
UNIT 1 MONETARY POLICY*

Structure

- 1.0 Objectives
- 1.1 Introduction
- 1.2 Sources of Money Supply
 - 1.2.1 Reserve Money
 - 1.2.2 Foreign Capital Flows
- 1.3 Monetary Policy Instruments
 - 1.3.1 Reserve Ratios
 - 1.3.2 Bank Rate
 - 1.3.3 Repo and Reverse Repo Rates
- 1.4 Objectives of Monetary Policy
 - 1.4.1 Price Stability
 - 1.4.2 Exchange Rate Stability
 - 1.4.3 Economic Growth
 - 1.4.4 Export Promotion, Employment Generation and Equity
- 1.5 Changes in the Monetary Policy Mechanism in India
 - 1.5.1 Liquidity Adjustment Facility (LAF)
 - 1.5.2 Market Stabilisation Scheme (MSS)
 - 1.5.3 Marginal Standing Facility (MSF)
- 1.6 Let Us Sum Up
- 1.7 Key Words
- 1.8 Some Useful Books and References
- 1.9 Answers/Hints to Check Your Progress Exercises

1.0 OBJECTIVES

After reading this unit, you will be able to:

- state the broad macroeconomic objectives of monetary policy;
- describe the concepts behind the sources of money supply;
- verify/show that aggregate bank deposits are directly proportional to 'reserve money' and inversely proportional to the sum of 'CRR and liquid cash' in the economy;
- explain the instruments of monetary policy;
- discuss the specific objectives of monetary policy;
- outline the process of 'monetary transmission mechanism' with its consequent impacts on GDP and employment levels; and

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- delineate the changes in the monetary policy mechanism of India after the 1990s.

1.1 INTRODUCTION

Monetary policy seeks to achieve multiple objectives like economic stability, growth and equity. Monetary policy encompasses the overall monetary management in an economy. The responsibility of monetary policy is performed by the central bank of a country which in the case of India is the Reserve Bank of India (RBI). The RBI regulates money supply in the economy (through the banking system) striving to achieve three basic macroeconomic objectives viz. (i) ensure the money supply required for the economic expansion, (ii) increase output and stabilise prices and (iii) maintain the rupee value from excessive appreciation or depreciation of the same (i.e. exchange rate stability). By performing these objective, it helps in raising the level of aggregate demand through the optimum levels of consumption and investment which, taken together, enhances economic growth.

This unit first recapitulates some important theoretical concepts on money supply and then proceeds to discuss the major policy instruments used to regulate the same. The mechanism of monetary policy has evolved itself over time with some major changes having taken place in it in the post-1991 years. The unit delineates some of these changes.

1.2 SOURCES OF MONEY SUPPLY

In a modern economy, money supply can be broadly considered in its two forms viz. cash money and credit money. Central banks usually classify ‘*aggregate money supply*’ on the basis of the ‘*liquidity*’ of different monetary assets. Liquidity means how quickly an asset can be converted into cash money. Thus, currency in hand is the most liquid by which we can readily exchange goods and services. From this standpoint, based on their descending order of liquidity, supply of money can be categorised into the following four categories viz. M_1 , M_2 , M_3 and M_4 (i.e. M_1 is the most liquid form of money while M_4 is relatively the least liquid).

$$M_1 = C + DD + OD \quad (1.1)$$

where C refers to currency (including coins and paper notes) held by public, DD refers to demand deposits with commercial banks and OD refers to ‘other deposits’ (e.g. deposits with RBI by financial institutions like IDBI, foreign central banks or international financial institutions like IMF, WB, etc.). It is the most liquid and is as per a narrow concept and hence also called as ‘narrow money’ (in contrast to M_4 which is based on a broader concept and hence called ‘broad money’). M_1 is also considered as the ‘monetary base’ of an economy. In contrast to M_1 , M_2 is defined in a relatively broader concept as:

$$M_2 = M_1 + \text{savings deposits in post offices} \quad (1.2)$$

M_3 and M_4 are based on still broader concepts and are respectively defined as:

$$M_3 = M_1 + \text{'net time (fixed) deposits' with commercial banks} \quad (1.3)$$

$$M_4 = M_3 + \text{savings with post office (excluding 'national savings certificates')} \quad (1.4)$$

