above bullion market value. This is not a purely theoretical result, but may instead be observed today in bullion coins such as the South African Krugerrand, the American Gold Eagle, or even the silver Maria Theresa thaler (Austria). Coins of this type are of a known purity and are in a convenient form to handle. People prefer trading in coins rather than in anonymous hunks of precious metal, so they attribute more value to the coins. The price spread between face value and commodity value is called seignorage. Since some coins do not circulate, remaining in the possession of coin collectors, this can increase demand for coinage.

On the other hand, 'bad' money is money that has a commodity value considerably lower than its face value and is in circulation along with good money, where both forms are required to be accepted at equal value as legal tender.

In Gresham's day, bad money included any coin that had been debased. Debasement was often done by the issuing body, where less than the officially specified amount of precious metal was contained in an issue of coinage, usually by alloying it with a base metal. The public could also debase coins, usually by clipping or scraping off small portions of the precious metal. Other examples of 'bad' money include counterfeit coins made from base metal.

In the case of clipped, scraped, or counterfeit coins, the commodity value was reduced by fraud, as the face value remains at the previous higher level. On the other hand, with a coinage debased by a government issuer, the commodity value of the coinage was often reduced quite openly, while the face value of the debased coins was held at the higher level by legal tender laws.

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Examples of Gresham's Law

Silver coins were widely circulated in Canada (until 1968) and in the United States (until 1965 for dimes and quarters and 1971 for half-dollars). However, these countries debased their coins by switching to cheaper metals as the market value of silver rose above that of the face value. The silver coins disappeared from circulation as citizens retained them to capture the higher current or perceived future intrinsic value of the metal content over their face value, using the newer coins in daily transactions. In the late 1970s, the Hunt Brothers attempted to corner the worldwide silver market but failed, temporarily driving the price far above its historic levels and intensifying the extraction of silver coins from circulation.

The same process occurs today with the copper content of coins such as the pre-1997 Canadian penny, the US one-cent coin, and the pre-decimal UK copper pennies and halfpence. This also occurred even with coins made of less expensive metals such as steel in India.

Gresham's law states that any circulating currency consisting of both 'good' and 'bad' money (both forms required to be accepted at equal value under legal tender law) quickly becomes dominated by the 'bad' money. This is because people spending money will hand over the 'bad' coins rather than the 'good' ones, keeping the 'good' ones for themselves. Legal tender laws act as a form of price control. In such a case, the artificially overvalued money is preferred in exchange, because people prefer to save rather than exchange the artificially demoted one (which theyactually value higher).

Consider a customer purchasing an item which costs five pence, who possesses several silver sixpence coins. Some of these coins are more debased, while others are less so—but legally, they are all mandated to be of equal value. The customer would prefer to retain the better coins, and so offers the shopkeeper the most debased one. In turn, the shopkeeper must give one penny in change, and has every reason to give the most debased penny. Thus, the coins that circulate in the transaction will tend to be of the most debased sort available to the parties.

If 'good' coins have a face value below that of their metallic content, individuals may be motivated to melt them down and sell the metal for its higher intrinsic value, even if such destruction is illegal. As an example, consider the 1965 United States half dollar coins, which contained 40 per cent silver. In previous years, these coins were 90 per cent silver. With the release of the 1965 half dollar, which was legally required to be accepted at the same value as the earlier 90 per cent halves, the older 90 per cent silver coinage quickly disappeared from circulation, while the newer debased coins remained in use. As the price of bullion silver continued to rise above the face value of the coins, many of the older half dollars were melted down. Beginning in 1971, the US government gave up on including any silver in the half dollars, as even the metal value of the 40 per cent silver coins began to exceed their face value.

A similar situation occurred in 2007 in the United States with the rising price of copper and zinc, which led the US government to ban the melting or mass exportation of one-cent and five-cent coins, respectively.

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In addition to being melted down for its bullion value, money that is considered to be 'good' tends to leave an economy through international trade. International traders are not bound by legal tender laws as citizens of the issuing country are, so they will offer higher value for good coins than bad ones. The good coins may leave their country of origin to become part of international trade, escaping that country's legal tender laws and leaving the 'bad' money behind. This occurred in Britain during the period of the gold standard.

History of the concept

The law was named after Sir Thomas Gresham, a sixteenth century financial agent of the English Crown in the city of Antwerp, to explain to Queen Elizabeth I what was happening to the English shilling. Her father, Henry VIII, had replaced 40 per cent of the silver in the coin with base metals, to increase the government's income without raising taxes. Astute English merchants and even ordinary subjects would save the good shillings from pure silver and circulate the bad ones; hence, the bad money would be used whenever possible, and the good coinage would be saved and disappear from circulation.

Gresham was not the first to state the law which took his name. The phenomenon had been noted much earlier, in the 14th century, by Nicole Oresme. In the year that Gresham was born, 1519, it was described by Nicolaus Copernicus in a treatise called Monetae cudendae ratio: 'bad (debased) coinage drives good (un-debased) coinage out of circulation.' Copernicus was aware of the practice of exchanging bad coins for good ones and melting down the latter or sending them abroad, and he seems to have drawn up some notes on this subject while he was at Olsztyn in 1519. He made them the basis of a report in German which he presented to the Prussian Diet held in 1522 at Grudzidz, attending the session with his friend Tiedemann Giese to represent his chapter. Copernicus's Monetae cudendae ratio was an enlarged, Latin version of that report, setting forth a general theory of money for the 1528 diet. He also formulated a version of the quantity theory of money.

According to the economist George Selgin in his paper 'Gresham's Law':

> As for Gresham himself, he observed 'that good and bad coin cannot circulate together' in a letter written to Queen Elizabeth on the occasion of her accession in 1558. The statement was part of Gresham's explanation for the 'unexampled state of badness' England's coinage had been left in following the 'Great Debasements' of Henry VIII and Edward VI, which reduced the metallic value of English silver coins to a small fraction of what it had been at the time of Henry VII. It was owing to these debasements, Gresham observed to the Queen, that 'all your fine gold was conveyed out of this your realm.'

Gresham made his observations of good and bad money while in the service of Queen Elizabeth, with respect only to the observed poor quality of British coinage. The earlier monarchs, Henry VIII and Edward VI, had forced the people to accept debased coinage by means of their legal tender laws. Gresham also made his comparison of good and bad money where the precious metal in the money was the same metal, but of different weight. He did not compare silver to gold, or gold to paper.

6.3 ANSWERS TO CHECK YOUR PROGRESS QUESTIONS

1. Gresham's law is an economic principle 'which states that when government compulsorily overvalues one money and undervalues another, the undervalued money will leave the country or disappear from circulation into hoards, while the overvalued money will flood into circulation'.
2. 'Good' money is the money that shows little difference between its nominal value (the face value of the coin) and its commodity value (the value of the metal of which it is made, often precious metals, nickel, or copper).

6.4 SUMMARY

- Gresham's law is an economic principle 'which states that when government compulsorily overvalues one money and undervalues another, the undervalued money will leave the country or disappear from circulation into hoards, while the overvalued money will flood into circulation'. It is commonly stated that 'bad money drives out good', but is more accurately stated: 'Bad money drives out good if their exchange rate is set by law.'
- 'Bad' money is money that has a commodity value considerably lower than its face value and is in circulation along with good money, where both forms are required to be accepted at equal value as legal tender.
- In Gresham's day, bad money included any coin that had been debased. Debasement was often done by the issuing body, where less than the officially specified amount of precious metal was contained in an issue of coinage, usually by alloying it with a base metal. The public could also debase coins, usually by clipping or scraping off small portions of the precious metal.
- Silver coins were widely circulated in Canada (until 1968) and in the United States (until 1965 for dimes and quarters and 1971 for half-dollars).

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However, these countries debased their coins by switching to cheaper metals as the market value of silver rose above that of the face value. The silver coins disappeared from circulation as citizens retained them to capture the higher current or perceived future intrinsic value of the metal content over their face value, using the newer coins in daily transactions.

- If 'good' coins have a face value below that of their metallic content, individuals may be motivated to melt them down and sell the metal for its higher intrinsic value, even if such destruction is illegal.
- The good coins may leave their country of origin to become part of international trade, escaping that country's legal tender laws and leaving the 'bad' money behind. This occurred in Britain during the period of the gold standard.
- The earlier monarchs, Henry VIII and Edward VI, had forced the people to accept debased coinage by means of their legal tender laws. Gresham also made his comparison of good and bad money where the precious metal in the money was the same metal, but of different weight. He did not compare silver to gold, or gold to paper.

6.5 KEY WORDS

- **Debasement:** It is the action or process of reducing the quality or value of something.
- **Legal tender:** It refers to the coins or banknotes that must be accepted if offered in payment of a debt.
- **Bullion:** It refers to the gold or silver in bulk before coining, or valued by weight.

6.6 SELF ASSESSMENT QUESTIONS AND EXERCISES

Short-Answer Questions

1. Give examples of Gresham's law.

Long-Answer Questions

1. Differentiate between 'good' money and 'bad' money.

6.7 FURTHER READINGS

Mishkin, F. 2008. *The Economics of Money, Banking, and Financial Markets*. New York: Pearson Addition Wesley.

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UNIT 7 ROLE OF MONEY

NOTES

Structure

7.0 Introduction
7.1 Objectives
7.2 Capitalist, Socialist and Mixed Economies
7.3 Answers to Check Your Progress Questions
7.4 Summary
7.5 Key Words
7.6 Self Assessment Questions and Exercises
7.7 Further Readings

7.0 INTRODUCTION

An economic system is a set of devices and institutions that decide the manner and direction in which nation's resources are allocated in order to satisfy human wants. Capitalist economy, socialist economy and mixed economy are three types of economies on the basis of ownership.

In a capitalist economy, means of production are owned, controlled and managed by private individuals to generate profits with minimum interference of government. Economic freedom, automatic working, optimum use of resources and high standard of living are the merits of capitalist economy. The demerits of capitalist economy include inequalities of income and wealth and class struggle.

A socialist economy is an economic system in which means of production are owned by the entire society and operated and controlled by public authority. The merits of socialist economy are: no class struggle, no scope of classes, efficient utilisation of resources, balanced economic development, increase in productive efficiency, etc. The demerits of socialist economy are: loss of consumer's sovereignty, expenditure on planning, etc.

The economic system in which both public and private exercise economic control simultaneously is called mixed economy. The merits of mixed economy include optimum allocation of resources, economic and political freedom, rapid economic development, limited concentration of economic power, etc. The demerits of mixed economyare corruption andblack marketing, short -lived nature, inefficient operation, poor performance of public sector, etc. This unit will discuss the role of money in each of these economic systems.

7.1 OBJECTIVES

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

- Understand the concept of capitalistic, socialistic and mixed economy
- State the differences among capitalistic, socialistic and mixed economy

7.2 CAPITALIST, SOCIALIST AND MIXED ECONOMIES

NOTES

In the following section, the role of money in capitalist, socialist, and mixed economies has been discussed.

Importance of money in capitalist economy

Capitalism refers to a free enterprise economy. In this type of economy, competition and private ownership of property usually prevail and economic decisions are taken privately. Money plays an all important role in the smooth and proficient functioning of the capitalist system.

The features of capitalist economy may be listed as follows:

- It revolves around price mechanism, which, in turn, operates through money because all incomes and prices are expressed in terms of money.
- In this system, the consumers get their income in the form of money which gives them ready command over a variety of goods and services.
- A great benefit of money is that it helps the producers in discovering what people want and how much they want. This enables the producers to decide what they need to produce and in what quantities. This also helps them make the best use of the available productive resources.
- Extensive trade—both internal and international—is carried out through the medium of money.
- Money is very helpful in the process of distribution of national product among different factors of production in the form of rent, wages, interests and profit.
- Government receives income and makes payments through the medium of money.
- Moneyinfluences the operative forces bywayof its impact on investment, output, consumption and distribution of income.

Importance of money in socialist economy

Socialism, as an alternative to capitalism, refers to an economic system which is controlled and regulated bythe government. The government controls and regulates the economy with the objective of ensuring welfare and equality of opportunity to the people.

The advantages of money in socialist economy may be listed as follows:

- An important feature of socialist economy is that economic decisions are taken by the central planning authority. The fixation of prices is done by the planners; it is not left to the market forces. Thus, money performs an indirect role in socialist economy.

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- Moneyprovides a necessarylink between physical and financial planning. The purpose of financial planning is to provide necessary monetary resources for fulfilling the physical targets.
- The values of all products and services are expressed in terms of money.
- Buying and selling of all sorts is done through money.
- All payments are done through money.
- Moneyacts as the medium of savingand of the formation of cash reserves.
- Money acts as the instrument of distribution.
- Bonuses are paid to the workers in terms of money for inducing them to work hard.
- The individuals have the liberty to spend their money earnings on any consumption good of their choice.
- Moneyhelps the state in evaluating the economic activity of an enterprise.

Importance of money in a mixed and developing economy

Mixed economy is a mix of capitalism and socialism. It includes good features of both the economic systems. There is co-existence of private and public sectors. In a mixed economy of a developing nation, money plays an active and dynamic role in achieving the objective of planned economic development.

The importance of money in a mixed and developing economy may be listed as follows:

- Development of money market promotes and facilitates liquidity and safety of financial assets, which, in turn, encourages savings and investment.
- Moneymarketresults in a rational allocation of resources bychannelizing saving into productive investment.
- Expansion of money economy results in a greater mobility of financial resources.
- Deficit financing (i.e., covering the budget deficit through printing new money) can provide adequate funds to the government for financing and successful implementation of monetary policy.
- More and more money and monetary instruments are required for the monetization of the economy.

7.3 ANSWERS TO CHECK YOUR PROGRESS QUESTIONS

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1. An important feature of socialist economy is that economic decisions are taken by the central planning authority. The fixation of prices is done by the planners; it is not left to the market forces.
2. A mixed economy is a mix of capitalism and socialism. It includes good features of both the economic systems.
3. Development of money market promotes and facilitates liquidity and safety of financial assets, which, in turn, encourages savings and investment.

7.4 SUMMARY

- Capitalism refers to a free enterprise economy. In this type of economy, competition and private ownership of propertyusuallyprevail and economic decisions are taken privately. Moneyplays an all important role in the smooth and proficient functioning of the capitalist system.
- A great benefit of money is that it helps the producers in discovering what people want and how much they want. This enables the producers to decide what they need to produce and in what quantities.
- Socialism, as an alternative to capitalism, refers to an economic system which is controlled and regulated by the government. The government controls and regulates the economy with the objective of ensuring welfare and equality of opportunity to the people.
- An important feature of socialist economy is that economic decisions are taken by the central planning authority. The fixation of prices is done by the planners; it is not left to the market forces. Thus, moneyperforms an indirect role in socialist economy.
- Mixed economyis a mix of capitalism and socialism. It includes good features of both the economic systems. There is co-existence of private and public sectors. In a mixed economy of a developing nation, money plays an active and dynamic role in achieving the objective of planned economic development.

7.5 KEY WORDS

- **Capitalism:** It is an economic and political system in which a country's trade and industry are controlled by private owners for profit, rather than by the state.
- **Socialism:** It is a political and economic theory of social organization which advocates that the means of production, distribution, and exchange should be owned or regulated by the community as a whole.

7.6 SELF ASSESSMENT QUESTIONS AND EXERCISES

NOTES

Short-Answer Questions

1. List the advantages of money in a socialist economy.
2. What is the importance of money in a mixed and developing economy?

Long-Answer Questions

1. Explain the features of a capitalistic economy.
2. Differentiate among a capitalistic, socialistic and mixed economy.

7.7 FURTHER READINGS

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BLOCK III
THEORIES OF ECONOMICS

NOTES

UNIT 8 THEORIES OF MONEY-I

Structure

8.0 Introduction
8.1 Objectives
8.2 Fisher's Quantity - Cambridge Equation
8.3 Answers to Check Your Progress Questions
8.4 Summary
8.5 Key Words
8.6 Self Assessment Questions and Exercises
8.7 Further Readings

8.0 INTRODUCTION

According to the quantity theory of money, money supply and price level in an economy are in direct proportion to one another. When there is a change in the supply of money, there is a proportional change in the price level and vice-versa. The equation of exchange simply states that total spending, in terms of the money stock multiplied by the rate of its turnover or circulation, necessarily equals total spending in terms of the total volume of monetary transactions multiplied by the current price index. The two values on each side of the sign are necessarily identical. The theory was challenged by Keynesian economics, but updated and reinvigorated by the monetarist school of economics. The Cambridge Cash Balances Equation is a lesser-known equation to the Fisher Identity that emerged during the 1920s at Cambridge, with a formula that resolved at least the problems concerning Velocity. Let us study about these theories of exchange in the unit.

8.1 OBJECTIVES

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

- Understand the quantity theory equations
- Differentiate between cash-transactions equation and the cash-balances equation of exchange

8.2 FISHER'S QUANTITY - CAMBRIDGE EQUATION

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The quantity theory of money, which is fundamentally a theory of the demand for money, has been stated in various forms of equations of exchange. The two most well-known forms of the quantity theory equations are the cash-transactions equation of exchange of the form $MV = PT$ and the cash-balances equation of exchange variously written as $M = KPT$; $M = KPO$ or $M = KY$. The cash-transactions version is associated with the name of the American economist Irving Fisher who developed it in his well-known work entitled *The Purchasing Power of Money* published in 1911. The cash-balances approach, also known as the Cambridge approach, is associated with the names of the Cambridge economists Alfred Marshall, Arthur Cecil Pigou, Dennis Holme Robertson and John Maynard Keynes who taught at Cambridge University. These two versions of the quantity theory equations may now be discussed in detail.

Cash-Transactions or Fisher's Equation

The cash-transactions approach to the quantity theory of money, usually ascribed to Simon Newcomb and Irving Fisher, was stated bythe earlyeconomists, including David Ricardo, John Stuart Mill and others. In his theory of the demand for money, Irving Fisher primarilyemphasized the role of moneyas the medium of exchange—money is demanded in the economy because it serves as the means of effecting payments. In the cash transactions equation version no attention has been given to the asset demand for money. Fisher's explanation of changes in the general price level relate changes in the general price level P to changes in the total quantity of money in circulation M, its velocityof circulation V and the volume of transactions T which depended on the volume of trade so that his fundamental equation of exchange is:

$$MV = PT$$

According to Fisher, the nominal quantity of money in circulation (M) is an autonomous variable determined by the central bank. The total number or volume of transactions being a function of the level of income which is assumed to be the full employment income, the value of T is fixed in the short period. The velocity of money V is also constant being determined by the institutional and technological factors of the transactions process that do not change in the short period. Under these assumptions, the above equation of exchange can be transformed into a theory of the determination of the general price level (value of money) where,

$$P = \frac{MV}{T}$$

which states that the general price level is determined exclusively by the nominal quantity of money and is equi-proportional to it. Later, Fisher introduced

the bank deposits M' and their velocity V' in his equation so that finally his equation of exchange became

$$MV + M'V' = PT$$

and this yielded the quantity theory equation

$$P = \frac{MV + M'V'}{T}$$

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According to Fisher, in virtually all cases of substantial price changes, M was the active variable in the equation of exchange while P was 'normally the one absolutely passive element in the equation of exchange'. Furthermore, V and V' reflecting the community's spending habits, were short-run constants. According to Fisher, M' cannot change autonomously since there was a stable relationship between the primary money, bank reserves and the volume of bank demand deposits. Under these assumptions, changes in the quantity of money were the exclusive cause of changes in the general price level in the economy.

Cash-balances or Cambridge Equation

Associated with the names of the Cambridge economists Alfred Marshall, Arthur Cecil Pigou, Dennis Holme Robertson and John Maynard Keynes, the cash-balances quantityequation has 'a much longer descent, being derived from William Petty, John Locke, Richard Cantillon, andAdam Smith.'The main propelling force behind developing the cash-balances equation approach was to integrate the theory of money with the theory of value. This is evident from Alfred Marshall's attempt to show that the usual technique of the demand and supply curves could be utilized to determine the value of money. Keynes, who was Marshall's distinguished student, tells us that Marshall used to teach 'the quantity theory of money as a part of the general theory of value.' Following Marshall, Pigou also analysed the value of money in terms of the demand for and the supply of money. Robertson also regarded the theory of the value of money merely as a special case of the general theory of value.

The cash-balances approach, representing the neoclassical quantity theory of money, has been ably summarized by Don Patinkin in the following words.

'In its cash-balances version-associated primarily with the names of Walras, Marshall, Wicksell, and Pigou—neoclassical theory assumed that for their convenience, individuals wish to hold a certain proportion, K, of the real volume of their planned transactions, T, in the form of real money balances. The demand for these balances thus equals KT.

Correspondingly, the demand for nominal money balances is KPT, where P is the price level of the commodities transacted. The equating of this demand to the supply of money, M, then produced the famous Cambridge equation $M = KPT$ '

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Alfred Marshall, who headed the Cambridge school of economists, has beautifully summarized the cash-balances version of the quantity theory of money in the following words.

'In every state of society there is some fraction of their income which people find it worthwhile to keep in the form of currency: it may be a fifth, or a tenth or a twentieth. A large command of resources in the form of currency renders their business easy and smooth, and puts them at an advantage in bargaining, but on the other hand it locks up in a barren form resources that might yield an income or gratification if invested, say in extra furniture; or a money income; if invested, in extra machinery or cattle.' A man fixes the appropriate fraction 'after balancing one against another, the advantage of a further ready command and the disadvantages of putting more of his resources into a form in which they yield him no direct income or other benefit.' 'Let us suppose that the inhabitants of a country, taken one with another (and including, therefore, all varieties of character and of occupation), find it just worth their while to keep by them on the average ready purchasing power to the extent of a tenth part of their annual income, together with a fifteenth part of their property; then the aggregate volume of the currency of the country will tend to be equal to the sum of these amounts.'

According to Alfred Marshall, people in a country hold in the form of currency or 'ready purchasing power' a certain fraction of their annual money income and a certain fraction of their property or wealth. The total amount of money demanded by the people is, therefore, functionally related to their annual money income and to the amount of their property, i.e.,

$$M = f(Y, A)$$

where Y represents the community's annual aggregate money income and A is the money value of its total wealth or assets. Treating the demand for money as a stable function of the moneyincome and property, Alfred Marshall has expressed it in terms of the following equation:

$$M = KY + K'A$$

where K is the fraction of their total money income and K' is the fraction of their total assets expressed in terms of the money value which people find it worthwhile to keep in the form of currency. Both K and K' are short-run constants determined by the institutional factors such as the payments and transactions patterns and procedures, (*e.g.*, K would be larger if the wage and salary payments are less frequently received; it would be smaller if most expenditures are made immediately following the income receipts rather than being spread out over time; again it would be smaller the greater is the extent of the vertical integration between the business units.)

The asset or wealth component of the equation was ignored by Marshall's followers. Consequently, the demand for money was functionally related only to the money income reducing the above equation to the following simple equation:

$$M = KPO, \quad \text{where} \quad O = \text{Output}$$

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$$\text{or} \quad P = \frac{M}{KO}$$

Stating the quantity theory of money, Pigou has stated that, 'an increase in the supply of legal tender ought always, since the elasticity of demand for legal tender is equal to unity, to raise prices in the proportion in which the supply is increased.' The unit elasticity of demand for money simply means that if the purchasing power of money (1/*P*) is doubled, its demand is halved and *vice versa*. In other words, any given proportionate change in money's purchasing power causes an equi-proportionate change in the opposite direction in the total amount of money demanded. In other words, the product of the purchasing power of money (1/*P*) and the amount of money demanded (*M*) is always constant, i.e., the demand for real cash balances $M/P = KO$ = constant. This is the equation of a rectangular hyperbola demand curve for money. Pigou has stated the cash-balances equation in the following form:

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

$$\text{or} \quad P = \frac{KR}{M}$$

where *R* is the total real income in terms of wheat, *K* is the fraction of *R* which the community chooses to hold in the form of legal tender; *M* is the amount of legal tender (money) and *P* is the value of money in terms of wheat. It is, therefore, obvious that *P* in Pigou's equation is the inverse of *P* in Marshall's and Robertson's equations. There is, however, no basic difference between Pigou's and the other Cambridge economists' equations. According to Pigou's equation $\frac{1}{P}$ is the general price level which equals $\frac{M}{KR}$. This is the same thing as $\frac{M}{KO}$ in Marshall's equation or $\frac{M}{KT}$ in Robertson's equation.

The above equation was modified to make it applicable to those situations in which *K* is held partly in the form of currency and partly in the form of bank deposits. In its modified form, the equation was:

$$M = \frac{KR}{P}\,[c + h\,(1 - c)]$$

$$\text{or} \quad P = \frac{KR}{M}\,[c + h\,(1 - c)]$$

where *c* is the proportion of *K* which the community holds in the form of actual legal tender so that $1 - c$ is the proportion of *K* kept in the form of bank deposits and *h* is the proportion or ratio of their total deposits which the banks hold in the form of cash reserves.

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Dennis Holme Robertson, another leading member of the Cambridge school of economists, gave the following equation:

$$M = KPT$$

or $$P = \frac{M}{KT}$$

where M, P, T and K denote the total quantity of money, the general price level, the amount of goods and services purchased during one year and the fraction of T which people hold in the form of cash balances.

Stating the quantity theory of money John Maynard Keynes wrote:

> The quantity theory of money states that the amount of cash which the community requires, assuming certain habits of business and of banking to be established, and assuming also a given level and distribution of wealth, depends on the level of prices. If the consumption and production of actual goods are unaltered but prices and wages are doubled, then twice as much cash as before is required to do the business. The truth of this, properly explained and qualified, it is foolish to deny. The theory infers from this that the aggregate real value of all the paper money in circulation remains more or less the same irrespective of the number of units of it in circulation, provided the habits and propensity of the people are not changed.

Thus according to Keynes, the correspondence of the quantity theory of money with the facts of life was not assailable. He explained the quantity theory of money in the form of the following two equations:

$$n = pK; \text{ and}$$

$$n = p\ (K + rK')$$

where n is the total quantity of money in circulation, p is the price of consumption units, K is the amount of consumption units which the public holds in the form of money, K' is the amount of consumption units which the public holds in the form of bank deposits and r is the ratio of cash reserves of banks to their deposit liabilities K'. With K, K' and r remaining constant, the quantity theory conclusion that n and p rise and fall together equi-proportionately follows. This equation has some resemblance with the quantity theory equations of Marshall, Pigou and Robertson.

Cash-transactions and Cash-balances Equations Compared

According to some economists, the two quantity equations are fundamentally the same. While, the cash-transactions equation of the quantity theory of money emphasizes the value of money over a period of time by incorporating the velocity of money, the cash-balances equation explains the value of money at a point of time by including the concept of the demand for cash balances K. Mathematically, the two equations can be reconciled by substituting $1/K$ for V in the cash-transactions equation and $1/V$ for K in the cash-balances equation. Marshall thought

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that the essential reason why people demand cash or, in modem lingo, have preference for liquidity, is to bridge the time gap between the discrete receipt of money income and its continuous or, at any rate, less discrete spending. If the transactions demand for money is such that the total money stock turns over, say, at the rate of six times a year, then an equivalent of one-sixth of the annual money value of output will be kept in cash balances at any given point of time. Thus, the demand for the cash balances represented by K is the reciprocal of V, the velocity of money in circulation, i.e., $V = 1/K$. By substituting $1/K$ for V in the cash-transactions equation $MV = PT$, we get $M = KPT$ which is simply the cash-balances equation. Similarly, bysubstituting $1/V$ for K in the cash-balances equation $M = KPT$, we get $MV = PT$ which is simply the cash-transactions equation.

According to Robertson, the two equations are different observations of the same phenomenon. The cash-balances equation emphasizes the 'moneysitting' while the cash-transactions equation looks at the 'money on the wings'. The cash-transactions equation is concerned with money as a flow while the cash-balances equation is concerned with money as a stock. While the cash-transactions equation stresses the transactions velocity of money V, the cash-balances approach emphasizes the demand for cash balances K. Both the equations, however, regard money as serving only as the medium of exchange in the economy. The cash-balances approach stresses the role of money as a temporary abode of generalized purchasing power.

According to Alvin H Hansen, the Marshallian cash-balances quantity equation is superior to Fisher's cash-transactions equation. Stressing this point Hansen has stated: 'The Marshallian version of the quantity theory, i.e., $M = KY$ represents a fundamentally new approach to the problem of money and prices. It is not true, as is often alleged, that the 'cash-balances' equation is merely the quantity theory in a new algebraic dress. Substituting PO (price level times output) for Y, the Marshallian equation becomes $M = KPO$. Arithmetically K is, therefore, simply the reciprocal of V in the equation $MV = PO$. However, it does not follow from the mere fact that $V = 1/K$ as an arithmetical identity that, therefore, the Marshallian analysis is in fact the same thing as the Hume-Fisher analysis. To assert this is to miss entirely the significance of K in the Marshallian equation.'

The crucial difference between the two quantity equation approaches and the superiority of the cash-balances approach as compared with the cash-transactions approach can be stated in these words: 'In terms of the Marshallian approach, sudden and rapid shifts in the desire of public to hold money may profoundlyaffect prices even though the monetaryauthoritysuccessfullymaintains a high stability in the money supply. The desire of public to hold cash balances–liquidity preference–enters as a powerful factor. Drastic and sudden shifts in the desire to hold money, reflected in a change in K, may produce large and quickly moving changes in the level of income and prices. Shifts in public psychology, in expectations, must be taken into account no less than changes in the money supply.

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In the Marshallian analysis a shift in *K* maystart an upward or downward movement. It is *K*, not *M*, that holds the stage.'

Although, formally the cash-balances equation $M = KPO$ is simply a transformation of the cash-transactions equation $MV = PT$ and most writers who have used one of the two approaches have regarded them so, yet the two approaches are very different. The cash-balances equation is not simply a transformation of the cash-transactions equation. The two approaches stress different aspects of money, make different definitions of money seem natural and emphasize the different variables and analytical techniques.

The cash-transactions approach defines money in terms of anything which serves as the medium of exchange in discharging obligations. On the other hand, the cash-balances approach lays stress on money's function as the temporary abode of purchasing power. Consequently, according to the cash-balances approach, it is quite appropriate to include in money such stores of value as the demand and time deposits in the banks which are not transferable by cheques although it clearly does not require their inclusion. In short, while the cash-transactions approach confines itself to the narrow definition of money, the cash-balances approach looks at money in a broader perspective.

Moreover, the cash-transactions equation stresses such variables as the payment practices, financial and economic arrangements for effecting the transactions, and the speed of communication and means of transportation as it affects the time required to make the payment, i.e., it essentially emphasizes the mechanical aspects of the payments process. On the other hand, the cash-balances approach emphasizes those variables which affect the usefulness of money as an asset—the cost of and the income received from holding moneyinstead of holding the other alternative assets, uncertainty in future and other such variables.

Analytically, the cash-balances approach fits in more readilywith the general Marshallian demand-supply apparatus than does the cash-transactions approach. The equation $M = KPO$ can be regarded as a demand function for money, with *P* and *O* on the right-hand side being two of the variables on which the demand for money depends and with *K* representing all the other variables so that *K* is to be regarded not as a numerical constant but itself a function of still other variables. To complete the analysis, we require another equation showing the supply of money as a function of other variables. The general price level then becomes the consequence of the interaction of the demand and supply functions. Thus treated, the quantity theory of money as embodied in the cash-balances equations $M = KPO$ or $M = KPy$ is a theory of the demand for money, not a theory of the general price level or of the money income.

Marshall's introduction of the cash balances into the equation of exchange has the obvious advantage of facilitating the examination of those changes in the price level which are brought about by shifts in the liquidity preference of the public as well as those changes which are initiated by changes in the quantity of

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money. The importance given to *K* in the cash-balances equation approach emphasizes the human motives for holding the cash balances which cannot be analysed in money terms in sharp contrast to the highly mechanical nature of the concept of velocity *V* in the cash-transactions approach. This important fact–the analysis of human motives for holding the cash balances–led the Cambridge economists to study those factors which constituted the foundation for the development of the monetary theory during the past six decades. Marshall's introduction of the concept of the demand for cash balances was a step forward towards the Keynesian concept of the liquidity preference in which the primary emphasis was given to the speculative motive for holding the cash balances. Keynes made the demand for money a function of the interest rate (bond prices) and by showing the relationship between the rate of interest and investment demand, he integrated the monetary theory with the general theory of income and output.

The cash-balances equation $M = KPT$ or $M = KPO$ is a more useful tool than the cash-transactions equation $MV = PT$ for explaining the value of money because it is easier to know the cash-balances relative to the money income which are held bythe individuals than to know how much theyspend on all the transactions. The cash-balances approach is superior to the cash-transactions approach because by focussing attention on the cash balances which people like to hold—by comparing at the margin the relative advantage of holding moneyas against spending or investing—the approach focusses attention on the discussion of the 'velocity' of money. This shift in the viewpoint led the economists subsequently to remove many confusions which were still latent in the analysis and to the identification of qualitatively distinct motive for holding the cash balances as well as to synthesize the 'monetary' and 'price' theories.

Although, mathematically identical with the cash-transactions equation, the development of the cash-balances equation was a break with the earlier approach. In the cash-balances equation, the emphasis shifted from the institutional and technological factors to the psychological factors as the main determinants of the demand for money. The demand to hold money became formally identical to the demand to hold any asset in which the principal determinants are, in addition to preferences, the individual's total wealth, the yield of the asset and the yields of the relevant alternatives.

In the cash-balances equation, the transactions demand for money has been relegated to secondaryimportance. The relationship between the amount of money held and the volume of transactions conducted during any given time period is a very loose one as these can be carried with the help of other devices such as by increasing the velocity of money in circulation or through the resort to barter as certainly happens during hyperinflations.

According to Alfred Marshall, the chief merit of the cash-balances equation of the quantity theory of money is that it removes the serious complications which arise when we establish a relationship between the velocity of money in circulation

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and the value of money as has been done in the cash-transactions equation. The cash-balances equation explains that the value of money is a function of its supply and its demand as measured by 'the average stock of command over commodities which persons care to keep in a ready form.' The emphasis placed on *K* in the cash-balances equation is more significant for understanding the phenomenon of cyclical fluctuations than is *V* in the cash-transactions equation. The cash-balances equation focusses attention on how changes in the value of real cash balances cause cyclical changes in the level of prices. A distrust of the people in the money unit in the country by diminishing their willingness to hold it increases prices and vice versa.

In the cash-balances approach, the demand to hold money is formally identical to holding any asset in which the main determinants, apart from wealth-holders' preferences, are their total wealth and the yields made available on the alternative forms of assets. The cash-balances equation is the forerunner of the modern liquidity preference theory which is significant in the explanation of the determination of equilibrium income and employment and also in explaining the limitations of the monetary policy in controlling the slumps and booms in the economy. Moreover, the cash-balances approach with its emphasis on the demand for money is more realistic than the cash-transactions approach because the fundamental truth about money is that someone must always hold it in the economy.

The cash-balances equation can also be recast to explain people's behaviour. Let us give any positive value of less than one to *K*, say $K = 0.5$. This shows that the community prefers to hold one-half of its total annual money income in the form of cash balances. With the value of *K* given as 0.5, we can derive the following liquidity preference schedule for the community showing the different amounts of total cash balances which the community will hold at the different levels of aggregate money income.

Table 8.1

(Rupees crores)

Money Income (Y)	***Demand for Cash Balances (KY) K = 0.5***
400	200
300	150
200	100
100	50
50	25

The demand schedule for money, showing relationship between the money income and the demand for money has been shown by the *KY* curve in Figure 8.1. If the total money supply which is autonomously determined by the central banking authority, is shown by the vertically drawn $\bar{M}_s$ $\bar{M}_s$ curve, the equilibrium money income will be $0Y_2$ since at this money income the total demand for cash balances ($K0Y_2$) equals the given total money supply ($\bar{M}_s$). At any money income lower

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than $0Y_2$, say at $0Y_1$, the demand for cash balances will be less than the total money supply, i.e., $K0Y_1 < \bar{M}_s$. Consequently, people will find themselves in the possession of superfluous or unwanted cash.

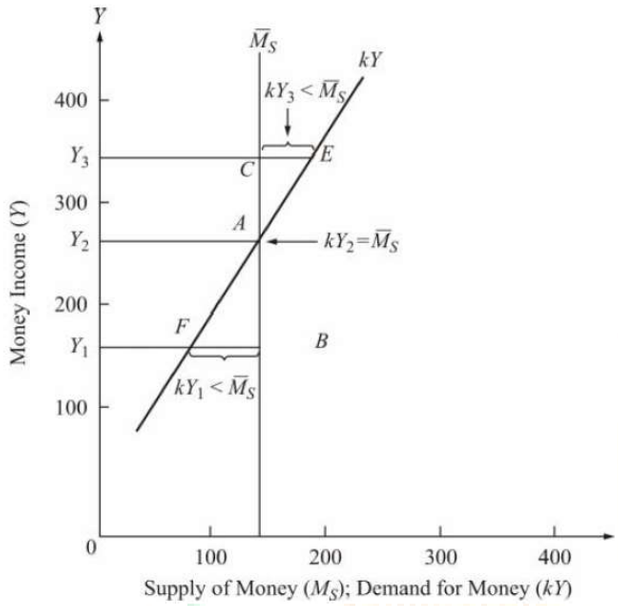

Fig. 8.1 *Relationship between Money Income and Demand for Money*

Since money is not demanded per se, to get rid of this unwanted cash they will increase their spending, thereby raising the level of aggregate moneyincome in the process of spending. Since the aggregate money income equals the aggregate real income or output times the price level and since the real output is fixed, prices will rise in the same proportion in which the aggregate money spending increases. Thus moneyincome will rise until it once again becomes $0Y_2$ where the total demand for money equals the given total supplyof money, i.e., $K0Y_2 = \bar{M}_s$. On the contrary, at any money income higher than $0Y_2$ say at $0Y_3$, the total demand for cash balances will exceed the total money supply, i.e., $K0Y_3 > \bar{M}_s$. Consequently, people will try to equate their actual cash balances with their desired cash balances by reducing their total spending as a result of which the aggregate money income will fall. Since the total real output is fixed, the fall in the aggregate money income will represent only the fall in prices. The aggregate money income will continue to fall until at the lower money income $0Y_2$ equilibrium between the demand for money and the fixed supply of money $\bar{M}_s$ is restored, i.e., $K0Y_2 = \bar{M}_s$.

8.3 ANSWERS TO CHECK YOUR PROGRESS QUESTIONS

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1. The cash-transactions approach defines money in terms of anything which serves as the medium of exchange in discharging obligations.
2. Fisher's fundamental equation of exchange is:

   $MV = PT$

   where, M is the nominal quantity of money in circulation

   V is the velocity of circulation

   P is the general price level

   T is the volume of transactions

8.4 SUMMARY

- The two most well-known forms of the quantity theory equations are the cash-transactions equation of exchange of the form $MV = PT$ and the cash-balances equation of exchange variously written as $M = KPT$; $M = KPO$ or $M = KY$.
- In his theory of the demand for money, Irving Fisher primarily emphasized the role of money as the medium of exchange—money is demanded in the economy because it serves as the means of effecting payments. In the cash transactions equation version no attention has been given to the asset demand for money. Fisher's explanation of changes in the general price level relate changes in the general price level P to changes in the total quantity of money in circulation M, its velocity of circulation V and the volume of transactions T which depended on the volume of trade so that his fundamental equation of exchange is:

  $MV = PT$

- The cash-balances quantityequation has 'a much longerdescent, beingderived from William Petty, John Locke, Richard Cantillon, and Adam Smith.'The main propellingforce behind developing the cash-balances equation approach was to integrate the theory of money with the theory of value.
- According to Keynes, the correspondence of the quantity theory of money with the facts of life was not assailable. He explained the quantity theory of money in the form of the following two equations:

  $n = pK$; and

  $n = p\ (K + rK')$

  where n is the total quantity of money in circulation, p is the price of consumption units, K is the amount of consumption units which the public

holds in the form of money, $K¢$ is the amount of consumption units which the public holds in the form of bank deposits and r is the ratio of cash reserves of banks to their deposit liabilities K.

- According to some economists, the two quantityequations are fundamentally the same. While, the cash-transactions equation of the quantity theory of moneyemphasizes the value of moneyover a period of time byincorporating the velocity of money, the cash-balances equation explains the value of money at a point of time by including the concept of the demand for cash balances *K*.
- The crucial difference between the two quantity equation approaches and the superiority of the cash-balances approach as compared with the cash-transactions approach can be stated in these words: 'In terms of the Marshallian approach, sudden and rapid shifts in the desire of public to hold moneymayprofoundlyaffect prices even though the monetaryauthority successfully maintains a high stability in the money supply. The desire of public to hold cash balances–liquidity preference–enters as a powerful factor. Drastic and sudden shifts in the desire to hold money, reflected in a change in *K*, may produce large and quickly moving changes in the level of income and prices. Shifts in public psychology, in expectations, must be taken into account no less than changes in the moneysupply. In the Marshallian analysis a shift in *K* may start an upward or downward movement. It is *K*, not *M*, that holds the stage.'
- The cash-transactions approach defines money in terms of anything which serves as the medium of exchange in discharging obligations. On the other hand, the cash-balances approach lays stress on money's function as the temporary abode of purchasing power.
- The cash-balances equation $M = KPT$ or $M = KPO$ is a more useful tool than the cash-transactions equation $MV = PT$ for explaining the value of money because it is easier to know the cash-balances relative to the money income which are held by the individuals than to know how much they spend on all the transactions. The cash-balances approach is superior to the cash-transactions approach because by focussing attention on the cash balances which people like to hold—bycomparing at the margin the relative advantage of holding moneyas against spending or investing—the approach focusses attention on the discussion of the 'velocity' of money.
- According to Alfred Marshall, the chief merit of the cash-balances equation of the quantity theory of money is that it removes the serious complications which arise when we establish a relationship between the velocity of money in circulation and the value of money as has been done in the cash-transactions equation. The cash-balances equation explains that the value of money is a function of its supply and its demand as measured by 'the average stock of command over commodities which persons care to keep in a ready form.'

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- In the cash-balances approach, the demand to hold money is formally identical to holding any asset in which the main determinants, apart from wealth-holders' preferences, are their total wealth and the yields made available on the alternative forms of assets.

8.5 KEY WORDS

- **Keynesian:** It refers to an advocate of the economic theories of John Maynard Keynes.

8.6 SELF ASSESSMENT QUESTIONS AND EXERCISES

Short-Answer Questions

1. What does Robertson say about Cash-transactions and Cash-balances Equations?
2. What did John Maynard Keynes write in context of the quantity theory of money?

Long-Answer Questions

1. Explain Fisher's Equation.
2. Differentiate between Cash-transactions and Cash-balances Equations.

8.7 FURTHER READINGS

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UNIT 9 GENERAL EVALUATION OF THE QUANTITY THEORY OF MONEY

Structure

9.0 Introduction
9.1 Objectives
9.2 Criticisms of Fisher
9.2.1 Criticisms of Cambridge Equation
9.3 Answers to Check Your Progress Questions
9.4 Summary
9.5 Key Words
9.6 Self Assessment Questions and Exercises
9.7 Further Readings

9.0 INTRODUCTION

The cash-transactions equation of the quantity theory of money emphasizes the value of money over a period of time by incorporating the velocity of money Fisher's quantity theory of money has been criticised on the grounds of interdependence of variables, unrealistic assumption of long period and full employment, static theory, simple truism, technically inconsistent, fails to explain trade cycles, ignores other determinants of price level, fails to integrate monetary theory with price theory, money as a store of value ignored, no discussion of velocity of money, one-sided theory, no direct and proportionate relation between M and P and Crowther's criticism. The cash balance approach links the determination of the value of moneyto cash the subjective valuations of individuals who are behind all economic activities. Such an approach enables us to throw more light on the somewhat puzzling phenomenon of the velocity of circulation of money, by enquiring more deeply into the nature of the demand for money, as the demand for the money in the cash-balance approach has reference to the store of value function of money. The cash-balances approach has been criticised on the counts of truisms, price level not measuring the purchasing power, more importance given to total deposits, neglect of saving investment effect, K and Y not constant, fails to explain dynamic behaviour of prices, demand for moneynot interest inelastic, neglect of goods market and real balance effect. Let us study further the criticisms of the quantity theories of money.

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9.1 OBJECTIVES

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

- Understand the shortcomings of the quantity theory of money
- Discuss the criticisms of cash-transactions equation of exchange and the cash-balances equation

9.2 CRITICISMS OF FISHER

The cash-transactions equation of exchange has been subjected to various criticisms, mostly emanating from the assumptions embodying the equation. It has been said against the equation that it says nothing about the cyclical fluctuations in prices. In depression, prices fall while the monetary authority increases the quantity of money in circulation. This paradox is explained by the steep fall in the velocity of circulation of money *V* which more than offsets the increase in the money supply *M*. It has also been argued that contrary to the assumption made in the equation, the price level *P* might rise without the quantity of money *M* having increased and at any rate *P* might rise more than proportionately to the increase in *M* as was actually witnessed during the German hyperinflation when the general price level rose incredibly high due to the rapid increase in the velocity of the fast depreciating German mark. Crowther has correctly stated that 'the quantity theory might be relegated to the position of explaining the longer secular movements in the average price level, while some other explanation was sought for the shorter and more violent swings of the trade cycle.'

It has also been said in criticism of the quantity theory that it concentrates too much attention on the general price level as if changes in prices were the most critical and important phenomenon of the economy. It is true that changes in prices induce changes in the tempo of economic activities leading to changes in the volume of production. Rising prices lead to increased economic activity resulting in the creation of wealth and *vice versa*. The quantity theory of money is, however, defective because taking these undeniable truths it proceeds to assume that all changes in the level of general economic activity are the result of changes in the general price level. In Marget's opinion, 'the quantity equations themselves are nothing more or less than short-hand expression designed to indicate the nature of the variables whose operations can be shown to influence prices. Each of the variables in these equations is merely a chapter heading, a rubric for detailed analysis designed to explain why the variable in question will be of a different magnitude under different circumstances, and to indicate the circumstances under which, and the sequence in which, changes in the magnitude of one variable may be expected to be associated with changes in other variables.'

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George N Halm has criticized the equation of exchange bypointing out certain inconsistencies. Criticizing the quantity equation he says that 'the importance of the equation of exchange must by no means be overrated. Otherwise we are bound to get into difficulties. We have to note that *M* refers to a point of time, whereas *V* refers to the turnover of money during a period of time: consequently, the expression *MV* would involve the inconsistency of multiplying non-comparable factors unless the assumption is made that *M* is an average amount of money in circulation during the period in question or is the same amount during the whole period. However, these assumptions are not comparable with all possible purposes of the equation'.

According to the equation of exchange, the general price level can be controlled by the monetary authority by controlling the money supply. According to the quantity theorists, monetary policyalone is sufficient to ensure price stability in the economy. The general price level is not, however, a function of money supply alone being influenced by many other monetary and non-monetary factors which might cancel out the influence of changes in the money supply on the level of prices. Criticizing the equation of exchange Friedrich AVon Hayck has in his book *Prices and Production* stated that it concentrates too much attention on the general magnitudes. The equation of exchange establishes an unreal causal nexus between the total quantityof money, volume of trade and general price level without realizing that monetaryfactors can influence the economy's general price level through first affecting the innumerable single price-making decisions. There is no mention in the equation of exchange of the changes in the relative prices caused by the changes in the quantity of money.

Geoffrey Crowther has criticized the quantity theory (both the cash-transactions and the cash-balances equation) on different grounds. According to him, the 'Quantitytheory can only explain the 'How it works' of fluctuations in the value of moneyand in the activity of industry. However, it cannot explain the 'Why it works', except in the long-period and in those exceptional short-period fluctuations that are manifest due to large-scale creations or contractions of money. It cannot even explain why it is that a creation of money will sometimes 'take' and start off a rise in prices, while at another time an equal creation may have no effect at all.' Again he states: 'The quantity theory is at best an imperfect guide to the causes of the trade cycle. Shortage of money may cause the recovery to turn into depression. However, it is not the sole cause, and depressions may begin when there is no shortage of money the quantity of money in existence seems to be the dominant influence on the price level on the average of long periods. But in the short period of the trade cycle, it may or may not control the movements of prices. And whether it does or does not depends on whether changes in the quantity of money are offset by changes in the velocity of its circulation.' Crowther concludes that according to modern thinking, the quantity of money is not a determinant of the value of money. The value of money is a consequence of the total income rather than of the total quantity of money.

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Criticizing the quantity theory of money, Keynes has stated that 'for the purposes of the real world it is a great fault in the quantity theory that it does not distinguish between changes in prices which are a function of changes in output, and those which are a function of changes in the wage-unit. The explanation of this omission is, perhaps, to be found in the assumptions that there is no propensity to hoard and that there is always full employment. For in this case, O being always constant and M_2 being zero, it follows, if we can take V also as constant, that both the wage-unit and the price-level will be directly proportional to the quantity of money.'

Explaining the shortcoming of the quantity equations, particularly the cash-transactions approach to the quantity theory of money, Don Patinkin has very correctly stated that 'the familiar equation $MV = PT$ can be looked upon as determining the equilibrium price level P as the resultant of forces represented by the aggregate demand for goods MV, on the one hand, and their aggregate supply T on the other. This equation, however, does little to exploit the full potentialities of the theme. It restricts monetary theory to the case of an aggregate demand function for goods which, to outward appearances, is independent of the rate of interest and directly proportionate to the quantity of money. This is as misleading as it is unrealistic, for it gives the false impression that the results obtained by analysing this equation are necessarily dependent upon these extreme assumptions.'

Criticizing the quantity equation in his review of Irving Fisher's book *The Purchasing Power of Money* Findlay Shirras wrote: 'The quantity of money is a secondary factor compared with the volume of expenditure. The notion that the quantity of money is a causative factor in the state of business has given way to regarding it is a consequence. Changes in the level of prices are not the most important phenomenon of the economic system, and we hold today that it is the lack of spending, a lack of income rather than lack of money that produces a depression. The quantity theory of money, in short, is not a dominant cause of the fluctuations of prices and is a very imperfect guide to the causes of the trade cycle.' The quantity theory of money does not explain the process by which an increase in the quantity of money causes an increase in the aggregate money spending which, with the given aggregate real output, raises the general level of prices in the economy.

The quantity theory of money emphasizes only the medium of exchange function of money. In its role as the medium of exchange, money is needed only for transactions purposes. In the classical economic theory, of which the quantity theory of money was a crucial part, the asset demand for money was not at all recognized. The quantity theory of money reflects the classical view that since money has no inherent utility, the only rational motive of holding cash balances on the part of people is to facilitate the transactions. It was argued that since money was barren, no one outside a lunatic asylum would hold his assets in the barren form of money as compared to adding interest-bearing riskless government bonds

or company shares on which an individual wealth-holder would earn dividend income. The classicists assumed that the interest elasticity of the demand for money was zero. This was a serious gap in their analysis. One of the major contributions of the Keynesian economics is the demonstration that there are circumstances, depending on the current rate of interest, where it is rational for the wealth-holders to hold cash balances as part of their asset portfolio as well as for transactions purposes. If the quantity theorists had recognized the asset demand for money they would have integrated it with the transactions demand for money in order to obtain the total demand function for money. Consequently, they would have developed an altogether different theoryof the determination of the value of money.

9.2.1 Criticisms of Cambridge Equation

Although, an improvement over the cash-transactions equation of Fisher, the cash-balances equation is not unassailable. As the monetary theory, the cash-balances equation is inadequate in explaining the dynamic price behaviour in the economy. The equation is merely an exercise in comparative statics and is much too simple to deal with the dynamic economic system. Consequently, it cannot explain the cyclical changes in prices.

Second, the cash-balances equation is defective since it does not analyse the total demand for cash balances, it neglects the asset or speculative demand for cash-balances which frequently causes sudden and violent changes in the community's liquidity preference schedule. By neglecting the important role of the speculative motive in determining the total demand for money, the cash-balances equation does not explain the behaviour of all the forces influencing the total demand for money and consequently the value of money.

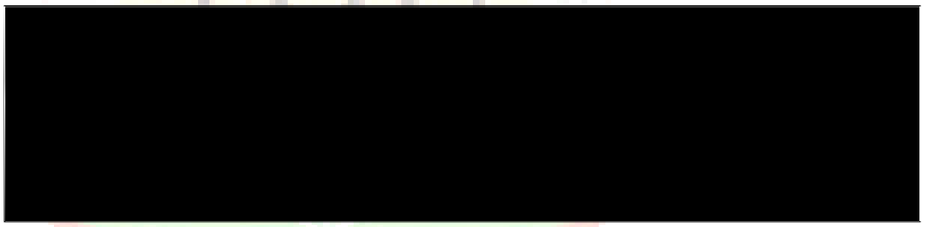
According to this approach, money serves only as a medium of exchange in the economy. In the equation, the precautionary motive for holding money has been treated onlyslightly and incidentallywhile the asset motive for holding money involving the speculative decisions has not been mentioned at all. Notwithstanding that Marshall conceived of an asset demand for money, i.e., the demand for money to satisfy the speculative acquisition for cash assets he made virtually nothing of it and it was practically forgotten by his followers.

By not paying sufficient attention to the asset or speculative demand for money, the cash-balances equation did not recognize the role of interest rate in determining the demand for cash balances. Consequently, the equation remains separate from the whole corpus of the monetary theory dealing with the rate of interest. 'The omission of the rate of interest from the cash-balance equation creates the misleading impression that the classical invariance of this rate holds only in the special case where it does not affect the demand for money... no such restriction is necessary. This is not to deny that in other contexts neoclassical economists did recognize the influence of the rate of interest on the demand for money and did make other significant extensions of classical interest theory. But it is to stress that

these contributions found no place in those fundamental equations which, more than anything else, are the hallmark of the neoclassical monetary theory.' The neglect in treating the demand for moneyas a function of the rate of interest explains the failure of the quantity theorists to integrate the monetary theory with the theory of income and output, a task which was successfully achieved by Keynes.

Third, like the cash-transactions equation the cash-balances equation assumes *K* and *T* or *Y* as given. In the equation, *K* is determined by the institutional factors which are assumed constant in the short period while the aggregate output *Y* is also assumed as given.

Fourth, in the equation the cash balances of all groups of people have been lumped together. In fact, different people's cash balances are subject to different behaviour patterns showingthe influence of substantially different sets of underlying determinants. Furthermore, even the changes in the proportions in which the cash balances are held between the different groups of cash balances holders may be of great significance, apart from changes in the total cash balances held by the entire community.



9.3 ANSWERS TO CHECK YOUR PROGRESS QUESTIONS

1. The quantity theory of money is defective because taking these undeniable truths it proceeds to assume that all changes in the level of general economic activity are the result of changes in the general price level.
2. The Cambridge Equation cannot explain the cyclical changes in prices because the equation is merely an exercise in comparative statics and is much too simple to deal with the dynamic economic system.
3. Keynes successfully achieved the task of integrating the monetary theory with the theory of income and output.

9.4 SUMMARY

- The cash-transactions equation of exchange has been subjected to various criticisms, mostlyemanating from the assumptions embodying the equation. It has been said against the equation that it says nothing about the cyclical fluctuations in prices. In depression, prices fall while the monetary authority

increases the quantity of money in circulation. This paradox is explained by the steep fall in the velocity of circulation of money *V* which more than offsets the increase in the money supply *M*.

- It has also been said in criticism of the quantity theory that it concentrates too much attention on the general price level as if changes in prices were the most critical and important phenomenon of the economy. It is true that changes in prices induce changes in the tempo of economic activities leading to changes in the volume of production. Rising prices lead to increased economic activity resulting in the creation of wealth and *vice versa*.
- According to the equation of exchange, the general price level can be controlled by the monetary authority by controlling the money supply. According to the quantity theorists, monetary policy alone is sufficient to ensure price stability in the economy. The general price level is not, however, a function of money supply alone being influenced by manyother monetary and non-monetary factors which might cancel out the influence of changes in the money supply on the level of prices.
- Criticizing the equation of exchange Friedrich AVon Hayck has in his book *Prices and Production* stated that it concentrates too much attention on the general magnitudes. The equation of exchange establishes an unreal causal nexus between the total quantity of money, volume of trade and general price level without realizing that monetary factors can influence the economy's general price level through first affecting the innumerable single price-making decisions.
- According to Geoffrey Crowther, the 'Quantity theory can only explain the 'How it works' of fluctuations in the value of money and in the activity of industry. However, it cannot explain the 'Why it works', except in the long-period and in those exceptional short-period fluctuations that are manifest due to large-scale creations or contractions of money. It cannot even explain why it is that a creation of money will sometimes 'take' and start off a rise in prices, while at another time an equal creation may have no effect at all.'
- Criticizing the quantity theory of money, Keynes has stated that 'for the purposes of the real world it is a great fault in the quantity theory that it does not distinguish between changes in prices which are a function of changes in output, and those which are a function of changes in the wage-unit.
- Criticizing the quantity equation in his review of Irving Fisher's book *The Purchasing Power of Money* Findlay Shirras wrote: 'The quantityof money is a secondary factor compared with the volume of expenditure. The notion that the quantity of money is a causative factor in the state of business has given way to regarding it is a consequence. Changes in the level of prices are not the most important phenomenon of the economic system, and we

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hold today that it is the lack of spending, a lack of income rather than lack of money that produces a depression.

- One of the major contributions of the Keynesian economics is the demonstration that there are circumstances, depending on the current rate of interest, where it is rational for the wealth-holders to hold cash balances as part of their asset portfolio as well as for transactions purposes. If the quantity theorists had recognized the asset demand for money they would have integrated it with the transactions demand for money in order to obtain the total demand function for money.
- As the monetary theory, the cash-balances equation is inadequate in explaining the dynamic price behaviour in the economy. The equation is merely an exercise in comparative statics and is much too simple to deal with the dynamic economic system. Consequently, it cannot explain the cyclical changes in prices.
- The cash-balances equation is defective since it does not analyse the total demand for cash balances, it neglects the asset or speculative demand for cash-balances which frequently causes sudden and violent changes in the community's liquiditypreference schedule.
- The omission of the rate of interest from the cash-balance equation creates the misleading impression that the classical invariance of this rate holds only in the special case where it does not affect the demand for money. This is not to deny that in other contexts neoclassical economists did recognize the influence of the rate of interest on the demand for money and did make other significant extensions of classical interest theory. But it is to stress that these contributions found no place in those fundamental equations which, more than anything else, are the hallmark of the neoclassical monetary theory.
- The neglect in treating the demand for money as a function of the rate of interest explains the failure of the quantity theorists to integrate the monetary theory with the theory of income and output, a task which was successfully achieved by Keynes.

9.5 KEY WORDS

- **Portfolio:** It is a collection of financial investments like stocks, bonds, commodities, cash, and cash equivalents, including closed-end funds and exchange-traded funds (ETFs).
- **Neoclassical economist:** It refers to the proponent of neoclassical economics that focuses on supply and demand as the driving forces behind the production, pricing, and consumption of goods and services.

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9.6 SELF ASSESSMENT QUESTIONS AND EXERCISES

Short-Answer Questions

1. What has Keynes stated while criticising the quantity theory of money?

Long-Answer Questions

1. Examine the criticisms of cash-transactions equation of exchange and the cash-balances equation.

9.7 FURTHER READINGS

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UNIT 10 MONEY SUPPLY

NOTES

Structure

10.0 Introduction
10.1 Objectives
10.2 Money Supply and Price Level
10.3 Keynesian Approach
  10.3.1 Neutrality of Money
  10.3.2 Classical Dichotomy
10.4 Real Balance Effect
  10.4.1 Don Patinkin's Real Balance Effect
10.5 Answers to Check Your Progress Questions
10.6 Summary
10.7 Key Words
10.8 Self Assessment Questions and Exercises
10.9 Further Readings

10.0 INTRODUCTION

The money supply, in macroeconomics, is the total value of money available in an economy at a point of time. The connection between money and prices has been associated with the quantity theory of money. There is strong practical evidence of a direct relationship between the growth of the money supply and long-term price inflation, at least for rapid increases in the amount of money in the economy. The economist and policy makers use the valuation and analysis of the money supply to chalk out the policy or to alter the existing policy of increasing or reducing the supply of money. Every country's central bank publishes the money supply data periodically based on the monetary aggregates set by them. The Reserve Bank of India follows M0, M1, M2, M3 and M4 monetary aggregates. In this unit we will study about the Keynesian approach to theory of demand for money. Keynes criticised the classical theory of static equilibrium in which money is regarded as neutral and does not influence the economy's real equilibrium relating to relative prices. In his opinion, the problems of the real world are related to the theory of shifting equilibrium whereas money enters as a "link between the present and future". Keynesian approach to money and prices have been criticised on the grounds of direct relation, stable demand for money, nature of money and effect of money. This unit also deals with the real-balance effect that states that when there is deflation of prices, employment (and thus output) will be increased due to an increase in wealth.

10.1 OBJECTIVES

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

- Understand the concept of money supply and price level
- Discuss the Keynesian approach
- Explain the transactions, precautionary and speculative motives for holding money
- Examine the criticism of the Keynesian theory of demand for money
- Describe the classical dichotomy between the real and monetary sectors of the economy
- Examine the real-balance effect and its criticism

10.2 MONEY SUPPLY AND PRICE LEVEL

The intermittent occurrence of wide movements in the general price level has attracted special attention ever since the economists first began to write on economic matters. These price movements have been largely ascribed to the monetary and non-monetary factors. According to the monetary explanation, changes in the general price level in the economy are caused by changes in the total quantity of money in circulation. According to the other explanation, changes in prices are caused by the non-monetary factors such as war, famine, weather changes or some other special circumstance. The first explanation of changes in the prices has been labelled as the quantity theory of money. According to the quantity theorists, the principal thrust of any given change in the total supply of money is to cause changes in the level of prices in the economy.

The origin of the quantity theory of money as an explanation of changes in the value of money (prices) as a function of changes in its quantity can be found in the writings of early mercantilist writers. In his monumentally scholarlywork titled *The Theory of Prices,* Arthur W Marget has traced the origin of the quantity theory of money to the 15th century. There is, however, dispute among the economists as to who was the first writer to formulate the theory.

According to Angell and Monroe, eminent French philosopher John Locke was the first to formulate the theory in 1691. This view has, however, been disputed by Jacob Viner who has shown that the quantity theory of money in its several variants was stated earlier by Gerard de Malynes, Thomas Mun, Robert Bruce Cotton, Henry Robinson and others. In support of his assertion, Jacob Viner has quoted from the writings of these writers which presented in some form the quantity theory of money ante-dating John Locke by 40 to 90 years.

According to Joseph A Schumpeter, Jean Bodin was the first discoverer of the quantity theory of money because Bodin had recognized the connection

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between an influx of the precious metals and the rising prices in France in 1568. This is not, however, to deny that the doctrine was not attacked; in fact, it was repeatedly attacked ever since Thomas Tooke criticized it in his famous work titled *History of Prices*.

After John Locke had propounded it, the quantity theory of money, suffering additions and modifications at the hands of several writers, attained the status of an important doctrine of the classical political economy. Although Dudley North in 1661, Issac Gervaise in 1720, Richard Cantillon in 1730 and Jacob Vanderlint in 1734 had stated the quantity theoryof moneywith varying degrees of completeness and correctness, it was David Hume who systematized and popularized the doctrine byformulatingit preciselyin 1752 in his well-known work titled Political Discourses. The doctrine was propounded to explain the balance of payments adjustment mechanism. David Hume's version of the pure quantity theory of money held a prominent position in the 19 century classical economic thought and his essay entitled 'Of Money', can still be read for pleasure and profit by every serious student of economics.

Hume introduced the notion of causality between the total money supply (M) and the general price level (P) laying down this commonly accepted version: T and V being insensitive or non-responsive to monetary changes, M and P will varyequi-proportionately. This proposition is, however, valid onlyso long as money in the economy is merely a standard of value and a medium of exchange. In such a situation, this proposition is a tautology.

However, as soon as money is considered to be demanded as a store of value, M and P will not necessarily vary equi-proportionately. The quantity theory of money in the sense of a fairly rigid connection between M and P was considered at the time as a verifiable and indeed as an obvious statement concerning the real world. If nothing else, the 'price revolution' of the 16th century was regarded as a strong evidence of a direct casual relationship between the variations in M and P.

In the earlier versions of the doctrine, although a positive relationship between the aggregate money supply and the general level of prices was established so that an increase in the former always led to a rise in the latter and *vice versa*, these versions did not assert that this positive relationship between the aggregate money supply and the general price level was one of strict proportionality. The early quantity theorists were aware of the possibility of the increase in the aggregate output over time due to the technological improvements. They also realized that the velocity of money would change due to the changing nature of the monetary institutions. Consequently, they did not assert that the general price level would change equi-proportionately to changes in the aggregate money supply.

Subject to these limitations, it was, however, stated that the general price level P would change in some dependable manner in response to changes in the total quantity of money in circulation M (or MV) such that an increase (decrease) in the total money supply in the economy would cause the general price level to

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rise (fall). In other words, changes in the value or the general purchasing power of money (1/*P*) depended on changes in its supply in such a way that an increase (decrease) in the aggregate money supply in circulation would result in the fall (rise) in the purchasing power of money. This means that the value of money was an inverse function of its total quantity or supply. The naïve quantity theory of money asserts that the money elasticity of the general price level is positive. This statement is, however, very different from the statement which asserts an equi-proportionality relationship between changes in the quantity of money and the general price level. The early quantity theory of money in its naive form can be explained with the help of Figure 10.1 showing that when the total quantity of money in circulation increases, the general price level also rises. The relationship between these two macroeconomic variables is positive.

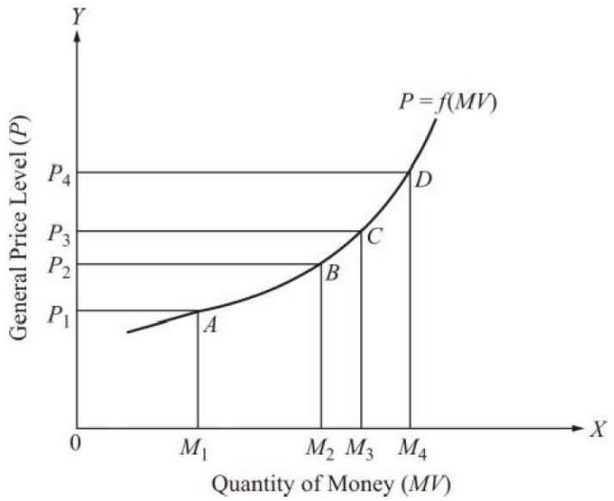

Fig. 10.1 *Quantity and Price Level*

The curve $P = f(MV)$ shows that initially the increase in the general price level is less than equi-proportional to the increase in the moneysupply. Furthermore, with progressive increase in the money supply, the increase in the general price level becomes higher although it still remains short of the equi-proportional increase. This is explained by the fact that initially the impact of the increase in the money supply is more on increasing the economy's aggregate output rather than on raising the general price level with the emphasis progressively shifting from the former to the latter as the economy approaches its optimum capacity output. After the full employment output is achieved in the economy, the increase in the general price level will be equi-proportional to the increase in the aggregate money supply.