1.2.1 Reserve Money

The second most important source of money supply in an economy is the money generated as '*credit money*' by the commercial banks. It is the loans extended by the banks to the public which depends on certain factors like: (i) 'cash reserve ratio' (CRR: discussed in sub-section 1.3.1) and (ii) cash and demand deposits made from time to time by the general public with the banks. The 'scheduled commercial banks' (SCBs) generate 'credit money' in proportion to 'a multiple of the cash deposits' (called '*deposit multiplier*': DM) held by them. CRR and DM are inversely related i.e. higher the CRR, lower will be the value of the deposit multiplier and therefore lesser will be the capacity of the banking system to create credit money and vice versa.

M_1 defined above is also called as '*high powered money*' or 'reserve money'. As said above, it is also referred to as the 'monetary base' of an economy. The RBI can increase the quantity of the high powered money by purchasing securities or government debt instruments. We can show that the supply of 'high powered money' (H) influences the capacity of the banking system in credit creation. For this, let us suppose that the size of the bank deposits is D 'b' is the fraction of the total bank deposits which the public wants to hold in cash and the cash reserve ratio is 'x'. Then, reserves with the RBI (R) = x * D and currency with the banks and the public (C) = b * D. Now, the high powered money, H, is obtained as:

$$H = bD + xD = (b + x) * D \quad (1.5)$$

$$\text{or } D = \frac{H}{b+x} \quad (1.6)$$

The size of the total deposits in an economy is thus a multiple of the high powered money which depends upon three factors: (i) quantity of high powered money (H), (ii) cash reserve ratio (x) and (iii) fraction of the total bank deposits (D) which the public wants to hold in cash. In other words, the high powered money 'H' is a fraction of the total deposits (D) in which the multiplying factor is 'b + x' i.e. $H = D * (b + x)$.

1.2.2 Foreign Capital Flows

Apart from the above mentioned channels (M_1 to M_4) of money supply, '*foreign capital flows*' (both inflows and outflows) also affect money supply. The dynamics behind this phenomenon is better understood with the help of the balance sheet of the Reserve Bank of India. In simple words, when

foreign capital flows into India, the assets side of the balance sheet of the RBI increases. This results in the '*appreciation*' of rupee. To keep the value of the rupee stabilised, RBI issues more domestic currency. This causes the liability side of the balance sheet to increase. In other words, to prevent excessive or undue appreciation of rupee, RBI converts the foreign capital inflows in rupee terms and inducts equivalent domestic currency of money supply causing the money supply in the economy to increase. Likewise, with an outflow of the foreign capital, the liabilities side of the RBI's balance sheet decreases causing a *depreciation* of rupee. Once again, to stabilise the money supply, RBI exchanges rupee for dollars (causing the money supply in the economy to decrease) to balance the assets with liabilities. The mechanism of foreign capital inflows, thus, virtually forces RBI to infuse domestic currency into the market. The foreign investors need rupees to invest in India. The foreign currency brought in by those investors (and deposited with the RBI) gets them equivalent amount of Indian rupees. On the other hand, when a foreign investor liquidates his holdings in India, he first gets payment in rupees. These are then deposited with RBI and exchanged for foreign currency which is allowed to be repatriated. This function of the central bank is called as the role of 'exchange rate stability' on which you will study more in Section 1.4 of this unit.

1.3 MONETARY POLICY INSTRUMENTS

The RBI regulates the entire banking system and the money market in India. For this, it is vested with the authority to exercise certain quantitative and qualitative measures in order to regulate the money supply. Quantitative measures are employed to modulate the credit creating capacity of the banks while the qualitative measures are used to direct the credit flow towards the desired sectors of the economy (called priority lending policy). The Sukhmoy Chakrawarti Committee (1980) added a new dimension to the role of the RBI by stressing that besides its hitherto assumed roles (i.e. striving for achieving price stability, economic growth, equity and social justice), the RBI should also strive for the creation of new monetary and financial institutions for an orderly development of the Indian money market. This thus became the fifth objective of the RBI's monetary macroeconomic role. The roles of RBI has proliferated since the 1990s on which you will study in Section 1.5 of this unit.