The later-day classical and the neoclassical economists in their vain bid to reduce the economic phenomena to a few broad principles stated the relationship between changes in the money supply and changes in its value in terms of the rigid proportionality relationship between the total money supply and the general price

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level. In fact, the rigid quantity theorists asserted that the demand curve for money was a rectangular hyperbola so that the purchasing power of money varied in inverse ratio to changes in the quantity of money. The naive quantity theory of money has been illustrated in Figures 10.2 and 10.3.

Figure 10.2 shows that changes in the general price level (P) are equi-proportional to changes in the total quantity of money (MV) in circulation. When the total quantity of money in circulation is $0M_1$, the general price level is $0P_1$. When the total money supply increases from $0M_1$ to $0M_3$, the general price level in the economy rises from $0P_1$ to $0P_3$. The proportionate (percentage) rise in the general price level $\frac{0P_3 - 0P_1}{0P_1}$ is equal to the proportionate increase in the total money supply $\frac{0M_3 - 0M_1}{0M_1}$. Similarly, when the total quantity of money in circulation falls from $0M_1$ to $0M_2$, the general price level falls from $0P_1$ to $0P_2$ and the proportionate fall $\frac{0P_1 - 0P_2}{0P_1}$ in the general price level is equal to the proportionate fall $\frac{0M_1 - 0M_2}{0M_1}$ in the aggregate money supply.

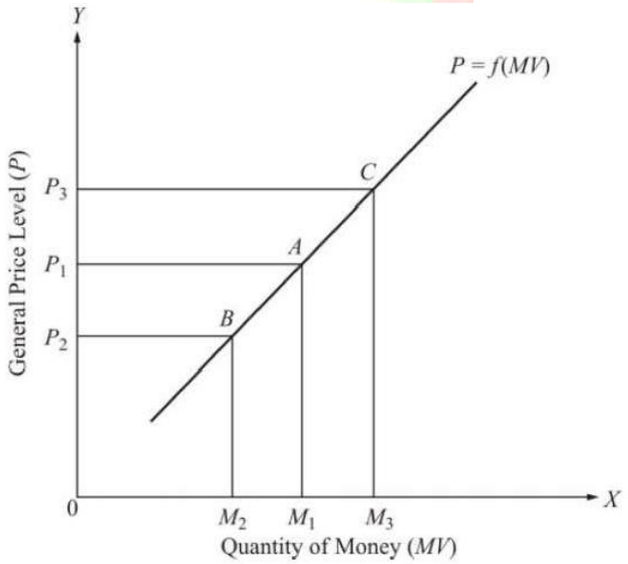

Fig. 10.2 *General Price Level and Quantity*

Figure 10.3 is simply a transformation of Figure 10.2. It shows the relationship between changes in the aggregate money supply (MV) and resulting changes in the value (purchasing power), of money ($1/P$). It is evident that when the quantity of money increases from $0M_1$ to $0M_2$, the value or purchasing power of money falls from $1/0P_1$ to $1/0P_2$, i.e., when the quantity of money is doubled its value is

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halved. Conversely, when the supply of money is halved from $0M_1$ to $0M_3$, the value of money is doubled from $l/0P_1$ to $1/0P_3$. All this necessarily assumes that the demand for real cash balances (*M/P*) remains constant while changes in the nominal money supply take place. In other words, money acts only as a medium of exchange in the economy and it does not influence the given total real output.

Expressed differently, the money elasticity of the aggregate real output is zero. The *LL* curve in Figure 10.3 can also be interpreted as a demand function for the nominal cash balances whose elasticity throughout its length is unitary or one. Such a function assumes the form of a rectangular hyperbola showing that while the demand for the nominal cash varies in the inverse proportion to changes in the value of money, the total demand for the real cash balances (*M/P*) remains constant. Since, the demand for the real cash balances in the economy arises from the need to exchange the aggregate real output, it follows that the aggregate real output is assumed as constant in the rigid quantity theory of money model which the quantity theorists explained in the form of the quantity equations.

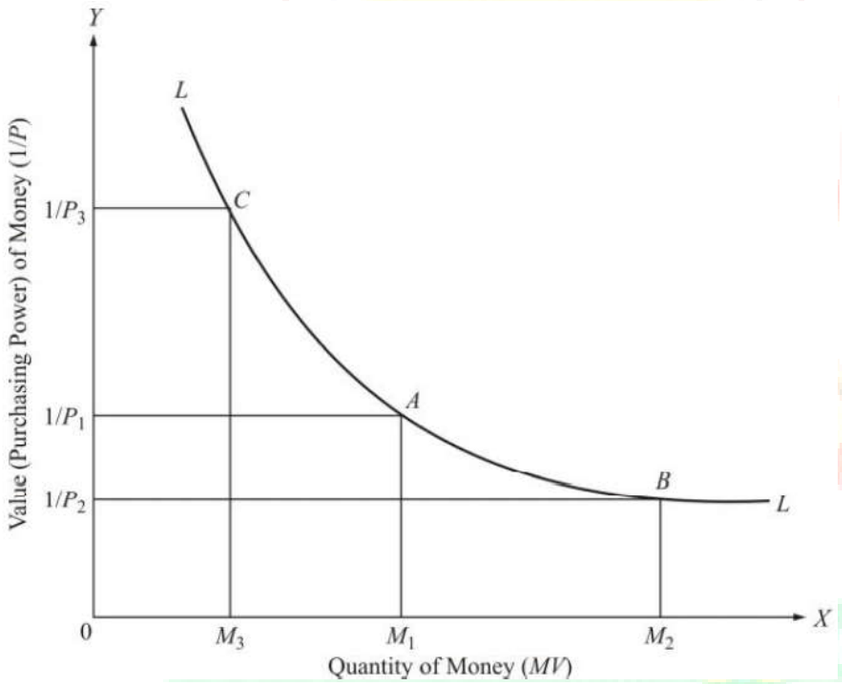

Fig. 10.3 *Value and Quantity of Money*

The direct mechanism of the classical monetarytheorywhich was expounded by Richard Cantillon and David Hume, related the quantity of moneyto the general price level by stating that an increase in the quantity of moneyraises prices directly through its prior effect on the aggregate demand. Since, in the economy money is demanded only as the means of payment and not *per se*, the increase in people's money incomes causes an increase in the aggregate money expenditure flow because people's existing cash holdings are in excess of their desired cash holdings.

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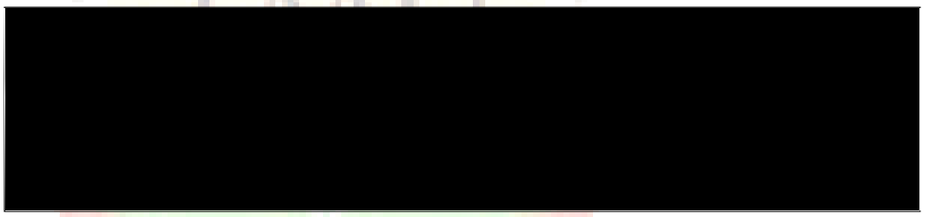
To bring the increased actual cash balances into equilibrium with their desired cash balances, people must get rid of their unwanted (excess) cash balances by spending. In the process of spending, these cash balances increases the aggregate money spending flow in the economy. The effect of this, in the absence of any corresponding increase in the aggregate real output, will be seen in the rise in the prices of goods and services.

The 18th century doctrine which stated that the quantity of money was determined by the 'needs of trade' was based on the assumption that there was a stable demand for transactions cash balances. Both David Hume and Richard Cantillon had studied the manner in which a cash injection in the circular flow of money in the economy was disbursed and the various lags which were involved in the process. In fact, they showed that an increase in the quantity of money would raise the general price level equi-proportionatelyonly if the additional moneysupply was neutrally distributed—if everyone's initial money balances were equi-proportionately increased. As David Hume described it: imagine everyone's money holdings doubled overnight; prices would start rising and in this special case, would continue rising until they had doubled.



10.3 KEYNESIAN APPROACH

Keynes does not agree with the older quantity theorists that there is a direct and proportional relationship between quantity of money and prices. According to him, the effect of a change in the quantity of money on prices is indirect and non-proportional.Accordingto him, changes in the moneysupplyaffect onlythe absolute price level but exercise no influence on the relative price level. He criticized the classical theory of static equilibrium in which money is regarded as neutral and does not influence the economy's real equilibrium relating to relative prices. According to him, the problems of the real world are related to the theory of shifting equilibrium whereas moneyenters as a 'link between the present and future'.

The Keynesian reformulated quantity theory of money is based on the following four assumptions:

- All factors of production are in perfectly elastic supply so long as there is anyunemployment.
- All unemployed factors are homogeneous, perfectly divisible and interchangeable.

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- There are constant returns to scale so that 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.

A change in the quantity of money affects the aggregate effective demand by influencing the rate of interest.

According to Keynes, the ratio between the quantity of the aggregate effective demand and the quantity of money closely corresponds to the 'Income velocity of money' except that the effective demand corresponds to the income the expectation of which has set the production moving, not to the actually realized income, and to the gross, not to the net income. The income velocity of money will not be constant because it depends upon many complex and variable factors.

The quantity theory of money asserts a direct and proportionality relationship between the quantity of money and the general price level. In other words, the money elasticity of the general price level is unity, i.e. $e = \frac{dP}{dM} \cdot \frac{M}{P} = 1$. There is, however, no direct relationship between changes in the quantity of money and changes in the general price level. The general price level will not rise in the same proportion in which the quantity of money increases unless the aggregate effective demand increases in the same proportion in which the money supply increases, i.e., unless the money elasticity of the aggregate effective demand is unity, i.e.,

$$e_d = \frac{dD}{dM} \cdot \frac{M}{D} = 1$$

Furthermore, the general price level has to rise in the same proportion as the aggregate effective demand if the prices have to rise in the same proportion as the increase in the quantity of money. In other words, the elasticity of money prices with respect to the aggregate effective demand as measured in terms of money should be unity or one, i.e., $e_p = \frac{dP}{dD} \cdot \frac{D}{P} = 1$. This condition will be satisfied if the elasticity of aggregate output or supply with respect to the aggregate effective demand is zero, i.e. if $e_p = \frac{dO}{dD} \cdot \frac{D}{O} = 1$ or if the elasticity of money wages with respect to the aggregate effective demand in terms of money is unity, i.e. if $e_w = \frac{dW}{dD} \cdot \frac{D}{W} = 1$. The condition $e_0 = 0$ means that the aggregate output does not respond to an increase in the aggregate effective demand while the condition $e_w = 1$ means that the wage-unit in terms of money, increases in the same proportion in which the aggregate effective demand increases. The aggregate output in either

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case will be unaltered. According to Keynes, the traditional quantity theory of money will be valid if $e = e_p \cdot e_0 = 1$, i.e., if,

$$\frac{dP}{dM} \cdot \frac{M}{P} = \frac{d_P D}{DP} \cdot \frac{dD}{dM} \cdot \frac{M}{D} = 1$$

This means that both the e_d dand e_P must separately be unity or if one is less than unity, the other must be greater than unity such that their product is unity to give the quantity theory of money result, namely that $e = 1$. In general, e is not unity and, as Keynes has stated, 'It is, perhaps, safe to make the generalization that on plausible assumptions relating to the real world, and excluding the case of a flight from currency in which e_d and e_w become large, e is, as a rule, less than unity.'

Keynes' theory of money and prices is superior to the old quantity theory of money. While according to the old quantity theory of money, every increase in the money supply is necessarily the cause of a price rise, Keynes' theory of prices exposes the quantity theory of money's fallacy by stressing the fact that money inflation will result in price inflation only after full employment has been reached. So long as there exist unemployed resources in the economy, increases in the quantity of money will increase employment and not prices. As a guide to practical policy, Keynes' theory of money and prices stresses the desirability of deficit financing by creating and releasing more money in circulation to remove unemployment of resources from the economy. The theory relieves the policy-makers of the unduly false fear of inflation when the economy is caught in the whirlpool of depression. But it warns us to guard against inflation as soon as full employment is reached. Keynes' theory of money and prices is superior to the old quantity theory of money because it recognizes the problem of unemployment of resources in the economy. It also recognizes that the relationship between the quantity of money and the general price level is indirect and complex, and not direct and simple as the naive quantity theory of money makes us believe.

Keynesian Approach to the Demand for Money

John Maynard Keynes' approach to the demand for money is contained in Chapter 15 of his well-known book titled *The General Theory of Employment, Interest and Money*. The classical economists did not stress the permanent store of the value function of money. Consequently, the asset demand for money remained completely neglected in their analysis. According to Keynes, the classical approach to the demand for money was faulty because it ignored the possibility of people choosing to hold money as an asset instead of holding the other financial assets, particularly government bonds when their prices are expected to fall. Keynes explained that the fall in the capital value of a government bond consequent upon even a small increase in the market rate of interest might more than offset the interest income received on such a bond. If the market price of bonds was expected to fall, (i.e., the market rate of interest was expected to rise), a rational wealth-holder would not always convert moneyinto government bonds even though money

was sterile in the sense that it yielded no return in the form of interest income to its owner. To account for such a behaviour, Keynes added the speculative or asset demand for money to the transactions and precautionary demand for money.

According to Keynes, an individual's aggregate demand for money in the given circumstances is the result of a single decision which is the composite of the *transactions*, *precautionary* and the *speculative motives* for holding money. The transactions motive has been further classified into the income motive and the business motive. Under the *income motive,* the aggregate amount of money demanded depends on 'the amount of income and the normal length of the interval between receipt and its disbursement.' Under the *business motive,* the aggregate amount of money demanded chiefly depends on the value of current output, i.e., current income and the number of hands through which the current output passes. The precautionary demand for money, which depends on the *precautionary motive,* arises from the need 'to provide for contingencies requiring sudden expenditure and for unforeseen opportunities of advantageous purchases.'

The strength of the transactions and precautionarymotives for holding money depends partly on the cheapness and the reliability of various methods of obtaining cash when required and partly on the relative cost of holding cash. For example, if people can borrow temporarily through the overdraft facilities provided by the banking system, there will be no necessity to hold cash balances to bridge the time interval between the receipt of income and its disbursement on various items of expenditure. Similarly, if the opportunity cost of holding the cash balances in the form of interest income forgone is high, the strength of these motives will be weak and people will not hold large cash balances for satisfying the transactions and precautionary motives for holding money.

According to Keynes, the demand for money to satisfy these motives, 'is generally irresponsive to any influence except the actual occurrence of a change in the general economic activity and the level of incomes; whereas experience indicates that the aggregate demand for moneyto satisfy the speculative motive usually shows a continuous response to gradual changes in the rate of interest, i.e., there is a continuous curve relating changes in the demand for moneyto satisfy the speculative motive and changes in the rate of interest as given by changes in the prices of bonds and debts of various maturities.' In short, Keynes regarded the transactions and precautionary demand for money as a direct and positive function of the level of money income and the speculative demand for money as a negative function of the rate of interest.

Let us discuss the transactions, precautionary and speculative motives for holding money.

I. Transactions Demand for Money and Keynes

The amount of money which consumers need for the transactions purposes mostly for the buying of consumer goods and services depends on the level of their money

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income, their spending habits and the time interval after which income is received. Given their spending habits and the duration of the pay-period, higher the money income, higher will be the amount of money which will be required for the transactions purpose. Consequently, the transactions demand for money and the level of money income are positively correlated. The transactions demand for money or the transactions component of the aggregate liquidity preference is a positive function of the level of aggregate money income and it can be expressed as:

$$M_1 = L_1(Y)$$

where M_1 is the total cash balances demanded by the people to satisfy their transactions motive, Y is the aggregate money income and L_1 is the liquidity function corresponding to money income Y. The specific form of this demand for money may be written as $M_1 = KY$, where $0 < \bar{K} < 1$. In other words, the transactions demand function for money is positively sloped in relation to income. It is stable and predictable, being free from violent shifts. The positive slope of the transactions demand curve for money shows that with the increase in money income Y (= PO) the transactions demand for money also increases, i.e.,

$$dM_1/dY > 0$$

Figure 10.4 shows the transactions demand for money. The transactions demand for money curve $M_1 = L_1(r) = KY$ shows that the demand for money for transactions purposes changes directly in constant proportion K to changes in the aggregate money income Y, The transactions demand for money KY curve shows that when the aggregate money income is ₹100 crore, the transactions demand for money is ₹50 crore. When the money income increases from ₹100 crore to ₹200 crore, the transactions demand for money increases from ₹ 50 crore to ₹100 crore. Thus, the value of K (proportion of their money income which people hold in the form of money or cash balances) is 0.5 and it is constant.

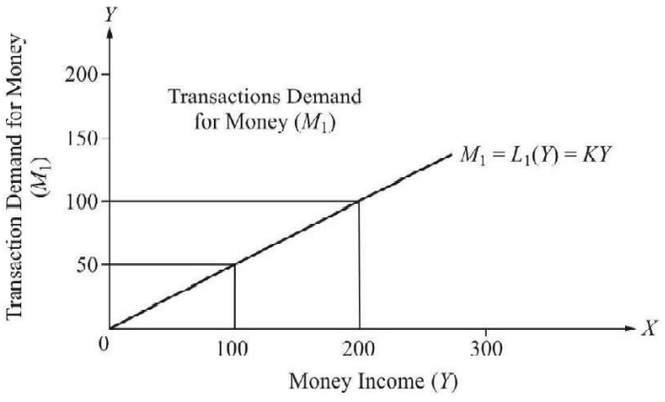

Fig. 10.4 *Transactions Demand for Money*

Apart from money income, the transactions demand for money will also depend on the frequency of income receipts—the length of time period which elapses between the receipt of money income and its disbursement. Shorter the pay period, smaller will be the amount of money which will be required for the

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transactions purpose. For example, we will require less cash for transactions purposes if we are paid for our services after every two weeks than if we are paid after every month.

Given the level of the total money income or transactions, the amount of money which will be required to carry out any given level of money transactions will depend on the payment practices of the community. For example, if the total salary bill of ₹400 crore instead of being paid on a monthly basis is paid on a two-weekly basis in two equal instalments of ₹200 crore each, the same level of money income payments and the volume of transactions could be accomplished with just half the previously required money stock. In the payments, practices should be included to check the frequency of income payments and to settle the bills for transactions. For example, if the consumers make payment to their suppliers only once in a year, relatively less cash will be needed than if the payment was made every time a good was bought. The amount of money required for transactions purposes will also depend on the stage of development of the banking services in the economy and the practice of accepting bank cheques in payment for the goods and services bought by the consumers and producers.

In developed countries like the United States of America, the transactions demand for money would increase considerably if the present 'almost general' practice of accepting cheques in payment and the use of charge accounts was abandoned. The relationship between the transactions demand for money and the payment period has been shown in Figure 10.5 which shows that when the total money income of ₹400 crore is paid once in a month, the entire amount of ₹400 crore is needed to make the disbursement. But if the same sum is paid in two equal fortnightly instalments, the total amount of money needed to disburse the total payment of ₹400 crore in a month is ₹200 crore thereby reducing the transactions demand for money to one-half, although the transactions velocity of money is doubled in the process.

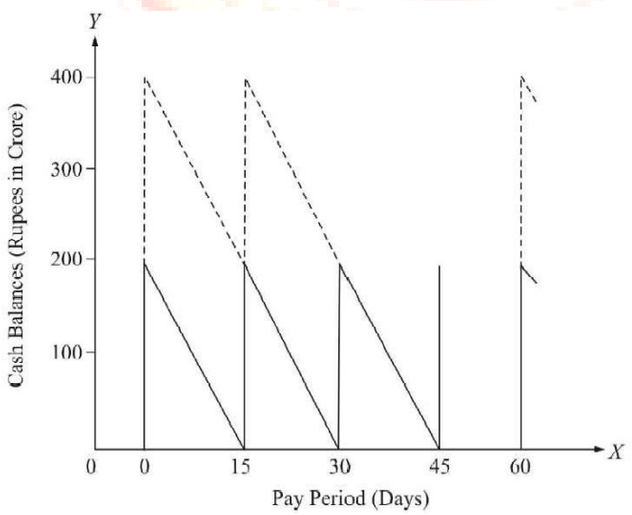

Fig. 10.5 *Relationship between the Transactions Demand for Money and the Payment Period*

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The transactions demand for money will also depend on the nature of the industrial structure of the economy. Where the different industrial units are vertically integrated, the transactions demand for money will be less than if the different business units, being under the control of the different managements, were not vertically integrated. If the different business units operated under control of the same single management rather than each unit being run under a separate management, the inter-unit transactions could be accomplished through mere transfer entries in the account books of the concerned units without involving the actual use of money payment. For example, the inter-unit transactions under the management of Tata Sons Limited could be completed by the mere book transfers without involving actual cash payments.

Transactions demand for money and rate of interest

According to John Maynard Keynes, the transactions demand for money was interest-inelastic. It is, however, possible to expect the transactions demandfor money to vary inversely with changes in the rate of interest. Let us consider the case of an individual who is paid a salary of₹800 on the first day of each month and who spends his total income evenly throughout the month, i.e., his saving per month is zero. Let us further assume that a month has only four weeks. Such an individual's transactions demand for money at any given point of time during the month can be known by means of Figure 10.6(A). For example, in the first week of the month his transactions demand for money will be₹200; in the second week the transactions demand for money will be₹400; in the middle of the second week it will be₹300; in the beginning of the fourth week it will₹600; and so on. His transactions demand for money for the whole month will average out to₹400. Splitting the month only into four weeks(although the whole monthshould be split into 28 days), the individual holds ₹600 completelyidle during the first week; ₹400 during the second week; and ₹200 during the third week of the month. In other words, he has with him₹200 surplus cash for three weeks; another₹200 surplus cash for two weeks; and yet another ₹200 surplus for one week. He can therefore, earn income by converting his idle cash balances into interest-bearing securities for the appropriate periods. Figure 10.6(B) and Figure 10.6(C) show what he can do. Figure 10.6(C) is simply a mirror image of Figure 10.6(A), i.e., Figure 10.6(C) is the obverse of Figure 10.6(A). On the first day of the month when he receives his pay of₹800, he will retain ₹200 with him which is sufficient for his first week's expenses. He will buy government bonds with the rest of the money, i.e.,₹600 which is surplus with him during the first week.At the beginning of the second week he will encash₹200 of his interest-earning assets to meet his second week's expenses. He will do the same at the beginning of the third and fourth weeks. In this manner, the average transactions demand for money for this individual will be reduced to₹200 for the month as shown in Figure 10.6(B) and his average interest-earning asset balance for the month will be₹400 as shown in Figure 10.6(C).

The question, however, is: do people generallybehave in this manner? People may plan their investment of surplus money in the manner discussed by opening

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savings bank account and earn interest if this is made possible by the banking system.Alternatively, theymaypurchase government securities, such as the treasury bills or other short-term money market instruments like commercial paper and earn interest on their surplus transactions cash balances. There is, however, some positive cost involved in the buying and selling of these instruments. The individual will weigh the financial cost and inconvenience involved in the frequent entry into and exit from the money market against the gain which he is likely to make by holding interest-bearing securities in place of holding the idle transactions cash balances. In short, *inter alia,* the cost involved first in purchasing and afterwards in selling the securities, the interest income which would accrue by holding the securities and the frequency of purchases and sales determine the profitability of converting the surplus transactions cash balance into the interest-earning assets. Given the cost of buying and selling a security, there will be some high enough interest rate at which it will be profitable to convert the transactions cash balances into securities. Higher the rate of interest, greater will be the lure to swap the surplus transactions cash balances for the suitable short-dated interest-bearing credit risk-free government bonds and other similar approved securities.

Figure 10.7(A) shows the relationship between the aggregate money income (Y), the rate of interest (r) and the aggregate transactions demand for money (M_1) for the economy. Given the aggregate money income Y = ₹100 crore and K = 0.5, the transactions demand for money is ₹50 crore as depicted by the Y_1 curve. Similarly, for the aggregate money income Y = ₹ 200 crore and Y = ₹ 300 crore, the transactions demand for money is ₹100 crore and ₹150 crore respectively. The total transactions demand for money is constant at ₹ 50 crore, ₹100 crore and ₹150 crore corresponding to the aggregate money income Y_1 = ₹100 crore, Y_2 = ₹200 crore and Y_3 = ₹300 crore respectively upto 12 per cent rate of interest. In other words, so far it is perfectly interest-inelastic. Above the 12 per cent rate of interest, the transactions demand for money gradually becomes interest-elastic showing that given the cost of converting money into interest-bearing securities and thereafter reconverting these securities into money, the rate of interest is high enough to lure people to convert a part of their surplus transactions cash balances into securities. As the rate of interest rises, the amount diverted into securities increases. If there is truth in the statement that at some high enough rate of interest the aggregate transactions demand curve for money for the economy starts to slope backward, the equation for the transactions demand for money will be $M_1 = f(Y, r)$ showing that there is no simple proportionality relationship between the transactions demand for money (M_1) and the aggregate money income (Y). For simplicity of analysis, we will, however, assume that the transactions demand for money is perfectly interest-inelastic being exclusively determined by the level of money income. In other words, in terms of Figure 10.7(A) while increases in the money income shift the transactions demand curve for money to the right as from Y_1 to Y_2 and further to Y_3, the curve remains nevertheless perfectly interest-inelastic regardless of the level of the rate of interest. Under the assumption of perfectly interest-inelastic transactions demand for money, the Y_1, Y_2 and Y_3 curves for the

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transactions demand for money of Figure 10.7 will appear vertical showing that whatever may be the rate of interest the total money required for the transactions purposes remains constant at ₹50 crore; ₹100 crore and ₹150 crore when the aggregate money income is ₹100 crore; ₹200 crore and ₹300 crore respectively. Consequently, Figure 10.7(A) becomes modified as Figure 10.7(B) and it is no longer necessary to divide the entire transactions demand curve for money into the interest-elastic part and interest-inelastic part since the curve throughout is interest-inelastic.

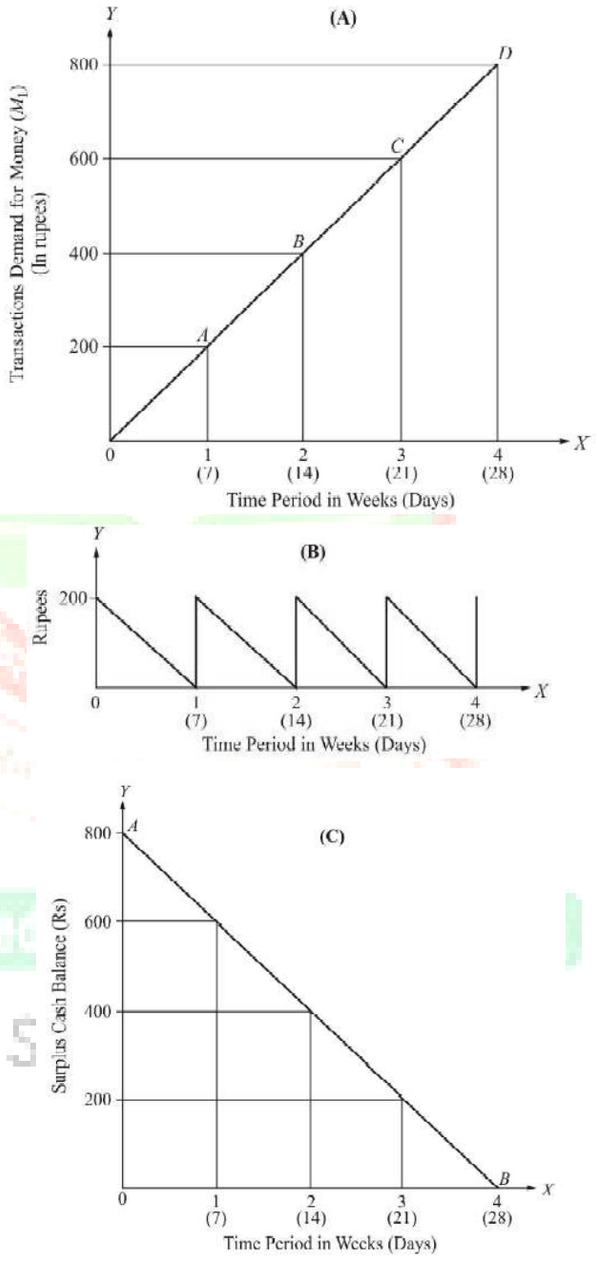

Fig. 10.6 *Transactions Demand for Money Vary Inversely with Changes in the Rate of Interest*

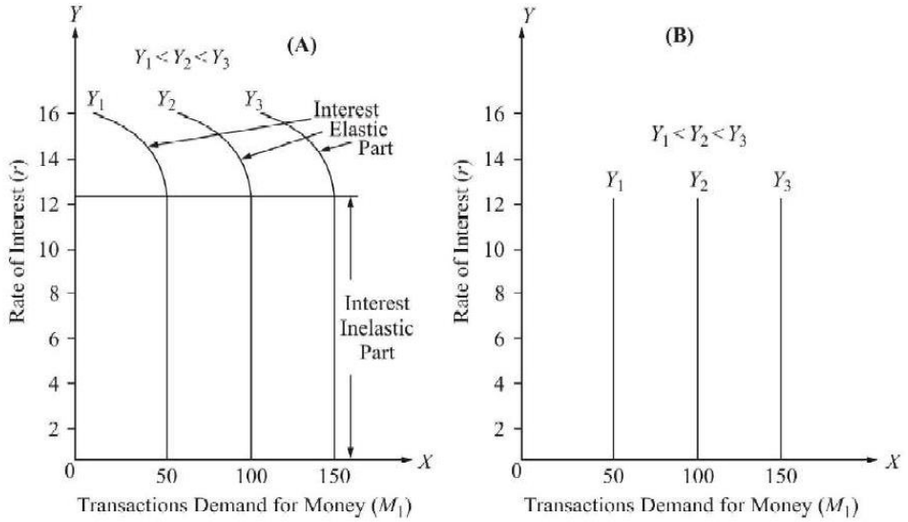

Fig. 10.7 *Transactions Demand for Money and Rate of Interest*

II. Precautionary Demand for Money

Apart from demanding money for transactions purposes, individuals and businessmen require money to meet unforeseen contingencies. One finds it convenient to hold some cash on which one can lean readilywhen some unforeseen need arises. While going out for shopping one normally takes more money with oneself than is sufficient for his planned purchases because his plans might change or one might find some excellent opportunity in the market to shop at advantageous terms. To the businessmen, the need for having immediate cash arises to meet the contingent liabilities or unforeseen opportunities to enter into advantageous purchases. The total quantity of money needed to satisfy the precautionary motive varies with individuals and firms depending upon their degree of conservatism, nature of business, access to the money market and the stage of development of the organized bill market providing facilities of quick conversion of interest-bearing assets, like bonds, into cash. 'Danger of being cut off from the credit market, say as a result of business losses, will be an especially important factor tending to increase the size of precautionaryholdings bybusiness firms.As long as individuals and businesses feel assured of ready access to extra cash by temporary borrowing, the precautionary motive to hold money will be relatively weak' and *vice versa.*

According to Keynes, like the transactions demand for money, the precautionary demand for money is also a positive function of the level of income and is insensitive to changes in the rate of interest. Keynes has lumped together the transactions demand and the precautionary demand for money under M_1. Consequently, in the equation $M_1 = L_1(Y)$, the term M_1includes both the transactions demand and the precautionary demand for cash balances. The precautionary demand for money does not form part of the classical quantity theory of money because this theory assumes a world of perfect certainty where all receipts and

expenditures are known. Keynes breaks new grounds by introducing uncertainty. Lack of knowledge about what the future has in store is the basis for holding the precautionary cash balances on the part of people.

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III. Speculative Demand for Money

The statement that money is held by people for transactions and precautionary purposes is in conformity with the classical approach to the demand for money because transactions demand for money is dependent on money's function as a medium of exchange in the economy while the precautionary demand for money can be added to the classical approach without materially altering its conclusions. The speculative demand for money, however, marks a complete break with the classical theory of the demand for money. The speculative demand for money recognizes money's role as a permanent store of value or as Milton Friedman has termed it the permanent abode of purchasing power.

According to the classicists, people would not hold assets in the unproductive or barren form of money because by doing so, they would have to forgo interest income which could be earned by purchasing interest-bearing riskless government securities instead of holding money which was barren. Even if the rate of interest was low, it was better to earn some income than none at all. This argument would, however, hold if the current rate of interest was also expected either to prevail or to fall in future, i.e., if the present rate of interest was not expected to rise. Keynes argued that if the people speculated that the rate of interest will rise (bond prices will fall) in future, they might prefer to hold barren—non-interest bearing—money rather than convert in into interest-bearing securities. Thus, expectations entertained by the wealth-holders regarding the rate of interest to rise in future lures them to hold money for the speculative purpose.

If the future rate of interest was known with certainty, there would be no speculative demand for money and it would be difficult to criticize the classical approach to the demand for money. The asset or speculative demand for money arising from future uncertainty about the current rate of interest to remain stable was an important contribution of Keynes to the theory of the demand for money.

Criticism of the Keynesian Theory of Demand for Money

The Keynesian theory of demand for money was undoubtedly a radical improvement over the classical and neoclassical theories of money. His theory has however been criticised on the following grounds.

First, Keynes' division of demand for money between transaction, precautionary and speculative motives is unrealistic. For, the people do not maintain a separate purse for each motive. They have one purse for all purposes. Besides, empirical evidence shows that, contrary to Keynes' postulate, even the transaction demand for money is interest-elastic.

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Secondly, critics reject the Keynesian postulate that there exists a 'normal' rate of interest and the current rate of interest may not necessarily be the same as the normal rate: there may always be difference between the two. According to Keynes, the speculative demand for money is governed by the difference between the 'normal' and the current rates of interest. But, the critics argue that if the current rate of interest remains stable over a long period of time, people tend to take it to be the normal rate. Consequently, the difference between the current rate and the normal rate disappears. With it, disappears the basis for speculation and the speculative demand for money.

Thirdly, Keynes assumed unrealistically that the people hold their financial assets in the form of either idle cash balance or bonds. In fact, people hold their assets in a combination of both the assets.

Let us briefly discuss the criticism of Kenynes theory of speculative demand.

Although Keynes' theory of the speculative demand for money is fundamentally different from the accepted orthodox classical theory, it has been nevertheless criticized on various grounds. It has been argued by the critics that it is unscientific to separate artificially the demand for money into three parts as has been done by Keynes for the reason that people do not keep with them three separate purses in order to use money for the three different motives. Moreover, transactions demand, precautionary demand and speculative demand for money all depend to some extent on both the level of income and the rate of interest. Consequently, we should consider only a single unified demand function, and not the two separate demand functions for money, which depends on the level of income, rate of interest and the wealth variables.

Critics have also criticized Keynes' approach to speculative demand for money. They have argued that since it depends on the difference between the current rate *rc* and the normal interest rate *rn* it would disappear if the difference between these two interest rates disappeared and the difference would disappear if the current interest rate *rc* remained constant for a long time. In other words, the critics have argued that any rate of interest, no matter how low, will tend to be normal interest rate if it prevailed long enough causing elimination of the expectations of capital loss and consequently disappearance of the speculative demand for money. The critics have also argued that empiricallyit has beenfound that individuals do not hold all their wealth either in the form of bonds or money but in some composite form made up of bonds and money.

In his classic article, James Tobin has developed a sophisticated analysis of portfolio selection under uncertainty which meets the shortcomings present in Keynes' analysis of the speculative demand for money. According to Keynes, an individual wealth-holder discretely decides to hold either bonds or money and not both. According to Tobin, rational behaviour induces an individual to hold a wealth portfolio which is comprised of both bonds and money.

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In order to demonstrate Tobin's analysis of rational portfolio selection under uncertainty, let us assume that at the beginning of some given time period, initially an individual wealth-holder a wealth portfolio of certain given size $W0$. We also make the most likelyassumption—which is an essential part of rational behaviour—that the individual wealth-holder prefers more wealth to less wealth. Given these two assumptions, the individual wealth-holder is faced with the formidable problem of deciding as to what fraction of his total wealth portfolio he should hold in the possesses form of consols (we assume that consol is the onlyform of bond available to him) and what fraction he should hold in money.

According to the Keynesian theory, the individual holds either all the money or all consols based on the expected future rate of interest—the *normal rate*. However, if the more realistic assumptions of uncertainty about the future rate of interest and of the equal probability on the part of average individual wealth-holder to underestimate and overestimate this interest rate are made, then after many years the average capital gain or loss will be zero although in any given year either a capital gain or a capital loss can occur. The extent to which a capital gain or loss will occur will depend on the amount of uncertainty about the future interest rate. Tobin demonstrated that for a given uncertainty about the future interest rate, the wealth-holder bears a greater or smaller risk as he holds a larger or smaller proportion of his total wealth portfolio in the form of consols.

10.3.1 Neutrality of Money

The essential feature of classical macroeconomic analysis is that it presents a model of full employment in the economy in the long period. Underlying the analysis, are the assumptions of perfect competition in the factor and product markets and profit-maximization on the part of firms. There are three markets to study. First, there is the labour market which deals with the supply of and the demand for labour. The equilibrium condition for full employment in the labour market requires that the wage should be one corresponding to which the demand for and the supply of labour in the market are in equilibrium, i.e., there is neither an excess supply of nor an excess demand for labour in the market. In the labour market we are concerned with the analysis of the form of the aggregate demand and the aggregate supply functions of labour.

Second, there is the product market with its equilibrium flow condition which is equivalent in macroeconomic equilibrium to an equality between saving and investment. The equilibrium condition in the capital–bonds–market requires the equilibrium between the *ex ante* investment and *ex ante* saving. Third, there is the money market which is concerned with the demand for and the supply of money. The first two markets deal with the equilibrium of the real sector of the economy while the money market is concerned with the equilibrium of the monetary sector of the economy. The equilibrium in the monetary sector determines the absolute price level which does not influence the relative prices, aggregate employment and output which are determined in the real sector of the economy. In short, there is a

dichotomy or separation between the real and monetary sectors of the economy in the classical economic system. This dichotomy arises from the argument of the classicists that 'money is a veil' (neutral).

In the classical economic theory, money does not matter and its function in the economy is merely to facilitate the real transactions by serving as a medium of exchange. It is neutral and does not interfere with the real processes of production and distribution in the economy; it only facilitates production, i.e., lubricates the wheels of the economic system. According to the classicists, changes in the money supply cause proportionate changes only in the equilibrium values of the *nominal* variables, leaving the equilibrium values of the *real* variables (output, employment, real wage, interest rate, etc.,) unchanged. The equilibrium values of these real variables are exclusively and solely determined in the real sector—in the labour, capital and commodity markets. In the classical macroeconomics, the economy's real sector can, therefore, be dichotomized from its monetary sector.

Money, however, does something more than merely act as a medium of exchange in the economy. In a dynamic world with uncertain future, money is also demanded for asset purposes. Consequently, it influences both the production and distribution in the economic system. In other words, changes which take place in the monetary sector also influence the real sector of the economy.

10.3.2 Classical Dichotomy

Fischer's theory is open to further criticism for it divorces the theory of the value of moneyfrom the general theoryof value causing the classical dichotomy between the real and monetary sectors of the economy. The fact is that like any other commodity, the value of money is also determined by the demand for and the supply of money. The general theory of value with its supply and demand tools can explain the determination of the value of money. There is, therefore, no case for a separate theory to explain the determination of the value of money.

Evaluating the traditional cash-transactions equation in 1930 in his well-known work, *A Treatise on Money*, John Maynard Keynes wrote the following:

'The great advantage of this formula is the fact that one side of it, namely *MV*, fits in better than most with the actually available banking statistics. For quantitative inquiries it is possible, therefore, to make more progress with this formula than with any other. *MV* corresponds, more or less, to the volume of bank clearing and *M* to the volume of deposits, for both of which figures are available, so that the value of *V* can be deduced. Its weakness, on the other hand, is to be found on the other side of it, namely *PT*. For neither *P* nor *T* corresponds to quantities in which we are likely to be interested for their own sake. *P* is not the Purchasing Power of Money and *T* is not the Volume of Output. Professor Fisher has not, indeed, been oblivious to those defects, but he has not, I think, rated them as high as he should. Nor do the approximations which he has employed for their evaluation command confidence '

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10.4 REAL BALANCE EFFECT

The *Pigou effect*, also called the *real-balance effect*, is named after the well-known Cambridge School economist, Arthur Cecil Pigou, who first formulated the relationship between the aggregate consumption, the real cash balances and the general price level.This particular effect was advanced to counter the Keynesian argument that a fall in wages and prices exerts its influence onlythrough the interest rate changes which becomes inflexible in the downward direction at the liquidity trap interest rate where the aggregate effective demand was less than necessary to ensure full employment in the economyand to defend the classical position relating to the effect of the general wage-cut in achieving full employment in the economy during the course of a serious controversy which ensued in the early 40s between Arthur Cecil Pigou and John Maynard Keynes. Keynes had strongly refuted the classical argument that a general wage-cut could remove unemployment in the economy.

John Maynard Keynes and his followers had demonstrated the failure of a perfectly competitive free market economy to achieve a stable equilibrium at full employment. The Keynesians argument opened the floodgates of government intervention expressed in the economic articles. It was at this time that other economists, particularly Gottfried Von Haberler and Arthur Cecil Pigou took position to challenge this conclusion suggesting that the Keynesians had ignored the importance of the real-balance effect on an individual's behaviour. The arguments of both Pigou and Haberler were based on the assumption of the important role of wealth in the determination of the consumption function.

The Pigou effect or the real-balance effect measures, *ceteris paribus*, the influence of the change in an individual wealth-holder's real balances on the aggregate effective demand. Pigou had argued that a general price fall which was associated with a general wage-cut would, by increasing the real value of the cash balances of individuals, raise the level of aggregate demand in the economy by shifting the aggregate consumption function upward. If, in fact, an increase in the real value of wealth stimulates consumption, it could then be conceived that there would always be some amount of fall in the wages and prices which would be sufficient to increase the aggregate consumption enough to eliminate anydeficiency in the aggregate effective demand at the full employment level in the economy. Pigou's following statement bears repetition here because different interpretations have been ascribed to it.

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According to Pigou, 'as money wage rates fall, money income must fall also and go on falling. Employment, and so real income, being maintained, this entails that prices fall and go on falling, which is another way of saying that the stock of money, as valued in terms of real income, correspondingly rises. But the extent to which the representative man desires to make savings otherwise than for the sake of their future income yield depends in part on the size, in terms of real income, of his existing possessions. As this increases, the amount that he so desires to save out of any assigned real income diminishes and ultimately vanishes, so that we are back in the situation...where a negative rate of interest is impossible.'

But how does the Pigou effect operate? Assume that investment falls so that income and employment also fall in the economy. As a consequence of general unemployment, moneywages in the economyfall which causes the production costs and prices to fall. In short, an all-around wage-price deflation grips the economy. Now what happens to the wealth portfolios of the wealth-holders? The total wealth of the wealth-holders comprises of the different forms of real and nominal assets. So far as the real assets—land, buildings, and common-stock shares—are concerned their prices will also fall with the general fall in prices in the economy. Consequently, the real value of these assets will not change. However, the general fall in prices will increase the real value of the fixed money or nominal assets such as money, savings bank deposits, government bonds, etc.

The increase in the real wealth of their fixed money assets will induce the wealth-holders to save a smaller fraction of their income and to spend a larger fraction of their income on consumption. Consequently, the aggregate consumption function will shift upward showing a higher aggregate consumption at each different level of aggregate income. This will raise the level of aggregate effective demand, output and employment in the economy. Thus, there would be a certain fall in the general price level which will raise the real value of a given stock of fixed money assets. This will further shift the aggregate consumption function upward by the amount necessary to shift the aggregate demand function upward to that position which yields the stable, full employment, equilibrium, aggregate, real income in the economy.

To the extent that the equilibrium aggregate real income and output in the economy can be raised through the operation of the Pigou effect, Pigou can be said to have succeeded in defending the classical position that in a perfectly competitive free market economy, full employment equilibrium was possible through the wage-price flexibility. It states that so long as the commodity prices, wages and interest rate are perfectly flexible, the system is capable of moving to the full employment level. Permanent unemployment in macrostatic analysis is possible if and onlyif one or more of these price variables are rigid.Arigid moneywage can result in permanent unemployment. Soalsoa rigid price level and arigid interest rate canleadto permanent unemployment. Inotherwords, Pigouwon'triumph' for theclassical economictheory

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by showing that so long as wages and prices were flexible in the economy, full employment equilibrium output could be attained.

Basically, Pigou argued that if consumption depended on both the disposable personal income and wealth, the aggregate consumption function could be written as:

$$C = f(Y_d', W)$$

Real cash balances comprise a part of individuals' total stock of wealth. Unlike the physical wealth whose nominal value rises or falls with a rise or fall in the general price level, the nominal value of money remains constant and its real value moves inversely with changes in the general price level. For example, if prices double, the real value or purchasing power of ₹100 is halved and *vice versa.* If these real cash balances represent net financial assets—financial claims against which there are no offsetting liabilities—changes in the general price level will inversely affect the net wealth of the entire economy. If the general price level falls when there is depression in a perfectly competitive economy, the net wealth would rise. Consequently, consumption spending out of any given income would also rise.

As consumption rises, the *IS* curve shifts rightward raising the aggregate demand in the process. In other words, a real-balance effect occurs in the household sector raising the aggregate demand in the economy as the general price level falls and *vice versa.* This is the Pigou effect.

Figure 10.8 shows the influence of the Pigou effect on the consumption-saving relationship. As the general price level falls from P_3 to P_2 to P_1 and eventually to P_0, the real cash balances and net wealth increase. Consequently, the short period consumption function shifts upward and concomittently the short period saving function shifts downward as shown in Figure 10.8(A). As the saving function shifts downward with each fall in the general price level, a new *IS* curve corresponding to each new general price level is generated as shown in Figure 10.8(B). With each change (fall) in the general price level, a new *LM* curve is also generated as shown in Figure 10.8(B) showing the money market equilibrium. The intersection points *A, B, C* and *D* in Figure 10.8(B) furnish us with the level of aggregate demand at each different general price level. The respective points on the aggregate demand curve which is generated by changes (falls) in the general price level have been labelled as *A*, *B*, *C* and *D* in Figure 10.8(C). Due to the presence of the Pigou effect in the commodity market, a price-elastic aggregate demand curve is generated which makes it possible to achieve a stable full employment equilibrium in a perfectly competitive economy notwithstanding the presence of the Keynesian liquidity trap. Even if instead of the presence of the Keynesian liquidity trap, the situation represented insufficiency of investment, the consequences of the presence of the Pigou effect would have remained unchanged.

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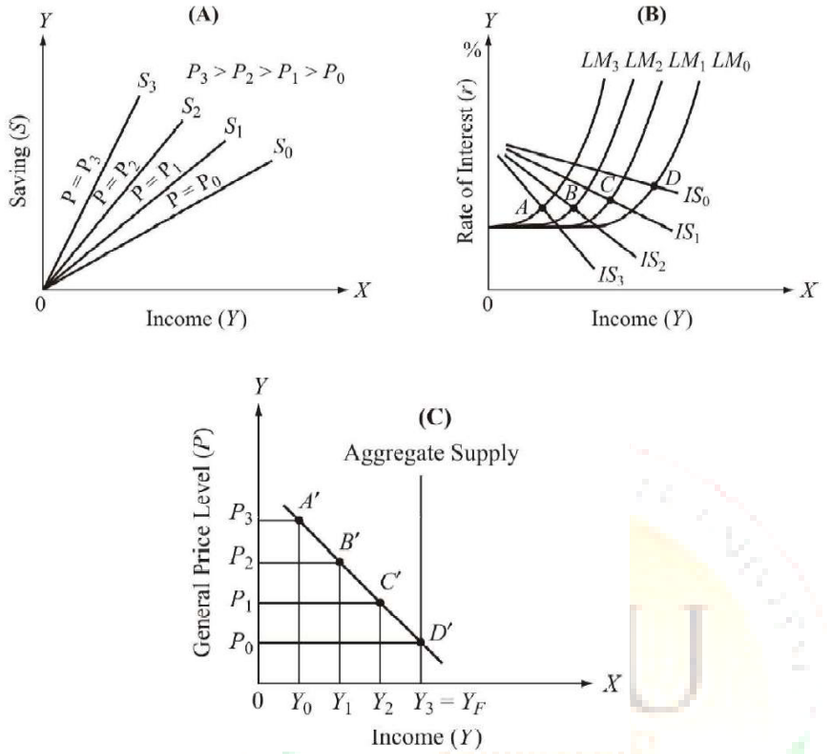

Fig. 10.8 *Influence of Pigou Effect on the Consumption-Saving Relationship*

In short, the Pigou effect is of great theoretical importance because it shows that aperfectlycompetitive economyiscapable of achievinga stable full employment output equilibrium. Its presence ensures that the monetary policy will always be effective as it can directly increase the net wealth of the households.

Criticism

Today, however, economists concede no such victory to Pigou and the classical macroeconomic theory. The Pigou effect has been criticized on several grounds and Pigou's efforts to salvage the classical theory from Keynes' attack has not proved successful. Pigou himself admitted that his analysis was simplyan academic exercise 'of some slight use perhaps for clarifying thought, but with verylittle chance of ever being posed on the chequer board of actual life.' He felt that at least on social ground, no government would allow the extreme drastic cuts in money wage which were needed for the real-balance effect to be effective in eliminating the deficiency of the full employment aggregate effective demand in the economy.

1. The Pigouvian argument cannot apply to all fixed money assets. Although the real value of these assets held by the creditors increases as the general price level falls, however, this also increases the real burden of debt for the debtors. Consequently, the increase in the creditors' average propensity to consume may be offset by the decrease in debtors' average propensity to

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consume, leaving the average aggregate propensity to consume unchanged. This criticism could, however, be countered by arguing that the real-balance effect should be confined to only government bonds and money obligations because the government is a debtor whose spending will not be adversely affected by an increase in the government debt burden consequent upon the fall in the general price level. In short, deflation increases the real value of wealth-holders' government debt holdings—currency and bonds—and consequently stimulates consumption spending of the government debt holders without at the same time causing decrease in the aggregate government spending. The net effect, as was argued by Pigou, of an increase in the real cash-balances of the asset-holders was an increase in the aggregate spending.

Assuming that the Pigouvian argument holds, the crucial question, however, is: how much rise in the aggregate consumption spending will any given fall in the general price level bring about? In the face of a certain amount of unemployment, it is one thing to say that a 5 per cent fall in the general price level and the accompanying increase in the real value of the cash balances is sufficient to raise the level of aggregate effective demand (by raising consumption) to rid the economy of unemployment and quite another to say that a 50 per cent fall in the general price level was necessary before unemployment could be removed through the remedy of Pigou effect. Unfortunately, there is nothing in the Pigou effect which could tell us about the magnitude of deflation needed to eliminate any given size of unemployment. At best, it speaks only about the direction of the effect of any given increase in the real value (worth) of liquid assets.

If a severe deflation is advocated as a remedy for unemployment, it would be foolish to rely on the Pigou effect as a practical measure to restore full employment in the economy. In fact, a severe deflation which was characteristic of the great depression witnessed in the 30s of the 20th century and mass unemployment could coexist as economic phenomena although the Pigou effect makes us believe to the contrary. Moreover, a once and for all deflation, even if it could be produced, would not work. When prices fall perceptibly, people begin to entertain the expectation that these will soon rise on the onset of recovery. In this situation, wealth-holders will treat the increase in the real value of their fixed rupee assets as purely temporary and they may not increase their consumption spending. Mayer's study suggests that the Pigou effect is too weak to be of any practical significance. As against this, however, the study made by Ta-Chung Liu suggests that the Pigou effect is of considerable strength and should not to be ignored.

2. The Pigou effect assumes that wealth-holders' taste for wealth does not increase with an increase in their wealth stock, i.e., their propensity to accumulate wealth remains constant. George Katona has argued that one's

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taste for wealth should increase with the increase in one's wealth. If this was so, the whole a *priori* basis of the Pigou effect is challenged.

3. A fall in the general price level may create expectations of a further fall in the general price level. Indeed, people may entertain the strong expectation that the fall in prices will continue unabated. In the face of such expectations, consumers will postpone their purchases because by doing so they hope to get more for their money. Consequently, the consumption function will not shift upward, rather it might shift downward contrary to the Pigouvian expectation. In the face of this possibility, deflation might make the situation worse by increasing the rot of unemployment further rather than restoring stability in the economy by reducing it.
4. The Pigou effect is a comparative static theoretical proposition. It says nothing about the dynamics of a slow adjustment to gradual deflation causing undesirable redistribution of income and wealth in favour of the 'rentier' class and against the 'active' entrepreneurial class reducing the employment opportunities in the process. The Pigou effect maybe regarded as an argument favouring a long-run downward trend in the prices which would adversely affect the employment position of the mass of consumers by adversely affecting the business profits.
5. The Pigou effect is inconsistent with the neo-classical dichotomy between the real and the monetary sectors of the economy. If it is assumed (though wrongly), as the classicists did, that since in an economy the real markets are separate from the financial markets then how can changes in the general price level affect the level of aggregate real demand by affecting the real consumption spending. The real-balance effect integrates the monetary and value theories (the monetaryand real sectors of the economy). It is, therefore, obvious that the inclusion of the real-balance effect in the classical model violates the classical assumption of the dichotomy between the real and the monetary sectors of the economy and the exclusion of the real-balance effect from the model involves it in a contradiction. Suffice it to say that generally a macroeconomic model is not dichotomizable since it is usually impossible to separate the system into a self-contained subset of markets and to determine the equilibrium values of the subset of variables. Normally, in the economy everything depends on everything else suggesting interdependence between the different real and monetary variables.
6. The Pigou effect ignores the adverse effect of deflation on the non-cash or real component of the total wealth portfolios of individual wealth-holders. The fall in prices, particularly if it is perceptible, will cause a substantial fall in the real value of property and other non-cash assets of wealth-holders. Consequently, the favourable effect of a general price fall on the cash assets will be offset or may even be more than offset by the adverse effects of such a price fall on individual wealth-holders' non-cash assets. It is for these

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reasons that the economists do not consider the Pigou effect as meriting any serious attention. Even the neo-classical economists did not necessarily recommend that the government should wait passively for the deflationary disturbance to occur in order to bring about the required increase in the real balances to eventually re-establish the state of full employment in the economy. All they wanted to do was to demonstrate the theoretical rectitude and consistency of the classical macroeconomic assertion that in a world characterized by downward wage-price flexibility full employment was guaranteed. On the basis of the Pigou effect alone, it cannot be legitimately argued that social policyshould be directed towards achieving the maximum degree of price flexibility in the pious hope of removing unemployment in the economy. In short, the Pigou effect has little to commend as a practical economic policy approach to the solution of the unemployment problem.

Although the Pigou effect is of little practical importance, yet it is of extreme theoretical importance in as much as it produces a stable full employment equilibrium in a perfectly competitive free enterprise market economy. In an economy characterized by downwardly rigid money wages, the invocation of the Pigou effect will not ensure full employment equilibrium and such an economy is destined to remain in a state of stable equilibrium at less than full employment.

In a regime of downwardly rigid wages and prices, the Pigou effect contributes virtually nothing to an automatic return to full employment equilibrium. Even if prices and wages are somewhat flexible, the magnitude of the Pigou effect would probably be too small to be of practical significance. The Pigou effect, however, asserts that monetary policy can restore full employment even if the special Keynesian conditions—insufficiency of investment and the liquidity trap—prevail in the economy. Thus, the Pigou effect demolishes the Keynesian argument against the effectiveness of monetarypolicy. Since recent research has shown that neither of these two conditions have actually occured and it seems unlikely that these will be encountered in the foreseeable future, there appears no basis to uphold the views of those who reject the monetary policy completely and place an exclusive reliance on the fiscal policy as an instrument of economic stabilization policy.

10.4.1 Don Patinkin's Real Balance Effect

Patinkin added on to the Real Balance Effect by criticizing Pigou's approach to show that the demand curve for money could not be a rectangular hyperbola. The main thrust of Patinkin was that real balance effect was being ignored in the cash balance approach with the assumption of 'homogeneity postulate'. It failed to recognize the correct relation between the theory of money and the theory of value.

The homogeneity postulate simply implied that the demand functions in the real sectors are considered to be insensitive to the changes in the absolute level of money prices. However, this could only be true in barter system and not real world.

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Patinkin's Assumptions

There were certain assumptions made by Patinkin through the rehabilitation of the classical quantity theory of money:

- It is assumed that an initial equilibrium exists in the economy
- There is a stable system with no destabilizing expectations
- There is the presence of only those factors which were specially assumed during the analysis
- Consumption functions remain stable
- There are no distribution effects
- There is no money illusion

You can observe that Patinkin questions the quantity theory only under conditions of full employment.

For instance, consider that a person has stock of certain money balances (the actual purchasing power) and there is a fall in price level, as a result the real value will increase given that the person now has a larger stock of money in real terms but in nominal units, there will be a decrease. This is to say that the real balance effect and demand for money affects the quantity theory of money in the form of stock of real balances with people, thereby affecting their demand for money. The real balance effect affects the equilibrium in the money market. For instance, in case prices fall below the equilibrium level, the real wealth of people will increase, leading to increased spending and prices reaching equilibrium levels.

Real balance effect here tends to negate the classical problem that relative prices cannot be discussed without introducing money. But it uses the classical approach to say that the equilibrium is not affected by the amount of money but the price levels.

In conclusion, it can be said that Patinkin's real balance effect was made to showcase the effect real stock of money had on consumption expenditure. As per Patinkin, the Pigou effect only used Real balance effect for consumption expenditure, but it could be made useful by applying it to myriad of situations including the changes in the stock of real balances.

10.5 ANSWERS TO CHECK YOUR PROGRESS QUESTIONS

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1. According to the monetary explanation, changes in the general price level in the economy are caused by changes in the total quantity of money in circulation.
2. Hume introduced the notion of causality between the total money supply (*M*) and the general price level (*P*) laying down this commonly accepted version: *T* and *V* being insensitive or non-responsive to monetary changes, *M* and *P* will vary equi-proportionately. This proposition is, however, valid only so long as money in the economy is merely a standard of value and a medium of exchange.
3. Keynes' theory of money and prices is superior to the old quantity theory of money because it recognizes the problem of unemployment of resources in the economy. It also recognizes that the relationship between the quantity of money and the general price level is indirect and complex.
4. The essential feature of classical macroeconomic analysis is that it presents a model of full employment in the economy in the long period.
5. The Pigou effect or the real-balance effect measures, *ceteris paribus*, the influence of the change in an individual wealth-holder's real balances on the aggregate effective demand.
6. The homogeneity postulate simply implied that the demand functions in the real sectors are considered to be insensitive to the changes in the absolute level of money prices.

10.6 SUMMARY

- According to the monetary explanation, changes in the general price level in the economy are caused by changes in the total quantity of money in circulation. According to the other explanation, changes in prices are caused by the non-monetary factors such as war, famine, weather changes or some other special circumstance. The first explanation of changes in the prices has been labelled as the quantity theory of money. According to the quantity theorists, the principal thrust of anygiven change in the total supplyof money is to cause changes in the level of prices in the economy.
- Hume introduced the notion of causality between the total money supply (*M*) and the general price level (*P*) laying down this commonly accepted version: *T* and *V* being insensitive or non-responsive to monetary changes, *M* and *P* will vary equi-proportionately. This proposition is, however, valid only so long as money in the economy is merely a standard of value and a medium of exchange. In such a situation, this proposition is a tautology.

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- According to Angell and Monroe, eminent French philosopher John Locke was the first to formulate the theory in 1691. After John Locke had propounded it, the quantity theory of money, suffering additions and modifications at the hands of several writers, attained the status of an important doctrine of the classical political economy.
- As soon as money is considered to be demanded as a store of value, *M* and *P* will not necessarily vary equi-proportionately. The quantity theory of money in the sense of a fairly rigid connection between *M* and *P* was considered at the time as a verifiable and indeed as an obvious statement concerning the real world.
- Initially the impact of the increase in the money supply is more on increasing the economy's aggregate output rather than on raising the general price level with the emphasis progressively shifting from the former to the latter as the economy approaches its optimum capacity output. After the full employment output is achieved in the economy, the increase in the general price level will be equi-proportional to the increase in the aggregate money supply.
- Both David Hume and Richard Cantillon showed that an increase in the quantity of money would raise the general price level equi-proportionately only if the additional money supply was neutrally distributed—if everyone's initial money balances were equi-proportionately increased.
- According to Keynes, the effect of a change in the quantity of money on prices is indirect and non-proportional. According to him, changes in the money supply affect only the absolute price level but exercise no influence on the relative price level. He criticized the classical theory of static equilibrium in which money is regarded as neutral and does not influence the economy's real equilibrium relating to relative prices. According to him, the problems of the real world are related to the theory of shifting equilibrium whereas money enters as a 'link between the present and future'.
- According to Keynes, the ratio between the quantity of the aggregate effective demand and the quantity of money closely corresponds to the 'Income velocity of money' except that the effective demand corresponds to the income the expectation of which has set the production moving, not to the actually realized income, and to the gross, not to the net income. The income velocity of money will not be constant because it depends upon many complex and variable factors.
- Keynes' theory of money and prices is superior to the old quantity theory of money. While according to the old quantity theory of money, every increase in the money supply is necessarily the cause of a price rise, Keynes' theory of prices exposes the quantity theory of money's fallacy by stressing the fact that money inflation will result in price inflation only after full employment has been reached.

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- According to Keynes, the classical approach to the demand for money was faulty because it ignored the possibility of people choosing to hold money as an asset instead of holding the other financial assets, particularly government bonds when their prices are expected to fall.
- If the market price of bonds was expected to fall, (i.e., the market rate of interest was expected to rise), a rational wealth-holder would not always convert money into government bonds even though money was sterile in the sense that it yielded no return in the form of interest income to its owner. To account for such a behaviour, Keynes added the speculative or asset demand for moneyto the transactions and precautionarydemand for money.
- According to Keynes, an individual's aggregate demand for money in the given circumstances is the result of a single decision which is the composite of the *transactions*, *precautionary* and the *speculative motives* for holding money.
- According to Keynes, the demand for money to satisfy these motives, is generally irresponsive to any influence except the actual occurrence of a change in the general economic activity and the level of incomes; whereas experience indicates that the aggregate demand for money to satisfy the speculative motive usuallyshows a continuous response to gradual changes in the rate of interest, i.e., there is a continuous curve relating changes in the demand for money to satisfy the speculative motive and changes in the rate of interest as given by changes in the prices of bonds and debts of various maturities.
- The amount of money which consumers need for the transactions purposes mostly for the buying of consumer goods and services depends on the level of their moneyincome, their spendinghabits and the time interval after which income is received. Given their spending habits and the duration of the pay-period, higher the moneyincome, higher will be the amount of moneywhich will be required for the transactions purpose.
- Apart from money income, the transactions demand for money will also depend on the frequency of income receipts—the length of time period which elapses between the receipt of money income and its disbursement. Shorter the pay period, smaller will be the amount of money which will be required for the transactions purpose.
- The transactions demand for money will also depend on the nature of the industrial structure of the economy. According to John Maynard Keynes, the transactions demand for money was interest-inelastic. It is, however, possible to expect the transactions demand for money to vary inversely with changes in the rate of interest.
- The total quantity of money needed to satisfy the precautionary motive varies with individuals and firms dependingupon their degree of conservatism,

nature of business, access to the money market and the stage of development of the organized bill market providingfacilities of quick conversionof interest-bearing assets, like bonds, into cash.

- According to Keynes, like the transactions demand for money, the precautionary demand for money is also a positive function of the level of income and is insensitive to changes in the rate of interest.
- The speculative demand for money, however, marks a complete break with the classical theory of the demand for money. The speculative demand for money recognizes money's role as a permanent store of value or as Milton Friedman has termed it the permanent abode of purchasing power.
- Although Keynes' theory of the speculative demand for money is fundamentally different from the accepted orthodox classical theory, it has been nevertheless criticized on various grounds. It has been argued by the critics that it is unscientific to separate artificially the demand for money into three parts as has been done by Keynes for the reason that people do not keep with them three separate purses in order to use money for the three different motives. Moreover, transactions demand, precautionary demand and speculative demand for money all depend to some extent on both the level of income and the rate of interest.
- In the classical economic theory, money does not matter and its function in the economy is merely to facilitate the real transactions by serving as a medium of exchange. It is neutral and does not interfere with the real processes of production and distribution in the economy; it only facilitates production, i.e., lubricates the wheels of the economic system.
- The *Pigou effect,* also called the *real-balance effect,* was advanced to counter the Keynesian argument that a fall in wages and prices exerts its influence only through the interest rate changes which becomes inflexible in the downward direction at the liquidity trap interest rate where the aggregate effective demand was less than necessary to ensure full employment in the economy and to defend the classical position relating to the effect of the general wage-cut in achieving full employment in the economy.
- The Pigou effect or the real-balance effect measures, *ceteris paribus,* the influence of the change in an individual wealth-holder's real balances on the aggregate effective demand.
- Real cash balances comprise a part of individuals' total stock of wealth. Unlike the physical wealth whose nominal value rises or falls with a rise or fall in the general price level, the nominal value of money remains constant and its real value moves inversely with changes in the general price level.
- The Pigou effect is of great theoretical importance because it shows that a perfectly competitive economy is capable of achieving a stable full employment output equilibrium. Its presence ensures that the monetarypolicy

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will always be effective as it can directly increase the net wealth of the households.

- The Pigouvian argument cannot apply to all fixed money assets. Although the real value of these assets held by the creditors increases as the general price level falls, however, this also increases the real burden of debt for the debtors. Consequently, the increase in the creditors' average propensity to consume may be offset by the decrease in debtors' average propensity to consume, leaving the average aggregate propensity to consume unchanged.
- Patinkin added on to the Real Balance Effect by criticizing Pigou's approach to show that real balance effect was being ignored in the cash balance approach with the assumption of 'homogeneity postulate'. It failed to recognize the correct relation between the theory of money and the theory of value. The homogeneity postulate simply implied that the demand functions in the real sectors are considered to be insensitive to the changes in the absolute level of money prices. However, this could only be true in barter system and not real world.
- Patinkin's real balance effect was made to showcase the effect real stock of money had on consumption expenditure. As per Patinkin, the Pigou effect only used Real balance effect for consumption expenditure, but it could be made useful by applying it to myriad of situations including the changes in the stock of real balances.