RBI controls money supply in the economy through various policy tools. Among other things, these tools principally target the credit creation capacity of the banks. For this, it prepares a monetary policy framework and reviews it periodically. Regulation of money supply is a twofold process viz. (i) regulating cash in circulation and (ii) regulating credit. For the purpose of the former, the RBI issues new currency to meet the growing demand for money keeping in view the growth rate and the inflation rate (both expressed in percentages) in the economy. For the latter, RBI controls supply of credit money through various policy measures like (i) bank rate, (ii) cash reserve

ratio (CRR), (iii) statutory liquidity ratio (SLR), (iv) open market operations, etc. Some of the other measures adopted by the RBI are: credit rationing, selective credit control, liquidity adjustment facility and moral suasion. Through a combination of these measures, the RBI regulates the overall money supply in the economy with only the minimum necessary direct intervention to alter the volume of currency in circulation.

1.3.1 Reserve Ratios

The 'cash reserve ratio' (CRR) is a major and important tool employed by the RBI to regulate money supply. Under the policy of cash reserve requirement, banks are required to keep a certain fraction of their aggregate deposits in the form of liquid cash with the RBI. CRR requirements are mandatory for all banks like scheduled commercial banks, non scheduled banks, cooperative banks and the regional rural banks. CRR directly affects the lending capacity of the banks in a very effective manner. RBI imposes penal interest rate on banks which fail to comply with the CRR norms. As noted in equation (1.3) above, the value of the deposit multiplier (D) is the inverse of the CRR (x). Thus, if CRR is 20 percent the value of the deposit multiplier is 5.

Like the CRR, another important tool employed by the RBI is the 'statutory liquidity ratio' (SLR). SLR is the fraction of the cash in the hands of the banks after meeting the CRR obligations. Thus, while CRR is the primary reserve requirement, SLR is the secondary reserve requirement. SLR requirement can be met by the banks either in the form of cash, gold, government securities or any other approved security. SLR thus not only helps in regulating the banking credit creation but also ensures solvency of the banking system. While there is no provision of imposing monetary penalty for the violation of SLR norms, defaulting banks' access to RBI's refinance facility would be restricted.

1.3.2 Bank Rate

Bank rate is that rate at which RBI re-encashes (buy back) the bills of exchange and promissory notes. It is also the rate at which loans and advances are extended to the banks [i.e. SCBs, cooperative banks, state finance corporations (SFCs) and others]. It is thus basically an interest rate at which RBI gives loans and advances to the banks and financial institutions. The interest rate charged is calibrated to control the money supply even though it is basically meant to cover the cost of borrowed funds. When RBI raises the bank rate, banks and financial institutions also increase their lending rates. As a consequence, demand for loans and advances decrease. Thus, money supply in the economy falls through reduced credit money.

1.3.3 Repo and Reverse Repo Rates

Repo rate is that rate at which RBI lends money to the commercial banks for any shortfall in their funds. It is thus a short term lending rate of the RBI.

Repo rate is used as a tool to control inflation in the short run. RBI frequently adjusts the repo rate to control inflation. By increasing the repo rate, RBI increases the cost of lending of the banks. Reverse repo rate (RRR) is the opposite of repo rate. RRR is the rate at which RBI borrows money from the commercial banks to wipe out excess funds in their hands. It is a short term borrowing rate of the RBI. RBI frequently adjusts the RRR to control money supply. By increasing the reverse repo rate, RBI incentivises the commercial banks to part with their excess funds to it. This reduces the money available with the banks thereby restricting its credit potential and consequently reducing the supply of money in the economy.