10.7 KEY WORDS

- **Doctrine:** It is a belief or set of beliefs held and taught by a Church, political party, or other group.
- **Price revolution:** It was a series of economic events that occurred between the second half of the 15th century and the first half of the 17th century, and most specifically linked to the high rate of inflation that occurred during this period across Western Europe.
- **Dichotomy:** It refers to a division or contrast between two things that are or are represented as being opposed or entirely different.
- **Monetary policy:** It refers to the actions undertaken by a nation's central bank to control *money* supply and achieve sustainable economic growth.

10.8 SELF ASSESSMENT QUESTIONS AND EXERCISES

Short-Answer Questions

1. List the four assumptions on which the Keynesian reformulated quantity theory of money is based.

2. What is the real-balance effect?
3. 'The Pigou effect is of great theoretical importance.' Why?
4. State the assumptions made by Patinkin through the rehabilitation of the classical quantity theory of money.

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Long-Answer Questions

1. Describe the transactions, precautionary and the speculative motives for holding money according to Keynes.
2. Discuss the criticism of Kenynes theory of speculative demand.
3. Explain the operation of the Pigou effect.
4. Illustrate the criticism of the Pigou effect.

10.9 FURTHER READINGS

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UNIT 11 FRIEDMAN'S RESTATEMENT OF QUANTITY THEORY

Structure

11.0 Introduction
11.1 Objectives
11.2 Overview of Friedman's Restatement of Quantity Theory
11.3 Answers to Check Your Progress Questions
11.4 Summary
11.5 Key Words
11.6 Self Assessment Questions and Exercises
11.7 Further Readings

11.0 INTRODUCTION

In Friedman's reformulation of the quantity theory, it is asserted that "the quantity theory is in the first instance a theory of the demand for money. It is not a theory of output, or of money income, or of the price level." The demand for money on the part of ultimate wealth holders is formally identical with that of the demand for a consumption service. He regards the amount of real cash balances (M/P) as a commodity which is demanded because it yields services to the person who holds it. Thus money is an asset or capital good and the demand for money forms part of capital or wealth theory. In Friedman's restatement of the quantity theory of money, the supply of money is independent of the demand for money. The supply of money is unstable due to the actions of monetary authorities. On the other hand, the demand for money is stable. It means that money which people want to hold in cash or bank deposits is related in a fixed way to their permanent income. Thus Friedman presents the quantity theory as the theory of the demand for money and the demand for money is assumed to depend on asset prices or relative returns and wealth or income. He shows how a theory of the stable demand for money becomes a theory of prices and output. A discrepancy between the nominal quantity of money demanded and the nominal quantity of money supplied will be evident primarily in attempted spending. As the demand for money changes in response to changes in its determinants, it follows that substantial changes in prices or nominal income are almost invariably the result of changes in the nominal supply of money.

11.1 OBJECTIVES

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

- Understand the reformulation of the quantity theory by Milton Friedman
- Analyse the criticism of Friedman's empirical work

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11.2 OVERVIEW OF FRIEDMAN'S RESTATEMENT OF QUANTITY THEORY

John Maynard Keynes' monumentally scholarly work titled *The General Theory of Employment, Interest and Money* was highly critical of the old quantity theory of money. It was Keynes' contention that the quantity theory of money was wrong in singling out the general price level as the sole determinant of the demand for money and changes in the general price level as being principally determined by changes in the supply of money. As a result of Keynes' attack on it, the quantity theory of money was dismissed by most economists until it was revived in the late 1950s as result of the serious academic work done by the economists at the University of Chicago. The monetary theory had been discredited and the view that 'money does not matter' had assumed great importance in the academic circles. Consequently, monetary policy had suffered emasculation being largely replaced by the fiscal policy. The revival of economists' interest in the quantity theory of money is largely due to the sincere and pioneering efforts of the neo-quantity theorists led by Professor Milton Friedman and his worthy students. Milton Friedman's writings restating the quantity theory are a part of the oral tradition of Chicago of which the quantity theory was a central and vigorous part throughout the 1930s and 1940s. At the University of Chicago, Henry Simons and Lloyd Mints taught and developed a more subtle version of the quantity theory of money in which the theory 'was connected and integrated with general price theory and became a flexible and sensitive tool for interpreting movements in aggregate economic activity and for developing relevant policy prescriptions'. The quantity theory of money as developed at Chicago was a theoretical approach which insisted that money does matter. It asserted that any interpretation of short-term cyclical movements which take place in the economic activity which neglected the role of monetary changes and left unexplained the question as to why people were willing to hold a particular nominal quantity of money was seriously faulty and misleading.

Agreeing with the early quantity theoryof the demand for money, Friedman holds that the quantity of money demanded by the public will vary directly and proportionately with changes in the level of prices. In other words, he accepts the view that the demand for money is unit-elastic with respect to the general price

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level. He also agrees that real income is a major determinant of the demand for money. But he rejects the early quantity theory position that the demand for money is unit-elastic with respect to income. According to him, the income elasticity of the demand for money is greater than unity, being in the neighbourhood of 1.8, i.e., the quantity of money which people want to hold increases or decreases more than proportionately to the increase or decrease in their incomes. Friedman explains this relationship byconsideringmoneyas a luxurygood similar to education and recreation. He also agrees with Pigou that money is only one among the many assets that are held for the sake of services rendered by these assets to the asset-holders.

Friedman treats the demand for money as nothing more than the application of a more general theory of demand for capital assets. He derives the demand function for money by specifying those variables which determine this demand. According to Friedman, the demand for money, besides being determined by the level of prices and income is also determined by the cost of holding money. The cost of holding money depends on (i) the rate of interest which could be earned if the wealth-holders lent money instead of holding it in the barren or unproductive form of cash; and (ii) the rate of change in the general price level. When an individual decides to hold cash balances, he forgoes income which he could have earned by holding fixed interest-yield giving asset such as bond. As the market rate of interest rises, the opportunity cost of holding cash balances in the form of interest income forgone increases. In short, the price of acquiring or holding moneyrises.Assuming the demand for money to behave akin to the demand for other assets, less money will be demanded as the cost (price) of holding it increases. Thus, the demand for money and the rate of interest are inversely related.

When the general price level rises, the real value of the nominal cash balances falls. As the rate of price change $\Delta P/P$ increases, the opportunity cost of holding moneyalso increases. In this situation, we mayconsider money as being similar to a bond on which a bond-holder earns a negative interest rate. As the rate of inflation increases, the negative rate of interest becomes large inducing an individual to demand less money. Conversely, if the prices are falling, the opportunity cost of holding moneydecreases as the rate of deflation increases rendering money similar to a bond on which its owner earns a positive interest rate. An increasing rate of deflation amounts to an increasing positive rate of return on a bond inducing an individual to demand more money. In short, the opportunitycost of holding moneyis directly related to the rate of rise (fall) in the general price level causing the demand for money to decrease (increase) as the rate of rise (fall) in the general price level increases. An increase in either of these two or both the determinants of the opportunity cost of holding money will cause the amount of money which people would want to hold to decrease. At the higher cost of holding money, people will avoid being burdened with the higher cost by economizing on their cash balances. Theywill strive hard to paytheir bills and meettheir obligations with less cash in hand and with less moneyin the bank. Conversely, a fall in the rate of interest or in the rate

of increase in the general price level reduces the cost of holding money. Consequently, people will be induced to hold large amount of cash balances with them. In short, the demand for moneyand the opportunitycost of holding moneyare inversely related. Milton Friedman identifies the following four determinants of the demand for money.

- Level of prices
- Level of real income and output in the economy
- Rate of interest
- Rate of change (increase or decrease) in the general price level

Changes in the first two determinants of the demand for moneycause changes in the demand for money in the same direction while changes in the last two determinants cause changes in the demand for money in the opposite direction. Furthermore, while changes in the demand for moneycaused in response to changes in the general price level are equi-proportional, changes in the demand for money are more than equi-proportional to changes in the real income.

Holding that 'the quantity theory of money is a term evocative of a general approach rather than a label for a well-defined theory,' Milton Friedman asserts that the empirical validity of the theory is not open to question. The strength of the quantity theoryof moneywas derived from the frequentlyobserved high correlation between the general price level and substantial changes in the supply of money over a short period of time. Accordingly Milton Friedman states:

'There is perhaps no other empirical relation in economics that has been observed to recur so uniformly under so wide a variety of circumstances as the relation between substantial changes over short periods in the stock of money and prices; the one is invariably linked with the other and is in the same direction; this uniformity is, I suspect, of the same order as manyof the uniformities that form the basis of the physical sciences. And the uniformity is more than direction. There is an extraordinary empirical stability and regularity to such magnitudes as income velocity that cannot but impress anyone who works extensively with monetary data. This very stability and regularity contributed to the downfall of the quantity theory, for it was overstated and expressed in an unduly simplyform; the numerical value of velocity itself, whether income or transactions, was treated as a natural constant. Now this is not; and the failure to be so, first during and after World War I and then, to a lesser extent, after the crash of 1929, helped greatly to foster the reaction against the quantity theory.'

Who is a Quantity Theorist?

What does it mean when it is said that a writer is a quantity theorist? What is the general approach of the quantity theoryof money? According to Milton Friedman, a quantity theorist believes in three things. *First,* he believes that the demand for money is highly stable–he regards the demand function for money as being more

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stable than the Keynesian consumption function. In other words, according to a quantity theorist, an increase in the supply of money will by raising the level of aggregate spending, increase the general price level in the economy as against the Keynesian approach that it would disappear into hoarding or speculative cash balances with little or no effect on prices. But his belief in the high stability of the demand for money does not mean that the real quantity of money demanded per unit of output or the velocity of circulation of money (V) is constant over time. In other words, the stability of the demand function for money does in no way mean that the demand function for money is invariant. Consequently, a rapid increase in (V) during a hyperinflation is no contradiction of the stability of the demand function for money if the function includes a variable referring to expected price changes. The stabilitywhich he expects lies in the functional relationship between the quantity of money demanded and the variables which determine it. Asharp increase in (V) during hyperinflation is entirely consistent with a stable functional relationship. Furthermore, the quantitytheorist limits and specifies explicitly the variables which on account of their empirical importance have to be included in the function. Apart from regarding the demand function for money as stable, the quantity theorist also regards it as playing a vital role in determining those variables, such as the level of money income or of prices, which, according to him, are of great importance for the analysis of the economy as a whole.

Second, the quantity theorist believes that the important factors affecting the supply of money are independent of those factors which affect the demand for money. This is why the quantity theorists, ever since the days of Henry Thornton, have attacked the real-bills doctrine according to which changes in the demand for money caused corresponding changes in the supply of money which cannot change without a change in the demand for money because the banks extended credit on the basis of self-liquidating 'real' bills.

Third, the quantity theorist believes in the 'realness' of the rate of interest being determined bythe forces of thrift and productivity. He criticizes the Keynesian approach which regards the interest rate as a 'purely monetary phenomenon'. He asserts that had the rate of interest been a purely monetary phenomenon, being *solely* determined in the money market (quite independent of the forces of thrift and productivity), the monetary authority could have pushed it to any chosen level. This might be regarded as increasing the prestige of monetary policy and consequently the appeal of the quantity theory. However, if the rate of interest was entirely determined in the money market by the forces of demand for and the supply of money, manipulations of the rate of interest would have no effect on the real economic activity. There are, however, certain limitations on the ability of the monetary authority to establish any given structure of interest rates for the debts of different maturities and risks. Of particular mention is the situation of the liquidity trap in which the monetary authority would have lost effective control over the rate of interest.

In his classic article in 1956, Milton Friedman had stated the essence of the Chicago School's approach to the demand for money in the following words.

> 'To the ultimate wealth-owning units in the economy money is one kind of asset, one way of holding wealth; to the productive enterprise, money is a capital good, a source of productive services that are combined with other productive services to yield the products that the enterprise sells. Thus, the theory of the demand for money is a special topic in the theory of capital,...'

According to Friedman, the quantity theory of money is a theory of the demand for money. He considers the analysis of the demand for money on the part of the ultimate wealth-owning units in society formally identical with the analysis of the demand for a consumer durable good or capital. Money is one of the several forms of assets in which wealth may be held. Like the theory of consumer choice, the demand for money (or any other particular asset) on the part of wealth-owners depends on (i) the total wealth to be held in the different forms (budget constraint); (ii) the price of and the return on money or any other particular asset and the alternative forms of holding wealth; and (iii) tastes and preferences of the wealth-owning units. Unlike the Keynesian approach to the demand for money, in Milton Friedman's approach there is absence of the three separate 'transactions', 'precautionary' and 'asset' demands for money. All these three demands are treated as one asset and not as three separate assets and the demand for one asset reflects the wealth, relative prices and tastes and preferences of the wealth-owners.

According to Friedman, 'the substantive differences from the analysis of the demand for a consumption service are the necessity of taking account of inter-temporal rates of substitution in (ii) and (iii) and of casting of budget restraint in terms of wealth.' Since wealth can be held in several forms, the ultimate wealth-owning unit will keep his total wealth in different forms so as to maximize 'utility'. To make this possible, he must divide his wealth in different alternative forms such that the rate at which one form of wealth can be substituted for another form of wealth equals the rate at which he is willing to substitute one form of wealth for another form of wealth.

Friedman considers five different forms in which wealth can be held, namely, money (*M*); bonds (*B*); equities (*E*); physical non-human capital goods (*G*); and human capital or wealth (*H*). The composition of one's total wealth portfolio will be determined by the returns available on cash and the rival forms of assets in which wealth can be held. The demand for money will depend on the relative rates of returns obtainable on the different competing forms of assets in which wealth can be held. Friedman takes the nominal returns from each asset, except human capital (for which there is a limited market in the modern non-slave free societies). Consequently, the rate of substitution of human capital for other forms of capital cannot be expressed in terms of the market prices. Here, however, he sees some possibility of substitution of non-human capital for human capital in an individual's

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total wealth holdings. At any given point of time an individual wealth-holder's asset portfolio will be divided in some waybetween human and non-human wealth. Although this division of the asset portfolio between human and non-human wealth can undergo a change over time but it is assumed as *given* at any given point of time and is expressed by (w) which is defined as the ratio of non-human wealth to human wealth or equivalently, as the ratio of income from non-human wealth to income from human wealth.

Given the tastes of the wealth-owners, Milton Friedman has given the following demand function for money:

$$M = f\left(P, r_b, \frac{1}{r_b}\frac{dr_b}{dt}, r_e + \frac{1}{P}\frac{dP}{dt}, \frac{1}{r_e}\frac{dr_e}{dt} - \frac{1}{P}\frac{dP}{dt}; w; \frac{Y}{r}; \right) \quad ...(11.1)$$

where

M is the total demand for money;

P is the general price level;

P is a variable which affects the 'real' yield of everyasset. Since it is assumed that money gives returns solely in kind in the usual forms of convenience, security, etc. the magnitude of this return in 'real' terms depends on the quantity of goods that a money-unit can buy, i.e., on the general price level;

r_b is the market bond interest rate;

r_e is the market interest rate on equities;

$\frac{1}{P}\frac{dP}{dt}$ is the size of nominal return per $1 of physical goods which together with

P defines the 'real' return obtainable from holding $1 in the form of physical goods;

w is the ratio of physical non-human wealth (G) to human wealth (H) or the ratio of income from non-human wealth to income from human wealth;

Y/r is the total wealth since Y represents the total return on all forms of wealth including money and physical capital goods owned and held directly by the ultimate wealth-owners. The assumption is that some imputed income from the stock of money is included in Y and directly owned physical capital goods;

 stands for the utility determining variables–variables affecting the tastes and preferences of the ultimate wealth-owning units.

By assuming r_b and r_e to be stable over time and stating that the rate of change of prices is required separately, Milton Friedman replaces the unwieldy variables representing the nominal return $r_b \left(\frac{1}{r_b}\frac{dr_b}{dt}\right)$ on bonds and on equities $\left(r_e + \frac{1}{P}\frac{dP}{dt} - \frac{1}{r_e}\frac{dr_e}{dt}\right)$ in equation (11.1) by simply r_b and r_e. As a result of this

replacement, the demand function for money expressed in equation (11.1) can be written as:

$$M = f\left(P, r_b, r_e, \frac{1}{P}\frac{dP}{dt}; w; Y; u\right) \quad ...(11.2)$$

According to Friedman, this demand equation must be considered independent in an essential way of the nominal units to measure the money variables. If the unit in which prices and money income are expressed is changed, the amount of money demanded should change proportionately. This means that equation (11.2) pertaining to the demand function for money must be regarded as homogeneous of degree 1 in prices (P) and the money value of wealth (Y) so that–

$$\lambda M = f\left(\lambda P, r_b, r_e, \frac{1}{P}\frac{dP}{dt}; w; \lambda Y; u\right) \quad ...(11.3)$$

Putting $\lambda = \frac{1}{P}$ equation (6.3) can be rewritten as–

$$\frac{M}{P} = f\left(r_b, r_e, \frac{1}{P}\frac{dP}{dt}; w; \frac{Y}{P}; u\right) \quad ...(11.4)$$

In this form, the equation expresses the demand for real balances as a function of the 'real' variables, independent of the nominal monetary values.

Putting $\lambda = \frac{1}{Y}$ equation (11.3) can be rewritten as–

$$\frac{M}{Y} = f\left(r_b, r_e, \frac{1}{P}\frac{dP}{dt}; w; \frac{P}{Y}; u\right) \quad ...(11.5)$$

or

$$M = f\left(r_b, r_e, \frac{1}{P}\frac{dP}{dt}; w; \frac{P}{Y}; u\right)Y \quad ...(11.6)$$

According to Friedman, although equation (11.6) represents the total demand for money on the part of wealth-holders who consider money as an asset in their asset portfolios, it can also be used to represent the demand for money on the part of business firms to whom money is similar to a factor of production. There is, however, one difference between these two types of demanders. In contrast to the individual wealth-holders, firms can convert their total amount of wealth into money because they own only non-human form of wealth. Consequently, in their case the term (w) will not appear in the equation. Except this, all the other terms will, however, remain unaffected in the equation because the business firms react in the same manner as do the individuals to changes in the rate of interest and prices. Consequently, the equation will represent the total demand for money for the economy.

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Criticism

Criticizing Friedman's approach, Professor M L Burstein has stated that although a strong positive correlation has been found between the money stock and the nominal GNP, this correspondence is nowhere near those forming the 'basis of the physical sciences'. Obviously, the relationship between the stock of money and the flows highly correlated with the GNP is subject to substantial variation in both the short and long run. "Unduly simple" characterizations of the association of monetary and price (and/or income) series are apt to be a crashing failures.' Burstein further states that 'more elaborate formulations can permit better statistical fits — perhaps at the expense of introducing a large number of variables as parameters that are not controllable or even forecastable. These estimating equations might be empirically useless; they might achieve retroactive accuracy, but of what use is it to know that variations in *M* will lead shortly to well-defined variations in GNP only if innumerable other variables are kept under control or can accurately be predicted? Indeed there is a more important consequence of "complicated" formulations, at least for our immediate purposes: they imply that there will not be proportional variation in the short run between the stock of money and, say nominal GNP even when the economy is at full employment; at least not unless an extraordinary concatenation of events occurs.'

According to Milton Friedman, his theory has rich empirical contents. In his article titled 'The Demand for Money: Some Theoretical and Empirical Results', which was published in *The Journal of Political Economy* in 1959, Friedman tested the proposition that the demand for money varies directly and proportionately to the change in the general price level and directly but more than proportionately to a change in the level of income More specifically, he tests the equation $M_d = aPy_b$, where M_d is the demand for money, P is the general price level, y is the aggregate real income, i.e., total output of goods and services, a is a positive constant indicating that the demand for money changes in the same direction in which the prices and income change and b is a constant with value greater than one signifying that the demand for money changes more than proportionately with changes in the level of income. Dividing both sides of the equation by P, Milton Friedman reduces the above equation to the following equation:

$$M_d/P = ay^b$$

In the above equation, the term M_d/P is treated as a single variable and b is simply the income elasticity of demand for money which according to Milton Friedman is 1.8. For the income variable, Milton Friedman uses 'permanent income' while for the money variable he uses the sum of currency, demand deposits and commercial bank time deposits.

A major criticism of Friedman's empirical work is that the results he derived depend upon the manner in which he has defined money. His definition of money

is too broad. If we define money conveniently excluding the time deposits from it, the income elasticity of the demand for money will be closer to unity rather than being as high as 1.8. Moreover, Milton Friedman's suggestion that money is a luxuryis misleading.

Although Milton Friedman has emphasized the relationship between monetary stocks and aggregatewealth, still he hasnot found the interest rate as being empirically significant as a determinant of the demand for money. Friedman's research suggests that the relationship between the demand for money and interest rate is weak. This weak relationship between the demand for money and interest rate results from the broad definition of money adopted by Friedman. Currency and demand deposits are those assets on which there is no explicit return as these are non-interest bearing assets. For these two assets, the rate of interest paid on the alternative assets represents the opportunity cost of holding money and demand deposits. This is not, however, true of time deposits which earn an explicit return in the form of interest paid on such deposits. As a result, when interest rates, including those on the time deposits, rise, the demand for currency and demand deposits falls whereas the demand for time deposits ordinarily increases. If the increase in the demand for time deposits is combined with the decrease in the demand for currency and demand deposits, the decrease in the total will be smaller than the decrease in the demand for currencyand demand deposits alone. This is why Friedman finds the interest rate as having an effect which is too small to be statistically significant on the secular demand for money. Needless to say that this conclusion, which is not accepted by every economist, depends on the use of the permanent income in the sweepingly broad definition ofmoneywhich consists of the currencyin circulation plus demand deposits and time deposits. The inclusion by Friedman of the time deposits in the definition of money blunts the interest elasticity of the demand for money since it conceals the shifts between the demand and time deposits occasioned by changes in the interest rates.

11.3 ANSWERS TO CHECK YOUR PROGRESS QUESTIONS

1. The cost of holding money depends on (i) the rate of interest which could be earned if the wealth-holders lent moneyinstead of holding it in the barren or unproductive form of cash; and (ii) the rate of change in the general price level.

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2. Milton Friedman identifies the following four determinants of the demand for money.
   - Level of prices
   - Level of real income and output in the economy
   - Rate of interest
   - Rate of change (increase or decrease) in the general price level

11.4 SUMMARY

- It was Keynes' contention that the quantity theory of money was wrong in singling out the general price level as the sole determinant of the demand for moneyand changes in the general price level as being principally determined by changes in the supply of money.
- The quantity theory of money as developed at Chicago was a theoretical approach which insisted that money does matter. It asserted that any interpretation of short-term cyclical movements which take place in the economic activity which neglected the role of monetary changes and left unexplained the question as to why people were willing to hold a particular nominal quantity of money was seriously faulty and misleading.
- Friedman accepts the view that the demand for money is unit-elastic with respect to the general price level. He also agrees that real income is a major determinant of the demand for money. But he rejects the early quantity theory position that the demand for money is unit-elastic with respect to income. According to him, the income elasticity of the demand for money is greater than unity.
- As the rate of inflation increases, the negative rate of interest becomes large inducing an individual to demand less money. Conversely, if the prices are falling, the opportunity cost of holding money decreases as the rate of deflation increases rendering money similar to a bond on which its owner earns a positive interest rate. An increasing rate of deflation amounts to an increasing positive rate of return on a bond inducing an individual to demand more money.
- Milton Friedman identifies the following four determinants of the demand for money.
  - Level of prices
  - Level of real income and output in the economy
  - Rate of interest
  - Rate of change (increase or decrease) in the general price level

  Changes in the first two determinants of the demand for money cause changes in the demand for money in the same direction while changes in the

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last two determinants cause changes in the demand for moneyin the opposite direction.

- According to Milton Friedman, a quantity theorist believes in three things. *First,* he believes that the demand for money is highly stable–he regards the demand function for money as being more stable than the Keynesian consumption function. *Second,* the quantitytheorist believes that the important factors affecting the supply of moneyare independent of those factors which affect the demand for money. *Third,* the quantity theorist believes in the 'realness' of the rate of interest being determined by the forces of thrift and productivity.
- Like the theory of consumer choice, the demand for money (or any other particular asset) on the part of wealth-owners depends on (i) the total wealth to be held in the different forms (budget constraint); (ii) the price of and the return on money or any other particular asset and the alternative forms of holding wealth; and (iii) tastes and preferences of the wealth-owning units.
- Friedman considers five different forms in which wealth can be held, namely, money (*M*); bonds (*B*); equities (*E*); physical non-human capital goods (*G*); and human capital or wealth (*H*). The composition of one's total wealth portfolio will be determined by the returns available on cash and the rival forms of assets in which wealth can be held. The demand for money will depend on the relative rates of returns obtainable on the different competing forms of assets in which wealth can be held.
- Criticizing Friedman's approach, Professor M L Burstein has stated that although a strong positive correlation has been found between the money stock and the nominal GNP, this correspondence is nowhere near those forming the 'basis of the physical sciences'.
- According to Milton Friedman, his theory has rich empirical contents. In his article titled 'The Demand for Money: Some Theoretical and Empirical Results', which was published in *The Journal of Political Economy* in 1959, Friedman tested the proposition that the demand for money varies directly and proportionately to the change in the general price level and directly but more than proportionately to a change in the level of income

11.5 KEY WORDS

- **Empirical relation:** It refers to the relationship or correlation that is supported by experiment and observation but not necessarily supported by theory.
- **Manipulation:** It is the action of manipulating something in a skilful manner.

- **Inter-temporal rate of substitution:** It is a concept in finance that helps us to link the long-term growth rate of the economy, investors' expectations of future consumption, and interest rate to each other.

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11.6 SELF ASSESSMENT QUESTIONS AND EXERCISES

Short-Answer Questions

1. What is Milton Friedman's demand function for money?
2. Elucidate the statement 'the quantity theory of money is a theory of the demand for money'.

Long-Answer Questions

1. Explain the term 'quantity theorist'.
2. Illustrate the criticism of Friedman's empirical work.
3. Discuss Friedman's quantity theory of money.

11.7 FURTHER READINGS

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BLOCK IV
INFLATION, TRADE CYCLE AND MONETARY POLICY OF RBI

UNIT 12 INFLATION

Structure

12.0 Introduction
12.1 Objectives
12.2 Meaning
12.3 Causes and Types
12.4 Remedies
12.4.1 Inflationary Trends in India
12.5 Answers to Check Your Progress Questions
12.6 Summary
12.7 Key Words
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12.9 Further Readings

12.0 INTRODUCTION

Inflation is the rise in the prices of most goods and services of daily or common use, such as food, clothing, housing, etc. It measures the average price change in a group of commodities and services over time. The opposite and rare fall in the price index of this group of items is called 'deflation'. Inflation is indicative of the decrease in the purchasing power of a unit of a country's currency. This is measured in percentage. The purchasing power of a currency unit decreases as the commodities and services get expensive. In India, inflation is primarily determined by two main indices — WPI (Wholesale Price Index) and CPI (Consumer Price Index), which measure wholesale and retail-level price changes, respectively. The CPI calculates the difference in the price of commodities and services such as food, medical care, education, electronics, etc., which are directly purchased by the consumers for use. On the other hand, the goods or services sold by businesses to smaller businesses for selling further is captured by the WPI. The perception of inflation is different for everyone, which depends upon the kind of assets they possess. For someone with investments in real estate or stocked commodity, inflation means that the prices of their assets is set for a hike. For those who possess cash, they may be adversely affected by inflation as the value of their cash erodes

In this unit, you will learn about the concept of inflation, its causes and effects. This unit will also discuss the measures used for controlling inflation.

12.1 OBJECTIVES

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

- Understand the concept of inflation
- Discuss the different types of inflation
- Examine the methods to control the money supply in the economy
- Explain the terms such as CRR, SLR and Bank rate
- Differentiate between monetary policy and fiscal policy
- Analyse inflationary trends in India

12.2 MEANING

According to the public understanding, inflation means a condition which produces a rising trend in the general price level in the economy. Inflation may, however, be present in the economy if the sustained price rise, which would have otherwise occurred, is prevented from occurring by imposing the price and physical controls in the economy. Such a situation is called 'suppressed inflation'. Inflation is not amenable to any one definition.

According to the Chambers' Twentieth Century Dictionary, inflation is an 'undue increase in quantity of money in proportion to buying power, as on an excessive issue of fiduciary money.' Gardner Ackley has defined inflation 'as a persistent and appreciable rise in the general level or average of prices.' According to this definition, a sporadic price spurt or an imperceptible rise in prices will not be inflation. Elaborating further, Ackley has stated: 'We define inflation as rising prices, not as 'high' prices. In some sense, then inflation is a disequilibrium state; it must be analysed dynamically rather than with the tools of statics.' According to Crowther, 'inflation is a state in which the value of money is falling, i.e., prices are rising.' According to Pigou, inflation exists 'when money income is expanding relatively to the output of work done by the productive agents for which it is the payment.' In general, inflation may, therefore, be defined as a sustained rise in the general price level brought about by high rates of expansion in the aggregate money supply although in the contemporary discussions on inflation it is defined as a sustained rise in the general price level, howsoever generated. All these definitions have a common feature of stressing the point that inflation is a process of rising prices and not a state of high prices, showing a state of disequilibrium between the aggregate supply and the aggregate demand at the existing or current prices necessitating a rise in the general price level in the economy.

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12.3 CAUSES AND TYPES

Inflation is a persistent rise in the general price level rather than a once-for-all rise in it. It should be noted that most economists all around the world have assumed that price stability is the main objective of economic policies.

The value of money can be divided into four parts, which are as follows:

- Inflation
- Deflation
- Reflation
- Disinflation

Forms of Inflation

In economicS there are several forms of inflation. Some of them are as follows:

- **Production inflation:** Sometimes the production of goods and services decrease, that time the disequilibrium between the demand and the supply exist. At the time of lower level of production, the demand exceeds the supply; this situation is known as inflation. Production inflation can also exist when the production is fixed and the money income of the consumers increases.
- **Currency inflation:** As it is clear from the name, the inflation due to increase in the currency is known as currency inflation. When the government or the central bank of a country increases the money supply in a high volume, it will increase the general price level. This inflation is known as currency inflation. Normally, in the case of war or in some economic difficulties, central bank increases the money supply in a high volume.
- **Credit money:** The total money stock of a country is the sum of high power money (money supply by the central bank), and the credit creation by the commercial banks. In today's world, credit money has a significant value in the monetary system.

Inflation on the basis of motion

On the basis of motion, inflation can be divided into four parts:

- **Creeping inflation:** When there is a slow increase in the general price level due to inflation, then it is known as creeping inflation. The rate of increase in this inflation is not more than 2 per cent in a year. According to Keynes, it is a must for the development of an economy.

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- **Walking inflation**: When the government and other monetary authorities are not able to control the creeping inflation, it takes the form of walking inflation. The rate of increase in the inflation is more in walking inflation, in comparison with creeping inflation. It affects the people adversely.According to Keynes, this is the form of real inflation.
- **Running inflation:** In running inflation, the rate of increase in the inflation increases at a higher rate. It affects the fixed income group adversely.
- **Galloping inflation:** It is the worst form of inflation, which is possible in any country after the failure of central bank, and other monetary authorities. In this situation, the increase in price affects people very badly and the prices became uncontrollable. According to Keynes, 'this condition of inflation is possible only after the point of full employment.'

Inflationary and Deflationary Gap

It should be noted that equilibrium cannot be on the full employment level. It should be considered that the equilibrium level may involve much unemployment and waste of natural resources. It means that the only level of equilibrium that can be considered desirable is that which provides the near full employment.

Inflationary Gap

The concept of inflationary gap has been propounded by Keynes. According to Keynes, inflationary gap arises when consumption and investment spending together are greater than the full employment gross national product level.

In other words, it is a gap between money incomes of the community and the available supply of output of goods and services. In this situation, more goods will be demanded than the economic system can produce. The result will be that the prices will begin to rise and an inflationary situation will emerge.

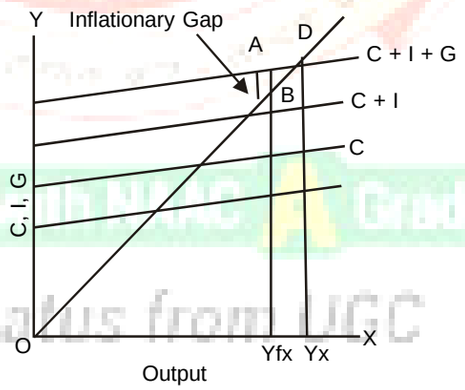

***Fig. 12.1** Inflationary Gap*

In Figure 12.1, the inflationary gap has been shown. C, I, G stand for the consumption, Investment and the Government Expenditure. (C+I+G), shows the

total expenditure on demand in the economy. At this level Yx is the total real output. Yfx shows a full employment limit on real output Yfx. Real income of the economy cannot reach Yx, so the total demand (C+I+G), exceeds total output, leaving a gap AB, which is known as inflationary gap.

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Deflationary Gap

Similarly, you can show the deflationary gap with the help of a graph. This would come into existence, if total aggregate demand is insufficient to create the full employment. Yx is the total output at full employment. Let us assume that the total demand is (C+I+G)' which cuts the 45° line at B, with real output Y'x. AB is the deflationary gap.

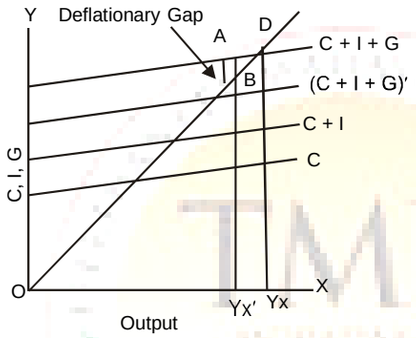

***Fig. 12.2** Deflationary Gap*

In Figure 12.2, the deflationary gap has been shown. The output has been assumed on X axis, on the other hand consumption, investment and the government expenditure have been shown on the Y axis. The deflationary gap has been shown in the graph as AB.