Besides the above instruments, RBI can control money supply through ‘open market operations’. Under this, RBI carries out ‘sale and purchase’ of government securities. When banks purchase securities from RBI, their cash reserve position decreases. This reduces their ability to create credit. On the other hand, when banks sell securities their cash reserve position increases. Thereby, their capacity to create credit is enhanced. Until recently, open market operations as a policy tool was not used by RBI but was mainly used for management of government debt. Since early 1990s, open market operations are being used more (through repos) for maintaining exchange rate stability. There are also other policy measures such as rationing of credit, margin requirement on loans and moral suasion. For instance, RBI being the lender to other banks, can adopt the policy of ‘credit rationing’ to reduce money supply. This means it can deny loans to specified category of banks or can put a ceiling (quota) on the loans extendable to the banks. It can also impose an upper limit on the loans to industry by the banks or set a higher margin requirement on the collateralised lending by the banks or can direct banks to keep a higher prescribed margin on the collateral security for granting loans to borrowers. Lastly, RBI can resort to ‘moral suasion’ to sensitise banks to refrain from excessive lending.

Check Your Progress 1 [answer within the space given in about 50-100 words]

- 1) State the major macroeconomic objectives of monetary policy.

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- 2) What is meant by ‘monetary base’ of an economy?

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3) What is 'deposit multiplier' (DM). What is its relationship with CRR?

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4) Does 'high powered money' influence credit creation? How?

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5) When does the RBI resort to applying the 'quantitative measures'? How does this differ from the 'qualitative measures' adopted by the RBI?

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6) When does the RBI resort to applying the 'quantitative measures'? How does this differ from the 'qualitative measures' adopted by the RBI?

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7) For regulating the cash in circulation in the economy, which two factors are kept in view by the RBI?

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8) State the two important 'reserve ratios'. In what respect are they helpful?

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9) Distinguish between repo and reverse repo rates. How are they useful?

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10) Mention the various other measures which are employed by the RBI to control the money supply in the economy.

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1.4 OBJECTIVES OF MONETARY POLICY

The process through which monetary policy affects the different sectors in the economy is known as 'monetary transmission mechanism'. It works on the fundamental premise that money is not neutral in its effect on investment demand and GDP. It implies that, under flexible supply conditions (below full employment), expansion in the supply of money always augments economic growth. Therefore, effects of changes in the monetary sector gets transmitted to the 'real sector' through rate of interest. In essence, 'monetary sector' and the 'real sector' are integrated through the 'interest rate'.

Monetary transmission mechanism works to serve both the expansionary as well as the contractionary objectives of monetary policy. For the former, when demand for the currency increases in the economy the commercial banks approach the RBI with securities. RBI issues new currency in exchange for their securities. This stimulates the supply for loanable funds causing the interest rate to fall. A fall in the nominal interest rate, in turn, leads to an increase in private investment and consumption expenditure both by firms and consumers. This results in a rise of aggregate demand in the economy. Thus, under the assumption of flexible supply conditions and less

than full employment, any increase in aggregate demand results in an increase in the GDP. On the other hand, during a contractionary phase, a reduction in the money supply leads to a rise in the nominal interest rate. This in turn decreases the borrowings for investment (and consumption) inducing the people to save more. This causes a fall in the aggregate demand in the economy leading to a lower GDP and reduced employment level (recall the IS-LM analysis).

Thus, the RBI can alter the money supply in the economy by calibrating the 'interest rate'. Changes in the interest rate affect the investment and consumption behaviour of both the firms and the consumers causing either a rise or a fall in the aggregate demand (for goods and services) with the consequent impact on the GDP and employment levels.