Demand Pull Inflation

This represents the situation where the basic factor at work is the increase in the aggregate demand for output either from the government or the entrepreneur or the households. The result is that the pressure of demand is such that it cannot be met by the currently supply of output.

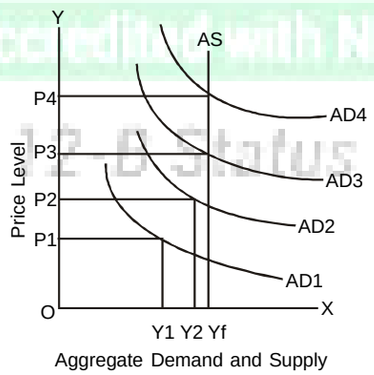

***Fig. 12.3** Demand Pull Inflation*

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It should be noted that Keynes has propounded the concept of demand pull inflation in his booklet, *How to Pay for war*, and it is surprising that it was published during the Second World War. In this theory, Keynes has explained the inflation in terms of excess demand for goods to the aggregate supply of their output.

In Figure 12.3, you have assumed the aggregate demand and aggregate supply on the X axis; on the other hand you have assumed the price level on the Y axis. Aggregate supply curve is upward in the beginning but became vertical after the full employment level. According to the figure when it intersects the AD3, it becomes vertical, because after the full employment, the supply of output cannot be increased.

When the aggregate demand was AD1, the equilibrium is at the level less than full employment and the price decided is P1. When the aggregate demand increased from AD1 to AD2, the price level also increased from P1 to P2. it should be noticed in this case the aggregate output supplied also increased from OY1 to OY2. If the aggregate demand further increased to AD3, the price level rises to P3, and the output increased to OYf.

If the aggregate demand further increases, say to AD4, only price level rises to OP4 , and the output remains constant at Yf. OYf is the full employment level of output and aggregate supply curve is perfectly inelastic at Yf.

Factors that Increase or Decrease Aggregate Demand

Aggregate demand can increase or decrease depending on several factors. These factors cause upward or downward shifts in the aggregate demand curve. These are as follows:

Exchange Rates: When the exchange rate increases, this results in a decrease in net exports. Thus, aggregate expenditure will go down at all prices, that is, aggregate demand will decrease.

Distribution of Income: When the real wages of people increase, they have more money to spend and consume. This results in an increase in the consumption expenditures to increase.

Expectations: Consumers adjust their spending in accordance with their expectations of the economy. If they expect the economy to not do so well in the future, savings would increase thus overall expenditures will decrease. Rising price levels will cause aggregate demand to increase. If consumers foresee the price level to rise in the near future, they might just go out and buy that good now, increasing the consumption expenditures in aggregate demand.

Monetary and Fiscal Policies: Government policies have an effect on aggregate demand. Government spending or increase in taxes influence how consumers spend or save. An expansionary fiscal policy of the government causes aggregate demand to increase, while a contractionary monetary policy causes it to decrease.

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Cost Push Inflation

In the early theories of inflation, the emphasis was given only on the inflation created by the demand. In the classical quantity theory of money and also in the Keynesian theory of money, both suggested that the reason of inflation is the excess of aggregate demand over the supply. However, after 1950, a new theory came into existence, the cost push inflation or in other words new inflation theory. The theory explains that inflation occurs because of the rise in the cost of goods by an increase in the cost of production.

Some economists have found nothing new in the new inflation theory as Martin Bronfenbrenner and F. D. Holzman stated. cost inflation has been the layman's instinctive explanation of general price increase, since the dawn of the monetary system.

The cost push inflation can be divided into three parts, such as follows:

- Wage push inflation
- Profit push inflation
- Increase in prices raw materials, like crude oil prices and energy prices

Wage Push Inflation

In today's world, trade unions are very strong, and they push the producers for higher wages. In this theory, it has been discussed that mainly the trade unions are responsible for wage push inflation. When trade unions push for higher wages, which are not justifiable either on the grounds of a prior rise in productivity or of cost of living, they produce a cost push effect.

In the above situation, the employer is bound to increase the wages, because of the competition in the labour market. Employers also like to think that they can pass on these cost to the consumers in the form of hike in prices. This situation is known as wage push inflation. Wage push inflation is a major cause of cost push inflation. Cost push inflation tell us that even if the aggregate demand is not increasing, prices may be able to rise, because of the increase in the cost of production.

It should be noted that with the increase in the wages, the aggregate supply curve shifts towards left, with a given aggregate demand curve. This results in higher prices of output.

Profit Push Inflation

The profit push inflation is one of the causes of cost push inflation; firms operating under the monopoly market or in oligopolistic market can charge a higher price to increase their profits. In the above case because of the increase in wages of the employees, the cost push inflation exists. However, in this case, the cause of cost push inflation is the increase of profit. Also, in this case the aggregate supply curve shifts towards left with the fixed aggregate demand curve, and the result is increase in price (Figure 12.4).

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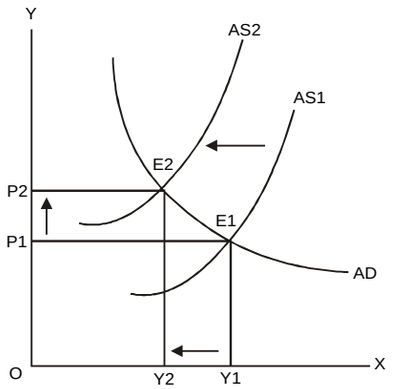

Fig. 12.4 *Cost Pull Inflation*

Rise in Raw Material Prices

In addition to the rise in wage rate of labour and increase in profit margins, you have one more reason of cost push inflation, and that is the rise of raw material prices. The same happened in the seventies, when the OPEC increased the price of crude oils. As a result, the aggregate supply decreased, resulting in cost push inflation.

It should be noted that an important feature of cost push inflation is that this not only causes rise in price level, but brings about a fall in aggregate output.

Generally speaking, the cost push inflation in the economy occurs as a result of the combination of all the factors discussed above: wage push inflation, profit push inflation and the rise in the price on raw materials. According to those who feel that prices are pushed up by rising costs rather than by the demand pull forces, some control in the form of prices and incomes policy is necessary to bring the spiral of rising prices to a halt.

Both the demand pull and the cost push inflations are closely related, and intertwined with the now widely held view that the problem of inflation is more sociological than economic in nature.

12.4 REMEDIES

The future of the governments and the political parties depend on how they tackle the problem of inflation. Many aspects of our everyday activities are in some way influenced by the level of and changes in the rate on inflation.

A high rate of inflation makes the life of the poor very miserable. During mild inflation, consumers generally cut their spending on luxurious goods, corporate profits

increases sharply due to the increase in price and they build up new inventories. Also in government sector, the tax collected from indirect tax also rises. It also affects the income distribution of the economy.

We can divide the effects of inflation into six parts, as given below:

1. Effects of inflation on producers and traders class
2. Effects of inflation on investors class
3. Effects of inflation on laboures and other fixed income groups
4. Effects of inflation on consumers class
5. Effects of inflation on debtors and creditors class
6. Other effects of inflation

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Before discussing the effects of inflation on different classes of the economy, this section will discuss the concepts of anticipated and unanticipated inflation.

Anticipated Inflation

If the people know that in the coming time period the rate of inflation is going to increase, this inflation is known as anticipated inflation. If rate of inflation is anticipated, people take steps to make suitable adjustment in their contracts to avoid the adverse effects which inflation could bring to them.

For instance, a worker correctly anticipates that in the coming year the rate of inflation will be 15 per cent. Suppose, his income in the existing year is ₹ 10,000, then he can make a contract with his employer to increase the wage by 15 per cent in next year, so he will get ₹11,500 in the next year. This way he will not be affected by the rise in the inflation rate.

Unanticipated Inflation

Suppose, a worker is not able to anticipate the inflation rate, it means in next year he will also get the same wage, i.e., 10,000. However, in real term, his real income was decreased by 15 per cent, due to the increase in the rate of inflation.

Effects of Inflation on Producers and Traders Class

From the view point of producers and traders, inflation is always very useful, in the period of inflation they earn much profit and soon they became financially strong. There are many reasons for this such as follows:

- In the period of inflation, the cost of production and price both increase, but the rate of increase in price is much higher than the increase in the cost of production. That's why a lower cost of production producer charges a higher price and earns a higher rate of profit.
- In the period of inflation, the demand is much higher even at a higher price; the result is same as above, a higher rate of profit.

- In the period of inflation the liquidity increases. That's why people can purchase more, so the demand of the consumer increases. The producer can sell all the goods easily even at a higher price.

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Effects of Inflation on Investor's Class

Here, the meaning of investor class is those people who invest their capital in the industry. On the basis of investment, investor class can be divided into two parts, (i) investors of fixed income and (ii) investors of variable income.

Investors of Fixed Income

Those investors received fixed return from their investment, like investment in the debentures; they receive a fixed income for their investment. In the period of inflation this type of investors are in loss, because their real income decreases.

Investors of Variable Income

The incomes of the investors of variable income depend on the change in the value of money and on the business. They usually invest into the shares of a company. Because they earn in the period of inflation and they earn their share through increase in the price of the share.

Effects of Inflation on Labourers and other Fixed Income Groups

Generally, this sector includes the service sector; the persons who sell their services like, agricultural labour, industrial worker, teachers all come under this group. Because they belong to fixed income group, it means in the period of inflation the purchasing power of this group decreased. It is also true that they can have more new job offers in the period of inflation, and the employers also pay the dearness allowances for this inflation, but that dearness allowance cannot off-set the inflation, that's why the labourer's do the strikes.

Effects of Inflation on Consumer Class

Every person in this world is a consumer. No matter he is a producer or the supplier of the factors of production. From the view point of a consumer inflation is always bad.

Effects of Inflation on Debtors and Creditors Class

In the period of inflation the purchasing power of the money decrease. That's why the real burden of the tax decreases. In other words, in the period of inflation the payment of debt is not a tough task; in this period the debtor is in a better position than the creditor. For example, you lend ₹20,000 to a person at a rate of 5 per cent per annum, after one year you will receive ₹ 21,000. However, if there will be 4 per cent rate of inflation then your 4 per cent of income will be offset by the rise in prices, and effectively you will get only 1 per cent real rate of interest.

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Other Effects of Inflation

The following are the other effects of inflation.

- **Unequal distribution of wealth:** Because of the inflation, there can be a centralization of the economic power, producers and the traders earn a higher profit and persons who belong to the fixed income group have to bear the loss. As a result, there will be unequal distribution of income and wealth.
- **Increase in taxation:** In the period of taxation, governments generally revise the old taxes and it also implements new taxes, to decrease the purchasing power of the consumers.
- **Increase in immorality:** This effect can be understand with the help of some definitions. According to Michael Levy; many people lose their health and happiness trying to accumulate moneyand that makes it most expensive thing on earth.

Effect of Inflation on Growth of Banking Sector

In the period of inflation, the monetary income of the people increase very fast. Hence, the insurance and the banking sector have changed completely.

Effect of Inflation on Balance of Payment (BOP)

Because of the inflation the balance of payment of any country can be adverse. Inflation leads to the increase in the price level, it affects the export very badly on the other hand it attracts the imports. As a result the balance of payment became negative or in other words adverse.

Adverse Effect on Savings

In the time period of inflation, the purchasing power of the consumers decrease, they have to pay more for the same amount of commodities. That's why they have to decrease the amount of savings. In other words, inflation affects the rate of savings adversely.

Control of Inflation

With the help of above discussion, you can conclude that the inflation is very bad from the view point of economy, it can affect the economic and social structure of the economy adversely. There are several measures to check the inflation; some of them are as follows:

- Monetary measures
- Fiscal measures

Monetary Measures

In monetary measures the government of a country tries to control the inflation through the central bank of that country. The central bank follows a strict monetary

policy, through which central bank takes the excess money supply from the economy.

Instruments of Money Control

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There are many instruments to control the money supply in the economy. Some of the main instruments of money control are as follows:

1. **Open market operation**: The term open market operation means the purchase and sale of government securities by the RBI from and to the public and also from and to the banks. When there is a situation of inflation in the economy, that time government can sell the government securities to the public and also to the bank to soak the excess liquidity interms of excess money supply from the economy.

   As you know that because of excess money supply, price of the goods and services increase, because of increase in demand for goods and services. With the sale of government securities to the public and to the bank, government takes back the excess moneysupplyfrom the economy. Through this process government can check the inflation by using this instrument of money control.

   On the other hand, if there is a recession in economy. In this situation, government can correct the situation bypurchasing the government securities from the public and from the banks. In recession, aggregate demand for the goods and the services decrease and because of this the production also decrease and consequently the employment.

   To correct the condition of unemployment, decrease in aggregate demand of goods and services government purchase the government securities from the public and from the banks. By the help of this process, the government injects liquidity into the economy, and it corrects the situation of recession. In most of the developing countries open market operation is regarded as the most efficient instrument of the monetary policy.

2. **Variation in reserve requirement:** Banks have to keep certain proportion of their assets in the form of cash. It is for two reasons. The first reason of holding the cash is to meet their daily transactions and the second reason of holding the cash reserve is statutory reserve requirement. Balance with the RBI is known as reserve requirement. This reserve requirement is known as CRR. According to the RBI Act 1956, the RBI can impose the CRR between 3 to 15 per cent on their net demand and time liabilities. The working of CRR can be explained with the help of two conditions of the economy. In the condition of inflation, when there is an excess money supply in the economy, RBI increases the CRR. With the increase in CRR, the lending power of the commercial banks decrease, the availability of the credit to the public also decrease.

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On the other hand, if there is a condition of recession in the economy. In this condition RBI decreases the CRR, so that the lending power of the commercial banks increase, and also the availability of credit to the public. By increasing and decreasing the rate of the CRR, RBI can affect the availability of the credit to the public.

3. **Bank rate policy:** The instrument of bank rate also plays a crucial role in money control. Bank rate is a rate at which RBI should be prepares to buy or rediscount eligible bills of exchange and other commercial papers. The bill market in India is not well developed in comparison with other developed countries, that's why RBI has to makes advances to banks mainly in other forms.
4. **Working of bank rate:** An increase in the bank rate raises the cost of borrowed reserves by the commercial banks, and subsequently the commercial banks increase the PLR (prime lending rate), which discourages the public to take loans from banks. By increasing bank rate, RBI can decrease the money supply in the economy.

   On the other hand, a decrease in bank rate decreases the cost of borrowed reserves by the commercial banks, and subsequently the commercial banks decrease the PLR. Hence, people can avail loans at a lower interest rate. By decreasing the bank rate, RBI can increase the money supply in to the economy.
5. **Statutory liquidity ratio:** Statutory liquidity ratio is another instrument of money control. According to this instrument each and every commercial bank has to require statutory to maintain a minimum proportion of their daily total demand and time liabilities in the form of liquid assets.

   Liquid assets can be as follows:

   - Other approved securities
   - Current-account balances with other banks

By increasing and decreasing of statutory liquidity ratio the RBI can increase or decrease the money supply in to the economy.

In the condition of excess money supply, RBI increases the statutory liquidity ratio, to decrease the lending power of the banks. In controlling the money supply, statutory liquidity ratio works indirectly rather than directly.

Moral Suasion

Moral suasion is a combination of persuasion and pressures. The central bank of any country is always in a position to use this on commercial banks. In this instrument, the bank uses discussions, letters and speeches. The RBI issues letters to banks making clear its policy and urging banks to fall in line.

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Selective Credit Control

Normally selective credit control is used in western countries. The working of this instrument is very simple; the availability of bank finance for purchasing and holding some commodities is restricted. In India, the holding of food grains, agricultural raw material and other essential commodities is restricted to control the undue rise in their prices.

Fiscal Measures

The fiscal policy is prepared by the union finance minister. The first goal of the fiscal policy is to increase tax revenue as well as non-tax revenue. On the other hand, the other goals of fiscal policy are to maintain public services like food, shelter, safe drinking water, to bridge the gap between rich and poor, to control the money in circulation, full employment and to increase the rate of saving and rate of investment.

The fiscal policy is a projected balance sheet of the nation or a country. It is a study of allocation of the resources and generating those resources. The Finance Minister implements the fiscal policy through the budget. The budget is a future statement of revenue and expenditure of the state or a nation. According to Harvey and Johnson changes in government expenditure and taxation are designed to influence the patterns and level of activity.

With the help of fiscal policy, a government tries to bridge the gap in income levels, which affects the development of the country. With the equal distribution of income and wealth, a country can perform well in all the sectors. According to Otto Eckstein, changes in taxes and expenditure which aim at short-run goals of full employment, price level and stability.

Meaning of Budget

Budget has an important role in the economy of any country. It is the central point of the financial administration. The government can affect the economic activities of the country with the help of budget in terms of allocation and administration of the available resources. The budget is vertically divided into two parts: revenue and expenditure. Horizontally, it is divided into two part revenue account and capital account.

Objectives of Fiscal Policy

The major objectives of the fiscal policy are as follows.

- To finance various developmental projects, mobilization of resources is needed
- To get the maximum utilization of the available resources
- To get full employment
- To decrease regional disparities
- To control the inflationary pressure in the economy

- To reduce the per centage of below poverty line (BPL) population
- To increase the rate of capital formation with the increasing rate of saving and investment

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Aspects of Fiscal Policy

There are mainly four aspects of fiscal policy, which are as follows:

1. **Taxation policy:** Taxation policyplays a vital role in the collection of revenue for the government in any country. Government can impose a direct tax and indirect tax. Direct tax is the tax in which impact and incidence of tax burden are on the individual person. In other words, he or she cannot shift the tax burden to others. In indirect tax, shifting of tax burden is possible.

   The main objectives of the tax policy are as follows:

   - To mobilize idle resources
   - To bridge the gap between rich and poor
   - To check the inflation by adopting an anti-inflationary taxation policy
   - Public expenditure policy
   - Public debt policy
   - Deficit financingpolicy

2. **Public expenditure policy:** In developing countries fiscal policy has a vital role in the economic development of the countries. After collecting the revenue from the public, government engages in public expenditure, which can be developmental or non-developmental expenditure. Developmental expenditures are generally related with developmental activities like roads, hospitals, bridges, infrastructure, railway. Non-developmental expenditures are generally related with maintenance of law and order, defence and so on.

3. **Public debt policy:** Mostly in developing countries, people have a low taxable capacity. They cannot afford a higher rate of tax imposed by the government. To finance the developmental projects governments take loans from the public. It is known as public debt. Public debt helps the government in two ways, firstly it soaks the excess liquidity from the market that creates the inflationary pressure, and secondly it helps the government in financing the developmental projects, which are necessary for the economic development of the country. This debt can be internal or external. Government can also take the loan from the external resources like, World Bank, IMF, IDA etc.

4. **Deficit financing policy:** When the government expenditure exceeds the government revenue, this condition is known as deficit, and to finance that deficit government apply this policy. In this policy government can take the loan from the central bank in the form of issuing the fresh currencyto finance the deficit. In the developing countries, where the taxable capacity, as well

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as rate of saving and the rate of investment are low, deficit financing policy is very useful for the economic development of those countries.

5. **Increase in taxation:** With an increase in the taxation, the disposable income of the consumers decreased, now because the purchasing power of the consumer decreased they can purchase a lesser amount of goods. Both the taxes have the adverse effect on purchasing power, direct tax and indirect tax.

   Direct tax decreased the disposable income of the consumer and on the other hand, indirect tax increased the prices of the commodities. Thus, by increasing the rate of tax, government can control the inflation.

6. **Decrease in the public expenditure:** In the period of inflation, the government should decrease the amount of public expenditure, so that the velocity of the money decreased. The main policy in the period of inflation should be decrease in the unproductive expenditure.

7. **Increase in public debt:** In the period of inflation, the government should take the public debt in larger amount. It affects the inflation in two ways, first it reduces the purchasing power of the consumers and secondly, after collecting the debt from the public, government can invest that into the manufacturing process, so that the output of the economy increased. With an increment in the output government can control the inflation.

8. **Balanced budget policy:** In the period of inflation, government should follow the balanced budget policy. Government should not prepare the deficit budget in the inflation, because it leads to the inflation.

9. **Control over consumption:** In the period of inflation, the government should control the consumption, especially unproductive and demonstration expenditure.

10. **Encouragement to savings:** In the period of inflation, government should encourage saving, it can be through launching of new saving schemes. Government should also increase the deposit rates.

11. **Overvaluation:** In the period of inflation, government can also over valuate the value of the currency, through over valuation will cause exports to decrease and imports to increase.

12. **Control over investment:** You have seen that in the period of inflation, investment increased in a larger amount. Because of this the profit as well as the inflation both increases. Banks and other financial institutions also provide the loan easily in this time period, the government should control it.

    Some other measures to curb inflation are as follows:

    - **Increase in production:** The best and the most convenient way to control inflation is to increase the amount of production. In the time

period of inflation, the agriculture and the industrial sectors should be promoted through tax relief and subsidy.

- **Proper use of tariffs and quotas:** In the time period of inflation, imports should be promoted and on the other hand, exports should be minimized through proper use of tariffs and quotas.

12.4.1 Inflationary Trends in India

During the past two decades, the Indian economyhas been in the grip of stagflation–condition characterized by near-stagnant output with a rising price level. Prices had recorded a steady rise, especially during the 80s. During 1990–91, the annual inflation rate was 13.6 per cent while the food price index recorded a steeper rise of 16.3 per cent and of 25.4 per cent during 1990–91 and 1991–92 respectively.As against the prevailing inflationarytrend in the economy, the industrial sector has been sluggish ever since 1990–91. Production of several individual industries has recorded a sharp decline. Electrical machinery, electronics, automobiles, rubber and plastics, leather, textiles and engineering products have all been in the grip of severe recession. Perhaps the₹18,000 crore automobile industry has been the worst affected forcing the manufacturers of cars, two-wheelers and light commercial vehicles to curtail production and lay-off workers. Due to the slow down in the agricultural and industrial production, the growth rate of real gross domestic product fell from about 6 per cent in 1989–90 to 5.5 per cent in 1990–91 and to 1.5 per cent in 1991–92. Value addition in the agricultural sector fell by 0.8 per cent while that in the industrial sector fell by 0.3 per cent during 1991–92. During 1998–99, the gross domestic product grew by 6 per cent with agricultural production showing a dismal growth of less than 2 per cent. In November 1998, the annual inflation rate stood at 8 per cent which was a three-year high. During 1999–2000, the gross domestic product grew by 5 per cent with the agricultural and industrial sectors growth being 3 per cent and more than 8 per cent respectively and the annual inflation around 6 per cent. The performance of the economy in 2006 was no better.

Recent Trends

As per the Ministry of Statistics and Programme Implementation, in June 2011, the inflation rate was 9.6 per cent. In 2016, India inflation rate for 2016 was 4.94%, a 0.93% decline from 2015. India inflation rate for 2017 was 2.49%, a 2.45% decline from 2016. India inflation rate for 2018 was 4.86%, a 2.37% increase from 2017. India inflation rate for 2019 was 7.66%, a 2.8% increase from 2018.

12.5 ANSWERS TO CHECK YOUR PROGRESS QUESTIONS

NOTES

1. Inflation, in general, may be defined as a sustained rise in the general price level brought about byhigh rates of expansion in the aggregate moneysupply.
2. All the definitions have a common feature of stressing the point that inflation is a process of rising prices and not a state of high prices, showing a state of disequilibrium between the aggregate supply and the aggregate demand at the existing or current prices necessitating a rise in the general price level in the economy.
3. According to most economists, price stability is the main objective of economic policies.
4. At the time of lower level of production, the demand exceeds the supply; this situation is known as inflation. Production inflation can also exist when the production is fixed and the money income of the consumers increases.
5. The term open market operation means the purchase and sale of government securities by the RBI from and to the public and also from and to the banks. When there is a situation of inflation in the economy, that time government can sell the government securities to the public and also to the bank to soak the excess liquidity in terms of excess money supply from the economy.
6. The fiscal policy is a projected balance sheet of the nation or a country. It is a study of allocation of the resources and generating those resources.

12.6 SUMMARY

- According to the public understanding, inflation means a condition which produces a rising trend in the general price level in the economy. Inflation may, however, be present in the economy if the sustained price rise, which would have otherwise occurred, is prevented from occurring by imposing the price and physical controls in the economy. Such a situation is called 'suppressed inflation'.
- According to the Chambers' Twentieth Century Dictionary, inflation is an 'undue increase in quantity of money in proportion to buying power, as on an excessive issue of fiduciary money.' GardnerAckley has defined inflation 'as a persistent and appreciable rise in the general level or average of prices.'
- In general, inflation may, therefore, be defined as a sustained rise in the general price level brought about by high rates of expansion in the aggregate money supply although in the contemporary discussions on inflation it is defined as a sustained rise in the general price level, howsoever generated.

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- It should be noted that most economists all around the world have assumed that price stability is the main objective of economic policies. The value of money can be divided into four parts – Inflation, Deflation, Reflation and Disinflation.
- At the time of lower level of production, the demand exceeds the supply; this situation is known as inflation. Production inflation can also exist when the production is fixed and the money income of the consumers increases.
- Galloping inflation is the worst form of inflation, which is possible in any country after the failure of central bank, and other monetary authorities. In this situation, the increase in price affects people very badly and the prices became uncontrollable. According to Keynes, 'this condition of inflation is possible only after the point of full employment.'
- Aggregate demand can increase or decrease depending on several factors such as exchange rates, distribution of income, expectations and monetary and fiscal policies. These factors cause upward or downward shifts in the aggregate demand curve.
- The new inflation theory or cost push inflation theory explains that inflation occurs because of the rise in the cost of goods by an increase in the cost of production.
- In today's world, trade unions are very strong, and they push the producers for higher wages. In this theory, it has been discussed that mainly the trade unions are responsible for wage push inflation. When trade unions push for higher wages, which are not justifiable either on the grounds of a prior rise in productivity or of cost of living, they produce a cost push effect.
- The profit push inflation is one of the causes of cost push inflation; firms operating under the monopoly market or in oligopolistic market can charge a higher price to increase their profits. In the above case because of the increase in wages of the employees, the cost push inflation exists. However, in this case, the cause of cost push inflation is the increase of profit.
- Both the demand pull and the cost push inflations are closely related, and intertwined with the now widely held view that the problem of inflation is more sociological than economic in nature.
- The future of the governments and the political parties depend on how they tackle the problem of inflation. Many aspects of our everyday activities are in some way influenced by the level of and changes in the rate on inflation.
- A high rate of inflation makes the life of the poor very miserable. During mild inflation, consumers generally cut their spending on luxurious goods, corporate profits increases sharply due to the increase in price and they build up new inventories. Also in government sector, the tax collected from indirect tax also rises. It also affects the income distribution of the economy.

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- The term open market operation means the purchase and sale of government securities by the RBI from and to the public and also from and to the banks. When there is a situation of inflation in the economy, that time government can sell the government securities to the public and also to the bank to soak the excess liquidity in terms of excess money supply from the economy.
- If there is a recession in economy. In this situation, government can correct the situation by purchasing the government securities from the public and from the banks. In recession, aggregate demand for the goods and the services decrease and because of this the production also decrease and consequently the employment.
- In most of the developing countries open market operation is regarded as the most efficient instrument of the monetary policy.
- Statutory liquidity ratio is another instrument of money control. According to this instrument each and every commercial bank has to require statutory to maintain a minimum proportion of their daily total demand and time liabilities in the form of liquid assets.
- Moral suasion is a combination of persuasion and pressures. The central bank of any country is always in a position to use this on commercial banks. In this instrument, the bank uses discussions, letters and speeches. The RBI issues letters to banks making clear its policy and urging banks to fall in line.
- The fiscal policy is prepared by the union finance minister. The first goal of the fiscal policy is to increase tax revenue as well as non-tax revenue. On the other hand, the other goals of fiscal policy are to maintain public services like food, shelter, safe drinking water, to bridge the gap between rich and poor, to control the money in circulation, full employment and to increase the rate of saving and rate of investment.
- Budget has an important role in the economy of any country. It is the central point of the financial administration. The government can affect the economic activities of the country with the help of budget in terms of allocation and administration of the available resources. The budget is vertically divided into two parts: revenue and expenditure. Horizontally, it is divided into two part revenue account and capital account.
- Taxation policy plays a vital role in the collection of revenue for the government in any country. Government can impose a direct tax and indirect tax. Direct tax is the tax in which impact and incidence of tax burden are on the individual person. In other words, he or she cannot shift the tax burden to others. In indirect tax, shifting of tax burden is possible.
- In developing countries fiscal policy has a vital role in the economic development of the countries. After collecting the revenue from the public, government engages in public expenditure, which can be developmental or non-developmental expenditure. Developmental expenditures are generally

related with developmental activities like roads, hospitals, bridges, infrastructure and railway. Non-developmental expenditures are generally related with maintenance of law and order, defence and so on.

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12.7 KEY WORDS

- **Inflation:** It is a general increase in prices and fall in the purchasing value of money.
- **Bank rate:** It is the interest rate set by the banks for lending to other banks, used as the benchmark for interest rates generally.
- **Statutory Liquidity Ratio:** It is the Government term for the reserve requirement that commercial banks are required to maintain in the form of cash, gold reserves, PSU Bonds and Reserve Bank of India-approved securities before providing credit to the customers.
- **Suasion:** It is the persuasion as opposed to force or compulsion.
- **Fiscal policy:** It is the means by which a government adjusts its spending levels and tax rates to monitor and influence a nation's economy.
- **Stagflation:** It is the persistent high inflation combined with high unemployment and stagnant demand in a country's economy.

12.8 SELF ASSESSMENT QUESTIONS AND EXERCISES

Short-Answer Questions

1. List the forms of inflation.
2. What is anticipated inflation and unanticipated inflation?
3. Discuss the working of Cash Reserve Ratio (CRR).
4. State the goals of the fiscal policy.
5. List the objectives of fiscal policy.
6. Differentiate between monetary policy and fiscal policy.

Long-Answer Questions

1. Describe inflation on the basis of motion.
2. Explain the factors that increase or decrease the aggregate demand.
3. What is cost push inflation? Explain with its types.
4. Describe the effects of inflation.
5. Illustrate the elements of money control.

6. Examine the various aspects of fiscal policy.
7. Analyse the inflationary trends in India.

NOTES

12.9 FURTHER READINGS

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UNIT 13 TRADE CYCLE

Structure

13.0 Introduction
13.1 Objectives
13.2 Meaning and Importance
13.3 Answers to Check Your Progress Questions
13.4 Summary
13.5 Key Words
13.6 Self Assessment Questions and Exercises
13.7 Further Readings

NOTES

13.0 INTRODUCTION

A trade cycle or business cycle represents fluctuations in economic activities such in employment, output and income, prices and profits. Different economists have given their definitions of trade cycle. According to Mitchell, "Business cycles are of fluctuations in the economic activities of organized communities. The adjective 'business' restricts the concept of fluctuations in activities which are conducted on commercial basis in a systematic manner.

A business cycle is synchronic, i.e., when cyclical fluctuations start in one field, it spreads to other fields also. Usually, a trade cycle includes four phases – depression, recovery, prosperity and recession. During the phase of depression, the level of economic activity is extremely low. Real income production, employment, prices, profit etc., fall down. There are idle resources. Price is low leading to a fall in profit, interest and wages. All the sections of the people suffer as many businesses get closed during this phase. Recovery represents the turning point of business cycle form depression to prosperity. In this phase, there is a slow rise in output, employment, income and price. Demand for commodities go up. Prosperity is a state in which real income and employment are high. There are no idle resources. There is no wastage of materials. There is rise in wages, prices, profits and interest. However, this state does not stay for long as the forces of expansion are very weak. Factors like scarcity of labour, raw material and other problems of production lead to recession state. Let us study the concept of trade cycle in detail in this unit.

13.1 OBJECTIVES

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

- Understand the concept of trade cycle given by different economists
- Discuss the importance of trade cycle

13.2 MEANING AND IMPORTANCE

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Historically it is very difficult to say when the systematic analysis of rhythmic regularly recurring fluctuations in the aggregate economic activity began. The classical economists believed that the economy always tended to return to the full employment equilibrium in the long-run. Consequently, they could not develop any theory of trade cycle in terms of a recurring pattern generated by the endogenous forces rather than in terms of the exogenous shocks caused by such factors as labour movements, discovery of new gold mines or the other diverse phenomena. Although the pre-Keynesian macroeconomics recognized the possibility of the total employment and output falling below the full employment level, such a situation was, however, regarded as transitory. It was argued by the classical economists that the automatic market forces would always tend to restore equilibrium in the economy at that level where the economy's total labour force was fully employed. Consequently, in such a system of economic thought, deviations from full employment were not taken seriously since lapses from full employment could at best be regarded as temporary exceptions.

This is not, however, to deny the fact of studies of the 'panics' in the 19th century made by some eminent classical economists. David Ricardo, the arch-pillar of classical economics, wrote in 1817 of 'revulsions in trade' while John Stuart Mill, the last representative of the classical school in whose hands classical economics attained the zenith of its glory and with whom also began its decline, discussed the issue of 'commercial crises' in 1848 in detail. However, by and large, the systematic study of trade cycles as periodically recurring phenomena in business activity was yet to make its real beginning. None of the few dissenters who attacked the classical macroeconomic theory of full employment was able to buttress his attack with an alternative theory. Thomas Robert Malthus, a dissenter of the early 19th century, could not attack the accepted classical theory successfully because apart from appealing to observed facts, he could not construct an alternative theory capable of explaining the causes of unemployment and depression. In short, the classical macroeconomic theory is deficient in respect of the trade cycle analysis.

According to Joseph A Schumpeter, Clement Juglar was the first to make a systematic study of the trade cycle.[1] In his book titled *Des Crises Commercials* published in 1860, on the basis of rich data, Juglar discussed the business or trade cycles with three phases of prosperity, crises and liquidation spread over an average period of 9–10 years. At present, however, the literature covering the different explanations of the occurrence of trade cycles is so copious[2] that even its brief discussion would make a complete book. Confining our discussion to the last few decades, among the economists whose names can be mentioned in connection with the trade cycle theories, we would include the contributions

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of Joseph A Schumpeter, Alvin H Hansen, Lloyd A Metzler, Roy F Harrod, M Kalecki, Paul ASamuelson, Nicholas Kaldor, John R Hicks, Richard M Goodwin, James S Duesenberry and a few others. It is not, however, possible to do justice to the contributions of all these economists here. Consequently, we shall confine ourselves to a brief discussion of Schumpeter's innovations theory; monetary theory developed by Friedrich A von Hayek and Ralph George Hawtrey; John Maynard Keynes' theory; Nicholas Kaldor's theory; John R Hicks' theory and Paul ASamuelson's multiplier-accelerator interaction approach to the trade cycle.

Concept and Phases of Trade Cycle

Broadly speaking, trade or business cycles are those fluctuations which recur in aggregate economic activities with a certain degree of regularity following the pendulum like oscillations.According to Wesley Clair Mitchell, who did pioneering work in this field, 'business cycles are a type of fluctuations found in the aggregate economic activityof nations that organize their work mainlyin business enterprises. A cycle consists of expansions occurring at about the same time in many economic activities followed bysimilarly general recessions, contractions and revivals which merge with the expansion phase of the next cycle, this sequence of change is recurrent but not periodic.'[3] This definition reveals that business cycles are fluctuations in the aggregate economic activity and, therefore, are concerned with the economy as a whole. Apart from this feature, business cycles are confined to only those fluctuations which recur with regularity. John Maynard Keynes has ably described the concept and main characteristics of trade cycle in the following words.

'By a *cyclical* movement we mean that as system progresses in, e.g., the upward direction, the forces propelling it upwards at first gather force and have a cumulative effect on one another but gradually lose their strength until at a certain point they tend to be replaced by forces operating in the opposite direction; which in turn gather force for a time and accentuate one another until they too, having reached their maximum development, wane and give place to their opposite force. We do not, however, merely mean by a *cyclical* movement that upward and downward tendencies once started, do not persist for ever in the same direction but are ultimately reversed. We also mean that there is some recognizable degree of regularity in the time sequence and duration of the upward and downward movements.

There is, however, another characteristic of what we call the Trade Cycle which our explanation must cover if it is to be adequate; namely, the phenomenon of the *crisis*— the fact that the substitution of a downward or an upward tendency often takes place suddenly and violently, whereas there is, as a rule, no such sharp turning-point when an upward is substituted for a downward tendency.'[4]

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According to Keynes' description, a trade cycle is characterized by the alternating expansionary and contractionary wavy movements in the aggregate business activity and there is some regularity in respect of the duration and time sequence of the upward and downward movements of a trade cycle. Furthermore, a trade cycle is characterized by the presence of crisis, i.e., the peak and trough turning-points are asymmetrical, with the peak having pointed steep bends on either side while the trough has gently upward sloping sides. In short, a trade cycle refers to the wave-like movements of the economy caused by outside impulses operating upon the economy.

According to Arthur F Burns and Wesley Clair Mitchell, a normal trade cycle consists of four closely inter-related phases of revival, expansion, recession and contraction. The *peak* and *trough* represent the critical mark-off points in the cycle. From this stand-point, the greater part of the cycle can be divided into the *expansion* phase which extends from the trough to the peak. In the neighbourhood of the peak and trough there are the upper and lower turning points of relatively short duration designated as revival and recession.

According to Schumpeter, a trade cycle represents wave-like deviations in the business activity from equilibrium or trend line. There are equilibrium points and equilibrium areas which cluster around these equilibrium points. Schumpeter's analysis involves the *four-phase cycle* consisting of the prosperity, recession, depression and recovery. The business cycle is divided into two parts—the upper half and the lower half. The upper half of the cycle above the trend or equilibrium line is divided into prosperity and recession while the lower half of the cycle below the trend line is divided into depression and recovery. Figure 13.1 illustrates the four-phase Schumpeterian trade cycle. In the figure, the prosperity and recession phases show that the level of aggregate economic activity in the economy is above normal while the depression and recovery phases show that the economy is operating at below normal level of economic activity. In the *prosperity* phase, employment continues to increase but at diminishing rate until the cycle peak is reached. In the *recession* phase, employment decreases at an accelerating rate until the point of inflexion is reached at *B*. Hereafter, the cycle moves into the lower half of the four-phase cycle. The lower half, like the upper half, is also divided into the two phases of depression and recovery. In the *depression* phase, employment continues to fall but the rate of fall gradually decreases until the cycle trough is reached. In the *recovery* phase employment continues to increase at an increasing rate until the point of inflexion is reached at point C.[5]

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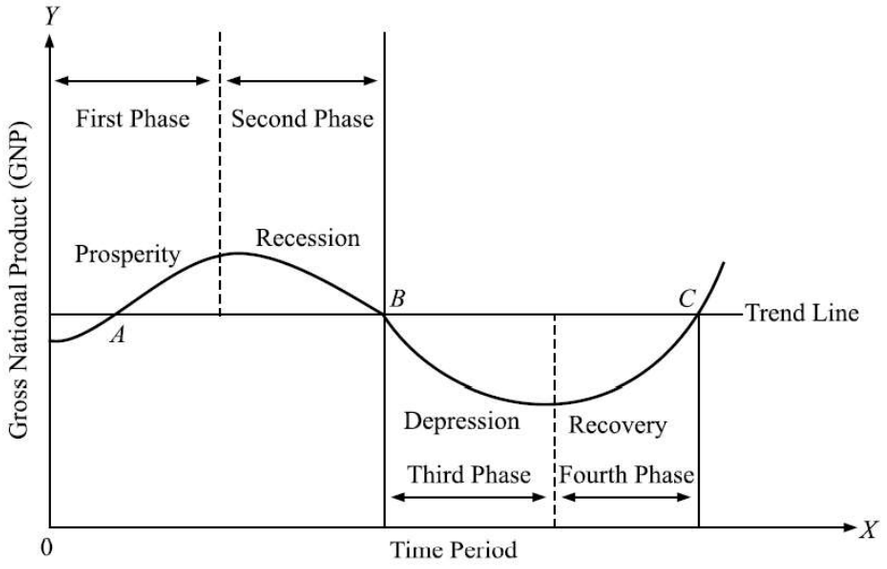

Fig. 13.1 *Business Cycle*

13.3 ANSWERS TO CHECK YOUR PROGRESS QUESTIONS

1. Broadly speaking, trade or business cycles are those fluctuations which recur in aggregate economic activities with a certain degree of regularity following the pendulum like oscillations.
2. By a cyclical movement we mean that as system progresses in, e.g., the upward direction, the forces propelling it upwards at first gather force and have a cumulative effect on one another but gradually lose their strength until at a certain point they tend to be replaced by forces operating in the opposite direction; which in turn gather force for a time and accentuate one another until they too, having reached their maximum development, wane and give place to their opposite force.

13.4 SUMMARY

- According to Joseph ASchumpeter, Clement Juglar was the first to make a systematic study of the trade cycle. In his book titled *Des Crises Commercials* published in 1860, on the basis of rich data, Juglar discussed

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the business or trade cycles with three phases of prosperity,: crises and liquidation spread over an average period of 9–10 years. At present, however, the literature covering the different explanations of the occurrence of trade cycles is so copious that even its brief discussion would make a complete book.

- According to Wesley Clair Mitchell, who did pioneering work in this field, 'business cycles are a type of fluctuations found in the aggregate economic activity of nations that organize their work mainly in business enterprises. A cycle consists of expansions occurring at about the same time in many economic activities followed by similarly general recessions, contractions and revivals which merge with the expansion phase of the next cycle, this sequence of change is recurrent but not periodic.' This definition reveals that business cycles are fluctuations in the aggregate economic activity and, therefore, are concerned with the economy as a whole.
- According to Keynes' description, a trade cycle is characterized by the alternating expansionary and contractionary wavy movements in the aggregate business activity and there is some regularity in respect of the duration and time sequence of the upward and downward movements of a trade cycle.
- According to Arthur F Burns and Wesley Clair Mitchell, a normal trade cycle consists of four closely inter-related phases of revival, expansion, recession and contraction. The *peak* and *trough* represent the critical mark-off points in the cycle. From this stand-point, the greater part of the cycle can be divided into the *expansion* phase which extends from the trough to the peak.
- According to Schumpeter, a trade cycle represents wave-like deviations in the business activity from equilibrium or trend line. There are equilibrium points and equilibrium areas which cluster around these equilibrium points. Schumpeter's analysis involves the *four-phase cycle* consisting of the prosperity, recession, depression and recovery. The business cycle is divided into two parts—the upper half and the lower half. The upper half of the cycle above the trend or equilibrium line is divided into prosperity and recession while the lower half of the cycle below the trend line is divided into depression and recovery.

13.5 KEY WORDS

- **Trade cycle:** It is a cycle or series of cycles of economic expansion and contraction.
- **Crisis:** It refers to a time of intense difficulty or danger.

13.6 SELF ASSESSMENT QUESTIONS AND EXERCISES

NOTES

Short-Answer Questions

1. Give the description of trade cycle according to Keynes.

Long-Answer Questions

2. Illustrate the four-phase Schumpeterian trade cycle.

13.7 FURTHER READINGS

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[3] W C Mitchell, *Business Cycle: The Problem and Its Setting*, New York, NBER, 1957, p. 468.

[4] J M Keynes, *The General Theory of Employment, Interest and Money*, 1936, p. 313–4.

[5] Joseph A Schumpeter, *Business Cycles*. 1939, Volume I, p. 207–9.

UNIT 14 MONETARY POLICY OF RBI

NOTES

Structure

14.0 Introduction
14.1 Objectives
14.2 RBI Monetary Policy
14.3 Answers to Check Your Progress Questions
14.4 Summary
14.5 Key Words
14.6 Self Assessment Questions and Exercises
14.7 Further Readings

14.0 INTRODUCTION

Monetary policy refers to the policy of the central bank with regard to the use of monetary instruments under its control to achieve the goals specified in the Act. The Reserve Bank of India (RBI) is vested with the responsibility of conducting monetary policy. This responsibility is explicitly mandated under the Reserve Bank of India Act, 1934. The primary objective of monetary policy is to maintain price stability while keeping in mind the objective of growth. Price stability is a necessary precondition to sustainable growth. In May 2016, the Reserve Bank of India (RBI) Act, 1934 was amended to provide a statutory basis for the implementation of the flexible inflation targeting framework. The amended RBI Act explicitly provides the legislative mandate to the Reserve Bank to operate the monetary policy framework of the country. The framework aims at setting the policy (repo) rate based on an assessment of the current and evolving macroeconomic situation; and modulation of liquidity conditions to anchor money market rates at or around the repo rate. Repo rate changes transmit through the money market to the entire the financial system, which, in turn, influences aggregate demand – a key determinant of inflation and growth. The MPC determines the policy interest rate required to achieve the inflation target. The first meeting of the MPC was held on October 3 and 4, 2016 in the run up to the Fourth Bi-monthly Monetary Policy Statement, 2016-17. The Reserve Bank's Monetary Policy Department (MPD) assists the MPC in formulating the monetary policy.

In this unit, we shall study the reviews of the monetary policy in the last five years, i.e., from FY15-16 to FY19-20.

14.1 OBJECTIVES

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

- Understand the concept of monetary policy
- Review of the monetary policy in the last five years, i.e., from FY15-16 to FY19-20
- Discuss the recent steps taken by the RBI to deal with the COVID-19 situation

14.2 RBI MONETARY POLICY

Monetary policy is a macroeconomic policy laid down by the Reserve Bank of India that involves management of interest rates and supply of money aimed at controlling inflation, liquidity and consumption that impacts some aspects like economic growth, price stability, social justice, and promotion of business. The economic environment tends to change regularlywith time and this raises the need to bring in changes in the monetary policy. Atime-to-time review of the prevailing economic condition is followed by policy changes, which is declared through the monetary policy statement issued by the RBI.

The review and the resultant policy changes are being framed by the Monetary Policy Committee (MPC), a Central Government constituted RBI body under section 45ZB of RBI Act, 1934. The MPC has six members, of which three members are nominated by the Central Government with a condition that they cannot be government officials and the other three are the Governor of RBI, who is also the ex-officio Chairperson of the committee, Deputy Governor of the RBI who is in charge of the monetary policy and an Executive Director of the RBI. The main functions of MPC are to decide the different interest rates, repo rates, reverse repo rates, CRR, Marginal Standing Facility (MSF) and Liquidity Adjustment Facility (LAF). Usually, six review meetings are held by the MPC, but in FY'20, there will be an extra meeting held in view of the Covid-19 pandemic and its macroeconomic impact and there will be five review meetings in FY'21.

Study of reviews of the monetary policy in the last five years i.e. from FY15-16 to FY19-20 will entail discussing various monetary policy review statements issued by the RBI during this period, since there are multiple review meetings been held by the MPC in every financial year.

The reviewis done on thebasis of the thenprevailingmacroeconomic situation and evolving scenario and the following policy decisions were taken and assessments were made:

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First Bi-monthly Monetary Policy review statement, 2015-16 announced on 7th April, 2015.

- The repo rate under liquidity adjustment facility (LAF) was left unchanged at 7.5 per cent.
- The reverse repo rate under LAF was also retained at 6.5 per cent.
- Cash Reserve Ratio (CRR) of the scheduled banks was kept unchanged at 4.0 per cent of the net demand and time liabilities (NDTL).
- Retain Statutory Liquidity Ratio (SLR) at 21.5 per cent.
- It was decided to continue to provide liquidity under overnight repos at 0.25 per cent of bank-wise NDTL at the LAF repo rate and liquidity under 7-day and 14-day term repos of up to 0.75 per cent of NDTL of the banking system through auctions.
- The marginal standing facility (MSF) rate and the Bank Rate were kept unchanged at 8.5 per cent.
- The estimated GDP growth rate for the FY'16 was projected at 7.6 per cent as against 7.5 per cent in FY'15.
- Consumer Price Index (CPI) inflation was forecasted at 5.8 per cent by March'16.
- It was projected that CPI inflation would drop to 4.0 per cent in August'15.
- 17 per cent of the sown rabi crop area was affected by hailstorms.
- That future rate cuts will depend upon the interest rate cuts by banks.
- Allow Co-operative banks to set up off-site/mobile ATMs without prior permission of the RBI.
- RBI took into consideration the improvement of the Micro-Finance Institutions (MFIs) and the recommendations of the Committee on Comprehensive Financial Services for Small Businesses and Low-Income Households and took the following decisions:
  (i) That the total indebtedness of the borrower be raised to ₹1,00,000/- from the existing ₹ 50,000/- (excluding educational/medical expenses).
  (ii) The minimum rural household income that will be eligible to get a loan disbursed was raised to ₹ 1,00,000 from existing ₹60,000/- and for urban and semi-urban household, it was raised to ₹1,60,000/- from ₹ 1,00,000/-.
  (iii) That the maximum amount of loan to be disbursed in the first cycle was raised to ₹ 60,000/- from ₹ 35,000/- and to ₹ 1,00,000/- from ₹ 60,000/-.
- In order to promote liquidity, a scheme for market making by primary dealers in semi-liquid and illiquid government securities is to be formulated by RBI.

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Second Bi-monthly Monetary Policy Statement, 2015-16 announced on 2nd June, 2015.

- The repo rate under LAF was cut by 25 basis points to 7.25 per cent from the existing 7.5 per cent.
- CRR was kept unchanged at 4.0 per cent of net demand and time liabilities (NDTL).
- The reverse repo rate under LAF was reduced to 6.25 per cent from 6.5 per cent.
- The marginal standing facility (MSF) rate and the Bank Rate were reduced to 8.25 per cent from 8.5 per cent.
- The liquidity under overnight repos at 0.25 per cent of bank-wise NDTL at the LAF repo rate and liquidity under 7-day and 14-day term repos of up to 0.75 per cent of NDTL of the banking system through auctions was continued to be provided.
- The Statutory Liquidity Ratio (SLR) was retained at 21.5 per cent.
- CPI inflation was projected to rise to 6 per cent in January 2016.
- The retail inflation slowed down for the second consecutive month, food inflation was at a four month low with the negative impact of unseasonal rainfall still not visible whereas the fuel inflation accelerated for the fourth month in a row reaching the highest mark in the last twelve months, due to rise in prices of electricity and firewood.
- Inflation apart from food and fuel went up marginally with rising expenses on hose rent, education, medical and transport expenses being the major contributors.
- After a strained situation in the second fortnight of March 2015 that was attributed to advance tax refunds year-end banking adjustments, the liquidity conditions improved in April 2016.
- It was observed that export growth rate has steadily declined since July 2014 and had entered into contraction during January to April 2016.
- The RBI suggested that an effective food policy management to keep inflation under control.
- Public sector banks were told to ensure that the capital infused in them should flow to the productive sectors.

Third Bi-monthly Monetary Policy Statement, 2015-16 announced on 4th August, 2015.

- Repo rate under LAF was kept unchanged at 7.25 per cent.
- CRR also remained unchanged at 4.0 per cent of NDTL.

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- The liquidity under overnight repos and the 7-day and 14-day term repo rates also remained unchanged at 0.25 per cent and 0.75 per cent of NDTL respectively.
- The reverse repo rate was unchanged at 6.25 per cent and MSF and Bank Rate also remained unchanged at 8.25 per cent.
- A very good rainfall in June followed by below par in July resulted in a normal monsoon, that filled the reservoirs to a level augurs well for the kharif crops, particularly in irrigation dominated areas.
- The consumption demand picked up in the urban areas.
- The liquidity condition in June and July were very comfortable.
- For the second straight month in June 2015, the CPI inflation rose and was at a nine-month high.
- Restrained exports were due to weak global demand.
- It was observed that even though the banks interest rate cut by 0.75 per cent since January 2016, only 0.30 per cent was actually passed on to the customers.

Fourth Bi-monthly Monetary Policy Statement, 2015-16 announced on 29th September, 2015.

- The repo rate under LAF was reduced by 50 basis points from 7.25 per cent to 6.75 per cent.
- The CRR remained unchanged at 4.0 per cent of NDTL.
- The reverse repo rate was reduced by 50 basis points to 5.75 and the MSF and Bank Rate was also reduced by 50 basis points to 7.75.
- The liquidity under overnight repos and the 7-day and 14-day term repo rates also remained unchanged at 0.25 per cent and 0.75 per cent of NDTL respectively.
- The output growth for 2015-2016 was readjusted to 7.4 per cent from earlier estimated 7.6 per cent.
- The inflation was expected to reach 5.8 per cent in January 2016.
- The inflation level was lowest in August after November 2014.
- ₹100, ₹500 and ₹1000 denomination banknotes in the Mahatma Gandhi Series-2005were issued by RBI with a new numbering pattern with ascending order of the size of the numbers from left to right, which is to be introduced in a phased manner for all other denominations.
- It was decided to increase in phases the limits for Foreign Portfolio Investors (FPI) investment in the central government securities to 5 per cent of the outstanding stock by March 2018. This will result in an additional investment of ₹1,200 billion in the limit for central government securities by March

2018 over and above the existing limit of ₹1,535 billion for all government securities (G-sec).

- SLR remained unchanged at 21.5 per cent.

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Fifth Bi-monthly Monetary Policy Statement, 2015-16 announced on 1st December, 2015.

- The repo rate under LAF was left unchanged at 6.75 per cent.
- The reverse repo rate remained unchanged at 5.75 per cent and the MSF and Bank rate also remained unchanged at 7.75 per cent.
- The CRR was also kept unchanged at 4.0 per cent of NDTL.
- The liquidity under overnight repos and the 7-day and 14-day term repo rates also remained unchanged at 0.25 per cent and 0.75 per cent of NDTL respectively.
- The Consumer Price Inflation (CPI) rose due to rush in monthly momentum. October 2015 witnessed a sharp rise in food inflation, pulsed being the main contributor. Few of the other reasons for rise in inflation were Housing, recreation and amusement and personal care.
- Rural demand was weak following two consecutive weak monsoons, although urban demand saw a slight upward movement.
- The Gross Value Added (GVA) in agriculture rose due to marginal increase in kharif crop production.
- There was a rise in inflation in October 2015 for the third consecutive month.
- The projected growth rate for 2015-16 has been kept unchanged at 7.4 per cent.

Sixth Bi-monthly Monetary Policy Statement, 2015-16 announced on 2nd February, 2016.

- Repo rate under LAF remained unchanged at 6.75 per cent.
- The reverse repo rate remained unchanged at 5.75 per cent and the MSF and Bank rate also remained unchanged at 7.75 per cent.
- CRR of the scheduled banks also was kept unchanged at 4.0 per cent of NDTL.
- The liquidity under overnight repos and the 7-day and 14-day term repo rates also remained unchanged at 0.25 per cent and 0.75 per cent of NDTL respectively.
- The momentum of economic activity was lost in Q3 of 2015-16 due to reduced agriculture and industrial growth.
- Rabi crop sowing in January got affected mildly due to deficient north-east monsoon to the tune of 23 per cent relative to long period average.

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- Retail inflation across all the constituent categories rose for the fifth consecutive month in December 2015.
- The liquidity position was stressed in the second fortnight of December owing to advance tax outflows and continued to be so in January 2016 as seasonal currency demand grew and there was growth in bank credit as against deposit mobilisation.
- India's exports remained in contraction mode for the thirteenth successive month in December, although the rate of decline seemed to have eased.
- The industrial activity slowed in the first two months of Q3 of 2015-16 as compared to the preceding quarter.

First Bi-monthly Monetary Policy review statement, 2016-17 announced on 5th April, 2016.

- Repo rate under LAF was reduced by 25 basis points from 6.75 per cent to 6.5 per cent.
- The CRR was kept unchanged at 4.0 per cent, but the minimum dailybalance of CRR was reduced from 95 per cent of the requirement to 90 per cent with effect from the fortnight beginning April 16, 2016.
- The reverse repo rate was increased by 25 basis points to 6.0 per cent and the MSF and Bank Rate was reduced by 75 basis points to 7.0 per cent.
- The Gross Value Added (GVA) in agriculture and allied activities weakened in the H2 (i.e. second half) of 2015-16 due to year-on-year decline in kharif crop production in Q3.
- Even though Value Added in industry accelerated in H2, the industrial production suffered due to shrinkingof manufacturingoutput since November 2015. However, robust coal output gave a thrust to mining activity and electricity generation that somehow rested the slide in overall industrial output.
- There had been s consistent decline in consumer non-durables production, especially in Q4, which reflected continued slack in rural demand. However, consumer durables demand and production remained strong, which suggested that urban demand was up to the mark.
- There was steady progress in the services sector, with hotel, transport, trade, communication, public administration, defence and related services being the main contributors during H2.
- Retail inflation dropped sharply in February after a rise in six consecutive months.
- Food inflation eased for the first time in the second half of 2015-16.
- There was a rise in CPI inflation excluding food and fuel in February.

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- The liquidity position, which was already in a very strained situation since id-December, worsened further in February, mainly due to larger-than anticipated accumulation of cash balance by the Government.
- SLR was reduced by 25 basis points from 21.5 per cent to 21.25 per cent from April 2, 2016.
- Total exports valued in US dollar terms declined for the fifteenth consecutive month, although there was an increase in the volume of trade and the rate of decline in exports was confined to single digit.

Second Bi-monthly Monetary Policy review statement, 2016-17 announced on 7th June, 2016.

- The repo rate under LAF was kept unchanged at 6.5 per cent.
- The reverse repo rate remained unchanged at 6.0 per cent and MSF rate and Bank Rate also remained unchanged at 7.0 per cent.
- There was no change in CRR and the rate remained at 4.0 per cent.
- The GVA estimate for 2015-16 scaled down the annual growth rate to 7.2 per cent.
- The Index of Industrial Production (IIP) slowed down in 2015-16 as the production declined due to weak rural consumption and restrained investment demand.
- The manufacturing purchase managers' index (PMI) remained submissive due to slowing of output and export.
- The core sector, in exception of crude oil and natural gas, showed strong growth in April 2016 as seasonal demand for electricity picked up.
- There was a sharp rise in the retail inflation due to more than expected jump in food prices.
- The CPI inflation excluding fuel and food also shot up in April due to the impact of rising petrol and diesel prices deep-seated in transport and communication.
- The liquidity situation was tight from mid-May as there was more-than usual currency demand in April and May. To ease out the pressure, the Government raised ₹00 billion through purchases under open market operations (OMOs).
- There was decline in exports in April in terms of US dollar for the seventeenth consecutive month in spite of increase in volume of exports.
- The GVA growth rate for 2016-17 was projected at 7.6 per cent.

Third Bi-monthly Monetary Policy review statement, 2016-17 announced on 9th August, 2016.

- Repo rate under LAF was kept unchanged at 6.5 per cent.
- Reverse repo rate was kept unchanged at 6.0 per cent and MSF rate and Bank Rate also remained unchanged at 7.0 per cent.

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- CRR remained unchanged at 4.0 per cent of NDTL.
- Industrial production revived in May on the back of manufacturing and mining, following a contraction in the preceding month.
- There were signs of revival in rural demand as the rate of contraction of consumer non-durables slowed.
- In June, the retail inflation was highest for a 22-month period. It was affected by rise in food and vegetable prices.
- For the first time since a combined CPI was introduced, inflation fell below 5 per cent.
- The liquidity position eased out in June and July, mainly due to increased Government spending.
- After eighteen months in the negative, merchandise exports growth finally entered the positive territory in June.
- The GVA growth projection rate for 2016-17 was retained at 7.6 per cent.
- It was targeted to keep the inflation within 5 per cent by March 2017.
- In order to maintain liquidity, it was decided by the Government to conduct an open market purchase auction on August 11, 2016.

Fourth Bi-monthly Monetary Policy review statement, 2016-17 announced on 4th October, 2016.

- Repo rate under LAF was reduced by 25 basis points from 6.5 per cent to 6.25 per cent with immediate effect.
- The reverse repo rate was reduced by 25 basis points to 5.75 per cent and MSF rate and Bank Rate was also reduced by similar margin to 6.75 per cent.
- There was a positive outlook for the agricultural activity as 85 per cent of the country received normal to excess rainfall and the overall deficiency was pegged at only 3 per cent.
- The industrial sector suffered contraction in Q2.
- Retail inflation was on the rise during April – July primarily due to rise in food inflation.
- The position of liquidity was comfortable in Q3. However, the Government still injected liquidity through open market purchases worth ₹200 billion.
- There was contraction in merchandise exports in Julyand August. However, the rate of contraction in imports was even larger, due to the contraction in domestic demand.
- The GVA growth projection rate for 2016-17 was retained at 7.6 per cent.
- Foreign exchange reserves rose to US$ 372 billion by Sept 30, 2016 which was all-time high.

Fifth Bi-monthly Monetary Policy review statement, 2016-17 announced on 7th December, 2016.

- The Repo Rate under LAF was kept unchanged at 6.25 per cent.
- The reverse repo rate was also kept unchanged at 5.75 per cent and the MSF rate and the Bank Rate also remained unchanged at 6.75 per cent.
- It was assessed that the GVA growth rate for Q2 2016-17 was lower than projected owing to excess of industrial slowdown than expected.
- There was a contraction of gross fixed capital formation for the third successive quarter.
- The assessment in this quarter was impacted by the withdrawal of specific bank notes (SBNs) under demonetisation policy from November 9, 2016.
- While there was a robust performance on the agricultural front in Q2, industry performed weakly.
- The outlook of the services sector is mixed with transportation, trade, hotels, construction and communication getting affected by withdrawal of SBN.
- Retail inflation eased more than expected for the third successive month in October due to more than expected deflation in vegetable prices.
- Inflation eased in fuel with the decline in prices of LPG on annual basis and also a fall in electricity charges.
- Liquidityconditions hadwitnessed large shifts in Q3. While liquiditycondition was very good in October and early November, the condition changed drastically by the impact of demonetization. Currency circulation plunged by 7.4 trillion rupees by December 2.
- The RBI allowed the oil bonds issued by the Government to be considered as eligible securities under LAF.
- The exports recovered in September and October supported by petroleum, Oil and Lubricants (POL) and non-POL exports.
- However, the imports also grew after a prolonged fall for 22 months, as there was a sharp increase in gold imports and higher payments for POL imports.
- April-October period saw the merchandise trade deficit lower by US $ 25 billion from its level a year ago.
- Foreign exchange reserve was calculated at US$ 364 billion on December 2, 2016.

Sixth Bi-monthly Monetary Policy review statement, 2016-17 announced on 8th February, 2017.

- Repo Rate under LAF remained unchanged at 6.25 per cent.
- Reverse Repo Rate was kept unchanged at 5.75 per cent and the MSF Rate and Bank Rate remained unchanged at 6.75 per cent.

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- CRR remained unchanged at 4.0 per cent of NDTL.
- The projected growth rate for GVA for 2016-17 is 6.9 per cent with risks evenly balanced around it.
- Projected GVA growth rate for 2017-18 is 7.4 per cent, with evenly balanced risks.
- Inflation, excluding food and fuel, hovered around 4.9 per cent.
- Retail inflation measured by headline CPI came down sharply in December and was at its lowest since November 2014. This was due to deflation in pulses and vegetable prices and moderation in the rate of price increase in high protein items like fish, eggs and meat
- RBI projected that the Current Account Deficit (CAD) in 2016-17 is likely to remain under 1 per cent of GDP.
- Export growth in December was positive for the fourth successive month.
- Imports, on the other hand, moderated in December, except for POL imports. In fact, POL imports rose by 10 per cent, as there was increase in crude oil prices.
- Rebalancing in liquidity position, which was adversely affected due to withdrawal of SBNs, was underway from mid-January onwards with restoration of money supply and injection of currency notes at a fast-tracked pace.
- Amount of Foreign exchange reserves on February 3, 2017 was US$ 363.1 billion.

First Bi-monthly Monetary Policy review statement, 2017-18 announced on 6th April, 2017.

- Repo Rate under LAF was kept unchanged at 6.25 per cent.
- The Reverse Repo Rate has been increased by 25 basis points to 6.0 per cent from 5.75 per cent.
- The MSF Rate and Bank Rate has been reduced by 25 basis points to 6.5 per cent from earlier rate of 6.75 per cent.
- CRR remained unchanged at 4.0 per cent of NDTL.
- The headline CPI inflation is projected to average 4.5 per cent in the first half and 5.0 per cent in the second half of 2017-18.
- Inflation excluding food and fuel stood at 4.8 per cent in February 2017.
- The GVA growth rate with evenly balanced risks is projected at 7.4 per cent in 2017-18, up from 6.7 per cent in 2016-17.
- There was a rise in exports in February 2017, with major contributions coming from petroleum products, rice, engineering goods and chemicals. Imports also rose due to price rise of crude oil and coal. Non-oil non-gold imports also grew moderately.

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- Q3 BOP data indicated that current account deficit for the first three quarters of 2016-17 narrowed down to 0.7 per cent of GDP at almost half of the level existing a year ago.
- The industrial output which is measured by IIP, recovered in January 2017 as against contraction in the previous month.
- It was observed that service sector performance is improving due to waning effect of demonetisation.
- Progressive remonetisation resulted in a steady decline in liquidity position from January through March wherein the amount stood at 7,956 billion rupees on 4th January, 2017 and it came down to 4,806 billion rupees in March.
- Foreign exchange reserves stood at US$ 369.9 billion on March 31, 2017.

Second Bi-monthly Monetary Policy review statement, 2017-18 announced on 7th June, 2017.

- Repo Rate under LAF was kept unchanged at 6.25 per cent.
- The Reverse Repo Rate was kept unchanged at 6.0 per cent and the MSF Rate and Bank Rate also remained unchanged at 6.5 per cent.
- CRR also remained unchanged at 4.0 per cent.
- Real gross GVA growth rate for 2016-17 was pegged at 6.6 per cent, 0.1 per cent lower than the estimated rate.
- The projection for real GVA growth rate for 2017-18 had been downgraded by 10 basis points to 7.3 per cent.
- The business expectations index indicated optimism in the manufacturing sector in Q2 of 2017-18.
- The retail inflation measured on year-to-year plummeted to a historic low in April.
- Inflation excluding fuel and food feel by 60 basis points to 4.4 per cent as compared to the previous month.
- The industrial outlook survey and the Purchasing Managers' Index (PMI) for manufacturing and services showed that pricing power remains weak.
- Exports posted a double-digit growth on March and April 2017. Imports also increased sharply during this period.
- Gold imports rose sharply, firstly due to extra demand during festive season and secondly, due to stockpiling in anticipation of rolling out of GST.
- It was projected that current account deficit will remain within 1 per cent of GDP during 2016-17.
- With evenly balanced risks, headline inflation is estimated to be around 2.0-3.5 per cent in the first half and 3.5-4.5 per cent in the second half of 2017-18.

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- The amount of foreign exchange reserves as on June 2, 2017 was US$ 381.2 billion.