1.4.1 Price Stability

One of the important objectives of monetary policy is to promote economic activities while maintaining stability in prices. In an integrated global economy, booms and recession originating in one part of the world easily spread to other parts. For instance, financial meltdown in the US in 2008 quickly spread globally. Hence, one of the added tasks of the monetary policy in the new world order is not only to provide an adequate cushion but also be more adaptive and responsive to external shocks. This requires that the monetary policy mechanism should be capable of coping with the shocks of both the low and high business cycle periods viz. recession and hyper inflation. Recession is a business cycle contraction which slows down economic activities and adversely impact real GDP, employment, industrial production and wholesale and retail sales. It has been observed in the past that an imported recession has minimum impact on Indian economy due to the presence of a large informal sector, large public sector and a domestic demand cushion. An easy monetary policy, supplemented by the expansionary fiscal policy, helps to reduce nominal interest rate, encourage consumption demand and investment demand and discourage savings. This would help in raising the aggregate demand and stabilise prices bringing the economy out of the recession.

Boom is a phase of business cycle expansion in which aggregate demand is persistently pushed up by the market expectations. Effects of boom on the real sector depend upon the level of employment and the responsiveness of the aggregate supply to the demand. A boom in an economy, already at full employment, causes inflation. It impacts more on prices than on GDP and employment due to the weak response of aggregate supply to aggregate demand. A tight monetary policy, supplemented by contractionary fiscal policy, is required to combat the boom in an economy. Tight monetary policy increases nominal interest rate which reduces consumer demand, promotes savings and discourages investment demand. The overall effect works to reduce aggregate demand, stabilise prices and eliminate boom.

1.4.2 Exchange Rate Stability

An important function of the monetary policy is to protect exchange rate from shocks and in the process prevent volatility (i.e. appreciation or depreciation) in domestic currency from speculative actions. This is particularly important in the era of managed floating exchange rate under which a trade-off exists between exchange rate stability and macroeconomic objectives of unemployment and inflation. Hence a balance needs to be maintained. Monetary policy cannot be an effective tool under fixed exchange rate and imperfect capital market conditions restricting the liberalised mobility of capital. It can be better applied under the floating exchange rate system in which response to changes in interest rate would adequately influence the economy for the desired reorientation. However, monetary policy can still be used to minimise exchange rate volatility by balancing the money supply from capital inflows by selling bonds of equal value in the money market. Such a balancing measure (called a sterilisation policy) is aimed at mopping up the additional supply of money caused by foreign capital inflows. Monetary policies are thus useful in reducing the risk of capital flight sparked by the speculations of depreciation of currency.

1.4.3 Economic Growth

By adopting an easy monetary policy, aggregate demand can be increased by reducing nominal interest rate in the economy. This is because, as interest rate falls, both private investment and consumption expenditure increase leading to an increase in the aggregate demand in the economy. Under the assumptions of less than full employment and with induced capital formation, the economy grows faster. In addition, monetary policy can also create new financial institutions which can tap savings in the economy leveraging them in productive sectors to achieve growth.

1.4.4 Export Promotion, Employment Generation and Equity

By devaluing the rupee exchange rate, monetary policy can be used to promote exports and discourage imports. As a consequence, imports become expensive and exports become cheaper helping reduce the current account deficit. By extending cheaper loans to exporters, monetary policy can help boost exports. An easy monetary policy, by raising aggregate demand, can increase employment level through multiplier effect. Further, by adopting the policy of priority lending (which is helping the weaker sections in the society through cheaper and easy loans), the poor and the marginalised can be helped in setting up self employment ventures. Such measures can help reduce inequality in the economy.

1.5 CHANGES IN THE MONETARY POLICY MECHANISM IN INDIA

Monetary policy underwent significant transformations since the mid-1990s and more aggressively during the years 2000-2005. Recent reforms of post-2000s became essential to address the new realities and challenges emerging from global economic integration and greater market orientation. With this, monetary policy stance witnessed a clear shift from direct intervention to indirect intervention. Greater reliance had to be placed on approaches like: (i) open market operations (OMOs), (ii) liquidity adjustment facility (LAF), (iii) market stabilisation scheme (MSS) and (iv) establishment of 'marginal standing facility' (MSF). OMOs was earlier outlined in Section 1.3. In this section, we will briefly note the importance and functioning of the other three.