Third Bi-monthly Monetary Policy review statement, 2017-18 announced on 2nd August, 2017.

- The Repo Rate under LAF was reduced by 25 basis points to 6.0 per cent from the earlier 6.25 per cent.
- The Reverse Repo Rate was also reduced to 5.75 per cent and the MSF Rate and Bank Rate was reduced to 6.25 per cent.
- CRR remained unchanged at 4.0 per cent of NDTL.
- Industrial performance slowed down in April - May 2017, mainly due to slackening of manufacturing activities. The output of consumer non-durable increased thereby reflecting robust rural demand.
- As compared to the industrial sector, the services sector performance was a mixed bag, with transportation sector registering a strong performance.
- Following the implementation of GST, the PMI contracted in July, but reflected optimism with new export orders and a rise in future output index.
- The retail inflation on year-to-year basis fell further in June to register its lowest reading in 2011-12 series.
- There was reduction in the fuel inflation for the second consecutive month as international prices for LPG fell. However, there was spike in the prices of coke, firewood and chips.
- The CPI inflation, excluding fuel and food, after a moderation for three consecutive months fell to 4 per cent in June.
- Surplus liquidity conditions persisted in the economy, aggravated by budgetary spending by the Government.
- Merchandise export growth rate weakened in May and June after a high in April. But, import growth rate remained in double digits.
- As import growth outdid export growth, it resulted in a trade deficit of US$ 40.1 billion.
- The foreign exchange reserves were US$ 392.9 billion as on July 28, 2017.

Fourth Bi-monthly Monetary Policy review statement, 2017-18 announced on 4th October, 2017.

- Repo Rate under LAF remained unchanged at 6.0 per cent.
- Reverse Repo Rate was kept unchanged at 5.75 per cent and MSF Rate and Bank Rate also remained unchanged at 6.25 per cent.
- The real GVA growth slowed considerably in Q1 of 2017-18.
- In July, the IIP bounced back marginallyfrom what it was in June, as mining, electricity generation and quarrying recovered. However, the manufacturing sector remained weak.

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- Retail inflation measured by year-on-year change in CPI rose in July and August to reach the highest in five months.
- CPI inflation excluding fuel and food also rose in Julyand August, reversing the trend of June.
- The fuel group inflation remained almost unchanged inAugust although there was a spike in LPG, kerosene, firewood and chips prices.
- Surplus liquidity situation persisted in Q2 owing to cash outflows related to advance taxes.
- Projected real GVA growth with risks evenly balanced for 2017-18 was revised down to 6.7 per cent from the August 2017 projection of 7.3 per cent.
- Merchandise exports growth moved in to the green zone in August 2017 after being in the red zone in the three preceding months. There was a growth in export of Engineering goods, petroleum products, garments, chemicals and drugs and pharmaceuticals.
- The import growth remained in double digits in August for the eighth consecutive month.
- Net FDI at US$ 10.6 billion in April-July 2017 was 24 per cent higher than during the same period of last year.
- The headline inflation was projected at 3.0 per cent in Q2 and 4.0-4.5 per cent in the second half of 2017-18.
- Foreign exchange Reserves stood at US$ 399.7 billion on September 29, 2017.

Fifth Bi-monthly Monetary Policy review statement, 2017-18 announced on 6th December, 2017.

- Repo Rate under LAF remained unchanged at 6.0 per cent.
- Reverse Repo Rate was kept unchanged at 5.75 per cent and MSF Rate and Bank Rate also remained unchanged at 6.25 per cent.
- Real GVA growth increased in Q2 in 2017-18 after slowing down in five successive quarters.
- The PMI for manufacturing sector rebounded back in November on the back of good output and new orders, after a fall in October.
- PMI for the services sector entered the contraction zone in November.
- Retail inflation measured on year-on-year change in CPI grew to the highest in seven months in October.
- CPI inflation excluding fuel and food, which was on the upswing from July to September, became steady in October.
- Inflation is projected in the range of 4.3-4.7 per cent in Q3 and Q4 of 2017-18, with risks evenly balanced.

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- There was a continued decline in the surplus liquidity in October and November.
- Q2 GVA growth was found to be lower than the October projection.
- Exports growth declined by 1.1 per cent in October after acceleration for fourteen consecutive months.
- The foreign exchange reserves were at US$ 401.94 billion on November 30, 2017.

Sixth Bi-monthly Monetary Policy review statement, 2017-18 announced on 7th February, 2018.

- Repo Rate under LAF was kept unchanged at 6.0 per cent.
- Reverse Repo Rate remained unchanged at 5.75 per cent and the MSF Rate and the Bank Rate was also kept unchanged at 6.25 per cent.
- The real GVA growth is estimated to slow down to 6.1 per cent in 2017-18 as against 7.1 per cent in 2016-17.
- IIP grew in November due to a boost in manufacturing output.
- The manufacturing PMI grew for the sixth consecutive month in January.
- The services PMI also expanded in December and January due to increased business activity.
- Retail inflation measured on year-to-year change in CPI increased for the sixth consecutive month in December.
- The liquidity position, though currently in the surplus mode, is steadily moving towards neutrality.
- Exports growth was positive in December and January.
- The trade deficit for December was US$ 14.9 billion, as imports growth exceeded exports growth.
- CPI inflation in H1 of 2018-19 was estimated at 5.1-5.6 per cent and H2 at 4.5-4.6 per cent.
- GVA growth for the year 2017-18 is projected at 6.6 per cent and for 2018-19 at 7.2 per cent.
- India's foreign exchange reserves stood at US$ 421.9 billion on February 2, 2018.

First Bi-monthly Monetary Policy review statement, 2018-19 announced on 5th April, 2018.

- Repo rate under LAF remained unchanged at 6.0 per cent.
- Reverse Repo rate was also kept unchanged at 5.75 per cent and the MSF Rate and Bank rate also remained unchanged at 6.25 per cent.
- GDP growth was revised at 6.6 per cent, marginally up from the first advanced estimate of 6.5 per cent.

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- The retail inflation measured on year-to-year change in CPI fell to 4.4 per cent in February from a high of 5.1 per cent in January primarily driven by decline in inflation of fuel and food.
- CPI inflation excluding food and fuel remained unchanged at 5.1 per cent
- Liquidityposition in the system oscillated between surplus and deficit during February-March 2018. A slowdown in Government spending and a large scale collection of tax overturned a surplus of ₹272 billion during February 1-11 to a deficit during February 12 - March 1.
- Merchandise export growth further slowed in January and February 2018. Import growth also moderated in February.
- The CPI inflation for 2018-19 was revised at 4.7-5.1 per cent for H1 and 4.4 per cent for H2 (including the HRA impact of Central Government employees) and 4.4-4.7 per cent for H1 and 4.4 per cent in H2: 2018-19.
- GDP growth is projected to rise to 7.4 per cent in 2018-19 from 6.6 per cent from 2017-18.
- India's foreign exchange reserves were at US$ 424.4 billion on March 30, 2018.

Second Bi-monthly Monetary Policy review statement, 2018-19 announced on 6th June, 2018.

- Repo Rate under LAF was increased by 25 basis points to 6.25 per cent.
- Reverse Repo Rate was increased by 25 basis points to 6.0 per cent and MSF Rate and Bank Rate was also increased by 25 basis points to 6.5 per cent.
- The GDP growth for 2016-17 had been revised to 6.7 per cent against the second advanced estimate of 6.6 per cent.
- Quarterly data indicated that the economy grew at 7.7 per cent in Q4:2017-18, highest in the last seven quarters.
- Agricultural growth rose sharply in Q4: 2017-18 driven by all-time high production of food grains and horticulture.
- Industrial growth was also strong due to the robust performance of manufacturing sector.
- Retail inflation, measured by the year-on-year change in the CPI, went up to 4.6 per cent in April.
- Fuel group inflation fell for the fifth consecutive month in April.
- Exports grew in April 2018 as compared to a marginal dip in the previous month. Imports growth, on the hand, fell in April 2018. Yet, trade deficit expanded in March and April when compared to the last year.
- Liquidity in April and May, 2018 remained in surplus.

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- An open market operation purchase auction was conducted by the Reserve Bank on May 17, 2018 to inject liquidity of ₹100 billion into the system.
- The foreign exchange reserves stood at US$ 412 billion on June 1, 2018.

Third Bi-monthly Monetary Policy review statement, 2018-19 announced on 1st August, 2018.

- Repo Rate under LAF increased by 25 basis points to 6.5 per cent.
- Reverse Repo Rate also increased by 25 basis points and stands at 6.25 per cent and MSF Rate and Bank Rate also increased by 25 basis points to 6.75 per cent.
- Industrial growth, measured by IIP grew in April-May 2018 against the same period last year.
- Retail inflation, measured by the year-on-year change rose to 5.0 per cent in June from 4.9 per cent in May 2018.
- The fuel group inflation also rose sharply, driven by the price increase in LPG and Kerosene.
- Projection for inflation is at 4.6 per cent in Q2, 4.8 per cent in H2 of 2018-19 and 5.0 per cent in Q1:2019-20, with risks evenly balanced.
- Liquidity in the system remained surplus in June-July 2018.
- To infuse liquidity, RBI exercised two open market operation (OMO) purchase auctions of ₹100 billion each on June 21 and July 19, 2018.
- Exports growth like earlier month continued to pick up in May and June 2018 and so did the imports growth.
- The GDP growth for Q1: 2019-20 had been projected at 7.5 per cent.
- India's foreign exchange reserves were at US$ 404.2 billion on July 27, 2018.

Fourth Bi-monthly Monetary Policy review statement, 2018-19 announced on 5th October, 2018.

- Repo Rate under LAF was kept unchanged at 6.5 per cent.
- The Reverse Repo rate remained unchanged at 6.25 per cent and the Marginal Standing Facility (MSF) rate and the Bank rate were also kept unchanged at 6.75 per cent.
- The real GDP growth went up to nine-quarter high of 8.2 per cent in Q1: 2018-19.
- The industrial growth, measured by IIP also increased in June-July 2018 on year-on-year basis.
- The manufacturing PMI remained in the expansion zone in August and September 2018.
- Retail inflation measured by y-o-y change in CPI contracted to 3.7 per cent in August from 4.9 per cent in June mainly due fall in food inflation.

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- Inflation of the fuel and light group continued its upward journey.
- August - September period saw both, surplus as well as deficit on liquidity front. It was surplus from August 1-19 and deficit from August 20-30. It again returned to surplus position during August 31-September 10 and plunged to deficit during September 11-29.
- Exports growth continued to breach double-digit in July and August 2018.
- Q1:2019-20 GDP growth was downgraded to 7.4 per cent from 7.5 per cent projected in August monetary policy statement.
- India's foreign exchange reserves were US$ 400.5 billion on September 28, 2018.

Fifth Bi-monthly Monetary Policy review statement, 2018-19 announced on 5th December, 2018.

- Repo Rate under LAF remained unchanged at 6.5 per cent.
- Reverse Repo rate was unchanged at 6.25 per cent and the MSF rate and the Bank rate were also kept unchanged at 6.75 per cent.
- GDP growth slowed down to 7.1 per cent y-o-y basis in Q2: 2018-19.
- IIP growth slowed down to 4.5 per cent in September 2018.
- GVA decelerated to 6.9 per cent in Q2 due to slow down in agricultural industrial activities.
- Retail inflation measured on y-o-y change in CPI declined to 3.3 per cent October from 3.7 per cent in September.
- CPI inflation, excluding food and fuel, went up to 6.1 per cent in October.
- Fuel and light group inflation also continued to accelerate in October.
- Merchandise exports growth picked up in October after stuttering in September.
- RBI injected ₹360 billion in October and ₹500 billion in November through open market purchase operations as a part of currency expansion during festive situation.
- India's foreign exchange reserves were at US$ 393.7 billion on November 30, 2018.

Sixth Bi-monthly Monetary Policy review statement, 2018-19 announced on 7th February, 2019.

- Repo Rate under LAF was reduced by 25 basis points from 6.5 per cent to 6.25 per cent.
- Reverse Repo Rate was also reduced by 25 basis points to 6.0 per cent and the MSF Rate and Bank Rate was also adjusted to 6.5 per cent from the earlier 6.75 per cent.

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- The first advanced estimates (FAE) of GDP growth for the year 2018-19 was pegged at 7.2 per cent.
- The first advanced estimates (FAE) placed GVA growth for the year 2018-19 at 7.0 per cent as compared to 6.9 per cent in 2017-18.
- Industrial activity, measured by IIP, slowed down in November 2018.
- Retail inflation declined to 2.2 per cent in December 2018, the lowest in the preceding eighteen months.
- Fuel and light group inflation also declined sharply from 8.5 per cent in October to 4.5 per cent in December 2018.CPI inflation, excluding food and fuel also fell down to 5.6 per cent in December from 6.3 per cent in October.
- Total durable liquidity injected through OMO purchases amounted to ₹ 2.36 trillion during 2018-19 so far.
- While the exports growth remained flat in November and December 2018, the imports continued to grow.
- Foreign exchange reserves were valued at US$ 400.2 billion on February 1, 2019.

First Bi-monthly Monetary Policy review statement, 2019-20 announced on 4th April, 2019.

- Repo Rate under LAF was reduced by 25 basis points to 6.0 per cent.
- The Reverse Repo Rate was also reduced to 5.75 per cent from earlier 6.0 per cent and MSF Rate and Bank rate were reduced to 6.5 per cent from earlier 6.75 per cent.
- Second revised estimate downgraded the GDP growth to 7.0 per cent from the first advance estimate of 7.2 per cent.
- Second revised estimate placed real GVA growth at 6.8 per cent in 2018-19 as compared to 6.9 per cent in 2017-18.
- Retail inflation measured in y-o-y changes in CPI rose to 2.6 per cent in February.
- Fuel and light group inflation plummeted from 4.5 per cent in December, 2018 to 1.2 per cent in February, 2019.
- CPI inflation excluding fuel and food fell to 5.2 per cent in January, but again rose to 5.4 per cent in February.
- Exports growth was weak in January and February. The trade deficit narrowed in February 2019 and fell to the lowest level in seventeen months.
- The RBI conducted four longer term (tenor ranging between 14-day and 56-day) variable rate repo auctions in March to cover up the seasonal tightening of liquidity at end-March in addition to the regular 14-dayvariable

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rate term repo auctions. Moreover, the Reserve Bank conducted long-term foreign exchange buy/sell swaps of US$ 5 billion for a tenor of 3 years on March 26, 2019. This, injected a durable liquidity of₹34,561 crore (₹346 billion) into the system.

- India's foreign exchange reserves figure was US$ 412.9 billion on March 31, 2019.

Second Bi-monthly Monetary Policy review statement, 2019-20 announced on 6th June, 2019.

- Repo Rate under the LAF was reduced by 25 basis points to 5.75 per cent.
- Reverse Repo Rate was adjusted to 5.5 per cent and MSF rate and Bank Rate was adjusted to 6.0 per cent from 6.5 per cent.
- GDP growth for 2018-19 was readjusted to 6.8 per cent, down by 0.2 per cent (20 basis points) from the second advanced estimates.
- Industrial growth decelerated in eight core industries in April.
- Retail inflation in April remained static at the March level of 2.9 per cent.
- Fuel and light group inflation rose to 2.6 per cent in April from the February level of 1.2 per cent.
- Food inflation in April went up to 1.4 per cent from 0.7 per cent in March.
- CPI inflation excluding fuel and food contracted to 4.5 per cent in April from 5.1 per cent in March, which was the biggest fall since April 2017.
- Liquidityposition returned to surplus in early June after beingin deficit during April and most of May.
- RBI announced an OMO purchase auction of₹15,000 crore (₹150 billion) to be conducted on June 13, 2019.
- Exports grew by 0.6 per cent in April 2019. The rate of growth of imports was more in April as compared to March, and this widened the gap of trade deficit.
- India's foreign exchange reserves stood at US$ 421.9 billion on May 31, 2019.

Third Bi-monthly Monetary Policy review statement, 2019-20 announced on 7th August, 2019.

- Repo Rate under LAF was reduced by 35 basis points to 5.40 per cent.
- Reverse Repo Rate was also adjusted to 5.15 per cent and the MSF Rate and the Bank rate was adjusted to 5.65 per cent.
- Industrial growth measure by IIP declined in May 2019.
- Retail inflation measured on y-o-y changes in CPI rose to 3.2 per cent in June as against 3.0 per cent in April-May.

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- Food inflation rose to 2.4 per cent in June as against 2.0 per cent in May and 1.4 per cent in April.
- Fuel and light group inflation declined in June.
- CPI inflation excluding food and fuel fell to 4.1 per cent in May from 4.6 per cent in April. The June inflation remained static as May.
- There was large surplus of liquidity in June-July 2019.
- Both exports and imports declined in June. Since, the fall in imports was more than fall in exports, trade deficit declined marginally.
- The CPI inflation was projected at 3.6 per cent in Q1 and 3.1 per cent in Q2: 2019-20 and 3.5-3.7 per cent in H2:2019-20, with risks evenly balanced.
- GDP growth for Q1:2020-21 is projected at 7.4 per cent.
- India's foreign exchange reserves increased by US$ 16.1 billion over end-March 2019 to US$ 429.0 billion on August 2, 2019.

Fourth Bi-monthly Monetary Policy review statement, 2019-20 announced on 4th October, 2019.

- Repo Rate under LAF was reduced by 25 basis points to 5.15 per cent.
- Reverse Repo Rate was adjusted to 4.90 per cent and the MSF Rate and Bank Rate was adjusted to 5.40 per cent.
- GDP growth plunged to 5.0 per cent in Q1: 2019-20.
- GVA growth also slowed down to 4.9 per cent in Q1: 2019-20.
- Industrial growth, measures by IIP on y-o-y basis declined in July 2019.
- Retail inflation, measured by y-o-y changes in CPI hovered between 3.1-3.2 per cent from June-August.
- While Food inflation picked up in August, there was deflation in fuel group.
- CPI inflation excluding food and fuel increased in July.
- The liquidity position was in surplus in August and September.
- Exports contracted in July and August. However, imports also declined, driven by fall in international crude oil prices.
- GDP growth for Q1:2020-21 is revised down to 7.2 per cent.
- India's foreign exchange reserves were US$ 434.6 billion on October 1, 2019.

Fifth Bi-monthly Monetary Policy review statement, 2019-20 announced on 5th December, 2019.

- Repo Rate under LAF was retained at 5.15 per cent.
- Reverse Repo Rate remained unchanged at 4.90 per cent and the MSF Rate and the Bank rate was retained at 5.40 per cent.

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- GDP growth weakened to 4.5 per cent on y-o-y basis in Q2: 2019-20.
- GVA growth further declined to 4.3 per cent in Q2: 2019-20.
- Retail inflation surged to 4.6 per cent in October, mainly due to rise in food prices.
- Food inflation rose to 6.9 per cent in October, which was a 39 month high.
- CPI inflation excluding fuel and food prices softened a bit and fell to 3.4 per cent in October from 4.2 per cent in September.
- Both industry and service sector contracted in October.
- The liquidity in system remained surplus in October and November 2019.
- Exports lowered in September-October and so did the imports. The rate of contraction in imports was more than that of exports, resulting in narrowing of the trade deficit.
- CPI inflation was revised upwards at 5.1-4.7 per cent in Q2:2019-20 and 4.0-3.8 in H1:2019-20, with risks evenly balanced.
- India's foreign exchange reserves stood at US$ 451.7 billion on December 3, 2019.

Sixth Bi-monthly Monetary Policy review statement, 2019-20 announced on 6th February, 2020.

- Repo Rate under LAF remained unchanged at 5.15 per cent.
- The Reverse Repo Rate was retained at 4.90 per cent and the MSF Rate and Bank Rate was unchanged at 5.40 per cent.
- The first advanced estimates released on 7th January, 2020 placed real GDP growth at 5.0 per cent for 2019-20. In another release on 31st January, 2020 the National Statistical Office (NSO) revised the real GDP growth of 2018-19 to 6.1 per cent as against an estimate of 6.8 per cent.
- The real GVA growth is estimated at 4.9 per cent in 2019-20 against 6.0 per cent in 2018-19.
- IIP, which is a measure of the industrial activity, improved in November 2019 after a downfall in the previous three months.
- The PMI services index improved to 55.5 in January 2020 from 52.7 in November 2019, due to a rise in new business and output.
- Retail inflation measured by y-o-y changes in CPI rose to 5.5 per cent in November and further to 7.4 per cent in December, 2019 which was the highest since July 2014.
- Food inflation saw an enormous jump from 6.9 per cent in October to 12.2 per cent in December, driven by sudden spike in onion prices due to unseasonal rainfall in October-November.
- Inflation in fuel group was 0.7 per cent in December.

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- CPI inflation excluding fuel and food prices rose from 3.4 per cent in October to 3.8 per cent in December 2019.
- The liquidity position in the system remained surplus in December 2019 and January 2020.
- Exports continued its downfall in November-December 2019, and same happened with the imports.
- The CPI inflation projection, with risks broadly balanced, is revised upwards to 6.5 per cent for Q4:2019-20; 5.4-5.0 per cent for H1:2020-21; and 3.2 per cent for Q3:2020-21.
- The GDP growth projection for Q1:2020-21 is 6.0 per cent and 5.5-6.0 per cent in H1 and 6.2 per cent in Q3.
- India's foreign exchange reserves stood at US$ 471.4 billion on February 4, 2020, reflecting an increase of US$ 58.5 billion over end-March 2019.

Recent Policy Changes Announced by the RBI

The world is currently reeling under economic impact of the COVID-19 pandemic. To deal with the ongoing and ensuing situation, the policymakers are acting proactively to lessen the negative impact of the pandemic. In the Indian context, Reserve Bank of India, as the apex financial institution and the principal policymaker, is also constantly keeping a watch of the changing environment and acting accordingly not only to manage the current scenario but also to create a path of recovery for the near future.

Normally, RBI announces monetary policy statements bi-monthly in a financial year. But, this year, owing to the economic doldrums created by COVID-19, it decided to advance its meeting scheduled on 31st March, 1st and 3rd April, 2020. The meeting was held on 24th, 26th and 27th March, 2020 during which it took a stock of the current and evolving macroeconomic and financial conditions. After careful and diligent assessment, the Monetary Policy Committee (MPC) came up with policy changes that, they felt, are necessary to revive growth and maintain financial stability and at the same time mitigate the impact of COVID-19. Let us look at the various decisions that the MPC took in the unprecedented Seventh Bi-monthly Monetary Policy meeting to ease the financial stress, build confidence and keep the financial system sound and working.

- The MPC decided to reduce the repo rate by 75 basis points to 4.4 per cent. More recently, the rate was later further reduced by 40 basis points to 4 per cent. There has been a cumulative reduction of 135 basis points during this period to ensure that inflation remains within the target.
- Consequently, the reverse repo rate was reduced by 90 basis points to stand at 4 per cent, as RBI wanted the banks to discourage to passively deposit funds with the RBI and instead, use it for lending to productive sectors of the economy.

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- RBI conducted two USD buy/sell swap auction of USD 5 billion each on March 26 and April 23, 2019, that injected a liquidity of amounting to ₹4,561 crore and ₹4,874 crore, respectively into the banking system.
- There were seven open market purchases that injected ₹ 92,500 crore into the system.
- Four simultaneous purchase and sale of government securities under Open Market Operations (also known as operation twist) were conducted during December and January (December 23 and 30, 2019 and January 6 and 23, 2020) to ensure better monetary policy transmission.
- Conducted five long term repo operations (LTROs) between February 17 and March 18, 2020 for one-year and three-year tenors amounting to ₹1,25,000 crore of durable liquidity at reasonable cost (fixed repo rate).
- Allowed exemption to the banks from maintaining Cash Reserve Ratio (CRR) with respect to the incremental credit disbursed by banks between January 31 - July 31, 2020 on retail loans for automobiles, residential housing and loans to micro, small and medium enterprises (MSMEs).
- Conduct two 6-month US Dollar sell/buy swap auction that provided dollar liquidity amounting to USD 2.71 billion.
- Standalone primary dealers (SPDs) allowed to participate in the variable rate repo auctions of ₹ 50,000 crore and ₹25,000 crore of 8 days and 3 days maturity on March 26 and March 31, respectively.
- Fine-tuning variable rate Repo auctions of 16-day maturity amounting to ₹7,745 crore on March 23-24, 2020.
- The amount under the Standing Liquidity Facility (SLF) available for standalone primary dealers was enhanced from ₹ 2,800 crore to ₹ 10,000 crore on March 24, 2020 and will be available till April 17, 2020.
- *CRR*: To help the banks cover up the disruptions caused by COVID-19, RBI decided to reduce the CRR of all the banks by 100 basis points to 3.0 per cent of net demand and time liabilities (NDTL). The reduction would release liquidity to the tune of ₹1,37,000 crore uniformly across the banking system in proportion to liabilities of constituents rather than in relation to holdings of excess SLR.
- To help the banks to cope up with the hardships the banks are facing with respect to social distancing and strain on reporting requirements, RBI reduced the requirement for minimum daily CRR balance maintenance to 80 per cent from 90 per cent.

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- *Marginal Standing Facility*: RBI decided to widen the monetary policy rate corridor from 50 bps to 65 bps. Under the new policy, the reverse repo rate would be less than the repo rate by 40 bps and the MSF rate would continue to be 25 bps above the repo rate.
- *Moratorium on Term Loans*: RBI permitted all commercial banks (including regional rural banks, small finance banks and local area banks), co-operative banks, all-India Financial Institutions, and NBFCs (including housing finance companies and micro-finance institutions) ("lending institutions") toallow a moratorium of three months on payment of instalments in respect of all term loans outstanding as on March 1, 2020.
- *Deferment of Interest on Working Capital Facilities:* Banks were allowed to recalculate drawing power by reducing margins and/or by reassessing the working capital cycle for the borrowers in respect of working capital facilities sanctioned in the form of cash credit/overdraft. These changes will not result in asset classification downgrading.
- The moratorium on term loans, the deferring of interest payments on working capital and the easing of working capital financing will not qualify as a default for the purposes of supervisory reporting and reporting to credit information companies (CICs) by the lending institutions and hence, will not have any adverse impact on the credit history of the beneficiaries.
- *Deferment of Implementation of Net Stable Funding Ratio (NSFR)*: RBI decided to defer the implementation of NSFR by six months to October 1, 2020. NSFR reduces funding risk by requiring banks to fund their activities with sufficiently stable sources of funding over a time horizon of a year in order to mitigate the risk of future funding stress.
- *Deferment of Last Tranche of Capital Conservation Buffer (CCB)*: CCB is designed to ensure that banks build up capital buffers during normal times (i.e., outside periods of stress) which can be drawn down as losses are incurred during a stressed period. Considering the potential stress on account of COVID-19, RBI deferred the implementation of the last tranche of 0.625 per cent of the CCB from March 31, 2020 to September 30, 2020.
- *Permitting Banks to Deal in Offshore Non-deliverable Rupee derivative Markets (Offshore Rupee NDF Markets)*: At present, Indian banks are not permitted to participate in this market. Banks in India which operate International Financial Services Centre (IFSC) Banking Units (IBUs) are now being allowed to participate in the NDF market with effect from June 1, 2020.

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14.3 ANSWERS TO CHECK YOUR PROGRESS QUESTIONS

1. The main functions of MPC are to decide the different interest rates, repo rates, reverse repo rates, CRR, Marginal Standing Facility (MSF) and Liquidity Adjustment Facility (LAF).
2. RBI permitted all commercial banks (including regional rural banks, small finance banks and local area banks), co-operative banks, all-India Financial Institutions, and NBFCs (including housing finance companies and micro-finance institutions) ("lending institutions") to allow a moratorium of three months on payment of instalments in respect of all term loans outstanding as on March 1, 2020.

14.4 SUMMARY

- Monetary policy is a macroeconomic policy laid down by the Reserve Bank of India that involves management of interest rates and supply of money aimed at controlling inflation, liquidity and consumption that impacts some aspects like economic growth, price stability, social justice, and promotion of business.
- The review and the resultant policy changes are being framed by the Monetary Policy Committee (MPC), a Central Government constituted RBI body under section 45ZB of RBI Act, 1934. The MPC has six members, of which three members are nominated by the Central Government with a condition that they cannot be government officials and the other three are the Governor of RBI, who is also the ex-officio Chairperson of the committee, Deputy Governor of the RBI who is in charge of the monetary policy and an Executive Director of the RBI.
- RBI took into consideration the improvement of the Micro-Finance Institutions (MFIs) and the recommendations of the Committee on Comprehensive Financial Services for Small Businesses and Low-Income Households in Monetary Policy 2015-16. Also, the public sector banks were told to ensure that the capital infused in them should flow to the productive sectors.

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- In the first Bi-monthly Monetary Policy review statement, 2016-17 announced on 5th April, 2016, the total exports valued in US dollar terms declined for the fifteenth consecutive month, although there was an increase in the volume of trade and the rate of decline in exports was confined to single digit.
- In third bi-monthly monetary policy review statement, 2016-17 announced on 9th August, 2016, after eighteen months in the negative, merchandise exports growth finally entered the positive territory in June.
- In Fifth Bi-monthly Monetary Policy review statement, 2016-17 announced on 7th December, 2016, the RBI allowed the oil bonds issued by the Government to be considered as eligible securities under LAF.
- In second bi-monthly monetary policy review statement, 2018-19 announced on 6th June, 2018, an open market operation purchase auction was conducted by the Reserve Bank on May 17, 2018 to inject liquidity of ₹00 billion into the system and the foreign exchange reserves stood at US$ 412 billion on June 1, 2018.
- Normally, RBI announces monetary policy statements bi-monthly in a financial year. But, this year, owing to the economic doldrums created by COVID-19, it decided to advance its meeting scheduled on 31st March, 1st and 3rd April, 2020. The meeting was held on 24th, 26th and 27th March, 2020 during which it took a stock of the current and evolving macroeconomic and financial conditions. After careful and diligent assessment, the Monetary Policy Committee (MPC) came up with policy changes that, they felt, are necessary to revive growth and maintain financial stability and at the same time mitigate the impact of COVID-19.
- In the unprecedented Seventh Bi-monthly Monetary Policymeeting to ease the financial stress, build confidence and keep the financial system sound and working, the MPC took various decisions, which are as follows:
  - o Four simultaneous purchase and sale of government securities under Open Market Operations (also known as operation twist) were conducted during December and January (December 23 and 30, 2019 and January 6 and 23, 2020) to ensure better monetary policy transmission.
  - o Allowed exemption to the banks from maintaining Cash Reserve Ratio (CRR) with respect to the incremental credit disbursed bybanks between January 31 - July 31, 2020 on retail loans for automobiles, residential housing and loans to micro, small and medium enterprises (MSMEs).
  - o To help the banks cover up the disruptions caused by COVID-19, RBI decided to reduce the CRR of all the banks by 100 basis points to 3.0 per cent of net demand and time liabilities (NDTL). The reduction would release liquidity to the tune of ‘ 1,37,000 crore uniformly across the

banking system in proportion to liabilities of constituents rather than in relation to holdings of excess SLR.

- To help the banks to cope up with the hardships the banks are facing with respect to social distancing and strain on reporting requirements, RBI reduced the requirement for minimum daily CRR balance maintenance to 80 per cent from 90 per cent.
- *Marginal Standing Facility*: RBI decided to widen the monetary policy rate corridor from 50 bps to 65 bps. Under the new policy, the reverse repo rate would be less than the repo rate by 40 bps and the MSF rate would continue to be 25 bps above the repo rate.
- *Moratorium on Term Loans*: RBI permitted all commercial banks (including regional rural banks, small finance banks and local area banks), co-operative banks, all-India Financial Institutions, and NBFCs (including housing finance companies and micro-finance institutions) ("lending institutions") to allow a moratorium of three months on payment of instalments in respect of all term loans outstanding as on March 1, 2020.
- *Deferment of Interest on Working Capital Facilities:* Banks were allowed to recalculate drawing power by reducing margins and/or by reassessing the working capital cycle for the borrowers in respect of working capital facilities sanctioned in the form of cash credit/overdraft. These changes will not result in asset classification downgrading.
- *Deferment of Implementation of Net Stable Funding Ratio (NSFR)*: RBI decided to defer the implementation of NSFR by six months to October 1, 2020. NSFR reduces funding risk by requiring banks to fund their activities with sufficiently stable sources of funding over a time horizon of a year in order to mitigate the risk of future funding stress.
- *Permitting Banks to Deal in Offshore Non-deliverable Rupee derivative Markets (Offshore Rupee NDF Markets)*: At present, Indian banks are not permitted to participate in this market. Banks in India which operate International Financial Services Centre (IFSC) Banking Units (IBUs) are now being allowed to participate in the NDF market with effect from June 1, 2020.

14.5 KEY WORDS

- **Marginal Standing Facility:** It is the rate at which the banks are able to borrow overnight funds from RBI against the approved government securities.
- **Moratorium:** It is a legal authorization to debtors to postpone payment.
- **Capital buffer:** It is a mandatorycapital that financial institutions are required to hold in addition to other minimum capital requirements.

- **Term loan:** It is a monetary loan that is repaid in regular payments over a set period of time.

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14.6 SELF ASSESSMENT QUESTIONS AND EXERCISES

Short-Answer Questions

1. Write a short note on the recent policy changes announced by the RBI.

Long-Answer Questions

1. Examine the various decisions that the MPC took in the unprecedented Seventh Bi-monthly Monetary Policy meeting to ease the financial stress during the COVID-19 pandemic.

14.7 FURTHER READINGS

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