1.5.1 Liquidity Adjustment Facility (LAF)

Liquidity Adjustment Facility scheme was launched by RBI in the year 2000 and was subsequently revised in the year 2004. LAF is a short term liquidity management technique. Under this, RBI sells and purchases government securities at repo rate and reverse repo rate respectively to absorb or inject money into the economy on short term basis. RBI periodically revises these rates in its monetary policy reviews. It is thus a day to day or emergent lending and borrowing facility for banks to meet their short term liquidity needs. LAF operations, combined with open market operations and bank rate changes, have since become the major technique of monetary policy in India.

1.5.2 Market Stabilisation Scheme (MSS)

RBI launched the 'market stabilisation scheme' in 2004 to withdraw excess liquidity from the money market by selling government bonds. MSS was meant to mop up excess liquidity arising from the RBI's purchase of foreign currency in order to protect the exchange rate in times of excess inflow of foreign capital into the country. Since such inflows can appreciate rupee causing current account deficit to widen, the scheme was meant to act as the market stabiliser. Under this scheme, RBI purchases dollars (or any other currency) so as to neutralise the effect of excess liquidity created in the economy. The objective is achieved by the selling of bonds to absorb the excess liquidity. As mentioned above, this is also referred to as 'sterilisation'.

1.5.3 Marginal Standing Facility (MSF)

Marginal Standing Facility is a new window created by RBI in 2011 [under the Liquidity Adjustment Facility (LAF)] for overnight lending of funds to banks. Banks can borrow overnight funds at MSF rate (from the RBI) against approved government securities. This is thus a kind of emergency lending for banks, made at a rate higher than the repo rate, to counter overnight volatility in the interest rates. Before MSF, inter-bank borrowing was the only way to

meet overnight funds requirement. The proliferation of economic activities had over the years caused sharp fluctuations in short term (over night) inter-bank lending rates. Thus, the overall idea behind MSF is to reduce overnight volatility in inter-bank lending rates.

In more recent years (i.e. since 2015), a new Monetary Policy Framework Agreement (MPFA) has shaped the stance of monetary policy in India. As per this, the RBI will focus on ensuring that inflation remains moderate to achieve a CPI (consumer price index) linked inflation target of 6 percent by January 2016 and 4 percent by the end of 2017-18. The target beyond 2017-18 is defined in terms of a tolerance band of +/- 2 percent around 4 percent. Inflation, based on all India CPI was 5.9 percent during 2014-15 and (except for a short stint of slightly above 6 percent in the year 2016) has remained below 6 percent since then. It was at a record low level 1.54 percent in June 2017. Thus, MPFA, since its inception, has succeeded in lowering the CPI inflation rate effectively.

Check Your Progress 2 [answer within the space given in about 50-100 words]

1) What is the basic premise on which ‘monetary transmission mechanism’ is based?

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2) What are the characteristics of a period of recession? How does monetary policy help cope with this?

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3) Does an economy like India face serious impact from global recession? Advance reasons for your stand.

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4) How is a situation of boom different from recession? What monetary policy stance is helpful to deal with a situation of economic boom?

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5) By meeting out which broader objective of monetary policy, are the situations of both recession and boom managed from the policy front?

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6) What is meant by a 'sterilisation measure' in the context of monetary policy?

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7) In what manner the objective of economic growth achieved by monetary policy?

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8) How can monetary policy be effective in reducing inequality in an economy?

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9) What is the primary objective served by ‘liquidity adjustment facility’? Which are the other recent measures introduced into the monetary policy approaches in India?

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10) What is a more recent (post-2015) change in the monetary policy of India? What particular objective has this served?

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1.6 LET US SUM UP

Monetary policy aims at achieving the broad macroeconomic objectives of ensuring adequate money supply to aid an optimum level of economic growth and maintain exchange rate stability. Various measures like reserve ratios, bank rate and repo and reverse repo rates are traditionally employed to meet these objectives. However, in the post-liberalisation phase to meet with the volatility of FDI inflow/outflow, among others, new measures like liquid adjustment facility, market stabilisation scheme and marginal standing facility were introduced. More recently, a mechanism called MPFA (monetary policy framework agreement) was introduced by which the RBI has been successful in keeping the consumer price index linked inflation rate well within the targeted range of 4-6 percent.

1.7 KEY WORDS

- Inflation** : It is a sustained rise in the general price level in an economy over a period of time. Inflation debases the value of money i.e. it reduces the purchasing power of money. It means that same amount of money can now buy a lesser quantity of goods and services in the market than at an earlier point of time.
- Price Stability** : Refers to the absence of sustained fluctuations in the general price level in an economy. In other words, it is the absence of boom and recession.

- Real Sector and Monetary Sector** : Real sector is that part of an economy where we study variables measured in physical quantities (e.g. agricultural/industrial production, GDP, capital stock, etc.). Monetary sector of an economy deals with variables expressed in terms of money (e.g. price level, exchange rate, interest rate, etc.).
- Promissory Notes** : A promissory note is a financial debt instrument in which one party promises in writing to pay the amount due to the other party at a predetermined future date or on demand under specified terms and conditions.
- Bills of Exchange** : Are negotiable financial instruments like a bond or a promissory note. It is an unconditional written order, addressed and signed by one party assuring another party to whom it is addressed, to pay on demand immediately or at a fixed or at a determinable future time, a certain sum of money either to the specified person or to the bearer.
- Government Securities** : These are government debt instruments like bond and treasury bills. These are also called 'guilt edged securities' because they are risk free. They are issued by the RBI on behalf of the government to finance fiscal deficit. They are money market instruments to raise loans for the central government.
- Government Bond** : A bond is a financial instrument with a face value and a specified rate of return on it. These are issued only by the central government to borrow money from the financial market. Government bonds are also called sovereign bonds. They are always denominated in domestic currency like 'rupee bond'. The government does not ordinarily default on the bond but it can repudiate to pay back. When a government is likely to default on bond the situation is called as 'sovereign debt crisis'.
- IS-LM analysis** : Developed by Hicks and Hansen, it is the synthesis of real sector and monetary sector in an economy. IS or investment-saving schedule is the locus of the different combinations of real interest rate and GDP at which goods market is in equilibrium. On the other hand, LM (liquidity preference and money supply) is the locus of various combinations of GDP and real interest rate at which money market is in equilibrium. So, IS-LM model combines goods market with money market simultaneously showing general equilibrium in the goods market and money market.

Exchange Rate	: Exchange rate is the price of one currency expressed in terms of other currency. It is a relative price of currencies.
Floating Exchange Rate	: It is a system which allows the exchange rate to be determined completely by the forces of demand and supply in the market with central banks not intervening directly.
Managed Floating Exchange Rate	: It is a combination of fixed and floating exchange rate systems. Under this, central banks allow the currency exchange rate to fluctuate within a predetermined band. Central banks frequently intervenes in the foreign exchange markets to stabilise exchange rate.
Currency Appreciation and Currency Depreciation	: Currency appreciation and currency depreciation are foreign exchange market phenomena under the floating exchange rate system. When the value of one currency in terms of the other currency increases in the foreign exchange market it is called currency appreciation. When the value of one currency in terms of the other currency decreases in the foreign exchange market it is called currency depreciation.

1.8 SOME USEFUL BOOKS AND REFERENCES

- 1) Bhole L. M. & J. Mahakud (2009). *Financial Institutions and Markets*, 5th Edition, Tata McGraw Hill Publishing Company Ltd.
- 2) Krugman P. R., M. Obstfeld & M. J. Melitz (2018), *International Economics: Theory and Policy*, 10th Edition, Pearson India.

1.9 ANSWERS/HINTS TO CHECK YOUR PROGRESS EXERCISES

Check Your Progress 1

- 1) (i) ensure the money supply required for the economic expansion (i.e. increase output), (ii) keep the prices stabilised (i.e. control inflation) and (iii) maintain exchange rate stability (i.e. ward off excessive appreciation or depreciation of domestic currency).
- 2) It is the most liquid form of money consisting of three components viz. currency held by the public, demand deposits or current accounts held by the banks and other deposits kept with the RBI.
- 3) DM is a multiple of cash deposits which determines the extent of credit money that can be created by the SCBs. DM and CRR are inversely related i.e. higher the CRR, lower is the level of credit money.

- 4) Yes. If D denotes total deposits, and b and x are the 'fraction of total deposits which the public wants to hold in cash and the CRR respectively, then the 'high powered money' is related as: $H = D * (b + x)$ [($b + x$) is the DM].
- 5) Quantitative measures are employed to regulate the credit creation by the banks. Qualitative measures are employed to direct the credit flows towards the desired sectors and segments of the economy/population.
- 6) The four conventional roles are: price stability, economic growth, equity and social justice. The additional role added is one of creating new monetary and financial institutions for an orderly development of money market.
- 7) Economic growth and inflation, both expressed as percentages.
- 8) CRR and SLR. The former is an obligation of keeping a certain amount of liquid cash with the RBI (which is determined as a 'fraction of the aggregate deposits' with the banks). SLR is 'total liquid resources held by the banks minus CRR'. It is the secondary reserve requirement (the primary one being the CRR). While CRR influences the effective lending capacity of the banks, SLR besides regulating the banking credit also ensures the 'solvency of the banking system'.
- 9) Repo rate is the rate of interest at which RBI extends loans to commercial banks for meeting their short term fund needs. It is useful as a tool to control inflation in the short term. Reverse repo rate (RRR) is the rate at which the commercial banks can park their excess cash with RBI. RRR is useful in controlling the money supply (e.g. by increasing RRR, RBI is incentivising the banks to part with their excess funds).
- 10) Open market operations, rationing of credits, margin requirement on loans and moral suasion.

Check Your Progress 2

- 1) That money is not neutral and as long as the economy is working in a state of 'less than full employment', infusion of money into the economy always results in economic growth or growth in GDP.
- 2) It refers to a business cycle contraction characterised by an overall slow down in economic activities adversely impacting all macroeconomic indicators like GDP, income, employment, production and prices. A liberal monetary policy can help lower the interest rate thereby giving scope for stimulating consumption and investment demand.
- 3) Economies like India are characterised by the presence of a large informal sector and huge domestic demand. These characteristics provide a cushion to cope with non-domestic recession.

- 4) A boom in an economy causes high inflation in an economy already at full employment. Adverse impact of boom is experienced due to inadequate response of supply. To take care of the adverse consequences of boom, what is needed is to improve the supply side response. A tighter monetary policy, coupled with a contractionary fiscal policy, can help overcome the adverse consequences of a period of boom.
- 5) The objective of price stability is sought to be achieved by the calibrated policy stance of both monetary and fiscal dimension. This helps restore aggregate demand to the required optimum thereby achieving stability in prices.
- 6) It is a balancing measure aimed at mopping up the excess foreign capital inflow. The balance is achieved by the selling of bonds, minimising speculative devaluation of currency.
- 7) By increasing aggregate demand as a consequence of lowered interest rates. Lower rates of interest reduce cost of investment and promote creation of additional productive capacities and jobs. Besides this, monetary policy can also help create new financial institutions to tap savings and aid productive growth in the economy.
- 8) Through reduced interest rates spiralling into promotion of exports and employment creation on the one hand and by advancing priority lending to help establish self employment ventures to assist the poor and marginalised sections on the other.
- 9) Meet the short term or over night liquidity needs by extending lending and borrowing facility to the banks. Open market operations, market stabilisation scheme and marginal standing facility are the other recently introduced measures for indirect intervention by the RBI in the financial market operations.
- 10) Introduction of new 'monetary policy framework agreement' (MPFA) in 2015. The agreement aims at bringing the CPI linked inflation to 4 percent by 2017-18 and thereafter maintain it in a bank of +/- 2 percent around 4 percent. The policy has served its purpose in keeping the CPI interest rate low i.e. within the 4-6 percent range over the years 2015-18.