

Chapter 8 Unit 2 Money Supply

Meaning

"Money Supply" denotes the Total Quantity of Money available to the People in an Economy. The Quantity of Money at any point of time is a measurable concept.

Supply of Money - Whether Stock or Flow?

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|------------------------|---|
| Supply of Money | <ul style="list-style-type: none"> It refers to the total amount of Money at any particular point of time. It is a Stock Concept Change in the Stock of Money (i.e. increase or decrease per month or year), is a Flow Variable. |
| Stock of Money | <ul style="list-style-type: none"> Generally, Stock of Money refers to the Stock of Money available to the 'Public' as means of payments and store of value. Such Stock of Money is always less than the Total Stock of Money that really exists in an Economy. |

Public

| The term 'Public' includes all Economic Units - | The term 'Public' excludes Producers of Money |
|---|--|
| <ul style="list-style-type: none"> (a) Households, Firms and Institutions, (b) Quasi Government Institutions, (c) Non-Banking Financial Institutions, (d) Non-Departmental Public-Sector Undertakings, (e) Foreign Central Banks and Foreign Governments, and (f) International Monetary Fund which holds a part of Indian Money in India in the form of Deposits with RBI. | <ul style="list-style-type: none"> (a) Government, which includes - <ul style="list-style-type: none"> Central Government and All State Governments and Local Bodies. (b) Banking System, which means - <ul style="list-style-type: none"> Reserve Bank of India, and All Banks that accept Demand Deposits <p>[Note]</p> |

Note: Demand Deposits means those Deposits from which Money can be withdrawn by Cheque, mainly CASA Deposits. (CASA = Current Account & Savings Account). In short, in the Standard Measures of Money, Inter-Bank Deposits and Money held by the Government and the Banking System are not included.

Significance of measuring Money Supply

Empirical Analysis of Money Supply is important for the following reasons –

- Macro-Economic Impact:** Money Supply is considered as a very important Macro-Economic Variable responsible for changes in many other significant Macro-Economic Variables in an Economy.
- Economic Stability:** Economic Stability requires that the Supply of Money at any time should be maintained at an Optimum Level. This can be achieved by accurately estimating the Stock of

Money Supply on a regular basis, and appropriately regulating it in accordance with the Monetary Requirements of the Country.

3. **Analysis:** Money Supply analysis facilitates analysis of Monetary Developments to provide a better understanding of the causes of Money Growth.
4. **Monetary Policy:** Analysis of Money Supply is essential from the Monetary Policy viewpoint, as it provides a Framework to -
 - (a) evaluate whether the Stock of Money is consistent with the Standards for Price Stability, and
 - (b) understand the nature of deviations from this Standard.
5. **Money Supply and Monetary Policy:** The Central Banks all over the World adopt Monetary Policy to stabilize Price Level and GDP Growth by directly controlling the Supply of Money. This is achieved mainly by managing the Quantity of Monetary Base. The success of Monetary Policy depends to a large extent on the controllability of Money Supply.

Sources of Money Supply

There are two broad sources of Money Supply, i.e. High Powered Money, and Credit Money. These are explained as under -



Measurement of Money Supply in India

In India, the Central Bank (i.e. RBI) has formulated various Aggregates for measurement

Monetary Aggregates

RBI regards these 4 Measures of Money Stock as representing different degrees of Liquidity. (M1, M2, M3, M4)

- M1 = Currency held by the Public + Net Demand Deposits of Banks (CASA Deposits) + Other Deposits with the RBI.
 Note: Net Demand Deposits = Total Demand Deposits Less Inter-Bank Deposits.
- M2 = M1 + Savings Deposits with Post Office (PO) Savings Banks.
- M3 = M1 + Net Time Deposits with the Banking System.
- M4 = M3 + Total Deposits with PO Savings Banks (excluding National Savings Certificates)

Note: Note: M1 is called Narrow Money, while M4 is called Broad Money
 M1 is the most liquid while M4 is the least liquid.

Determinants of Money Supply

- **Central Bank Behaviour:** As per this Approach, Money Supply is determined exogenously by the Central Bank.
- **Public Behaviour:** Money Supply is determined endogenously by changes in the economic activities which affect people's desire to hold Currency relative to Deposits, Rate of Interest, etc.

- **Combined Behaviour:** Supply of Nominal Money in the Economy is determined by the joint behaviour of the Central Bank, the Commercial Banks and Public. [Money Multiplier Approach.]

Money Multiplier Approach to Supply of Money

A. Money Multiplier Approach considers 3 Factors as Determinants of Money Supply, namely –

1. Stock Of High-Powered Money (H) [Behaviour Of The Central Bank]

- Its control over the Issue of Currency is reflected in the Supply of Nominal High-Powered Money.
- With all other variables unchanged, Total Supply of Nominal Money will vary directly with the Supply of Nominal High-Powered Money.

2. Ratio Of Reserves To Deposits (RDR) [Behaviour Of The Commercial Banks]

- $RDR = R/D$
- RDR (Reserves to Deposits Ratio) represents the behaviour of the Commercial Banks, in determining Money Supply through "Credit Money".
- The behaviour of the Commercial Banks is reflected in the Ratio of their Cash Reserves to Deposits, known as the "Reserve Ratio" (RDR).

3. Ratio Of Currency To Deposits (CDR) [Behaviour Of The General Public]

- $CDR = C/D$
- CDR (Currency to Deposits Ratio) represents the behaviour of the General Public, in determining Money Supply.
- They influence the Nominal Demand Deposits of the Commercial Banks by their decisions in respect of the amount of Nominal Currency in hand (Money holding as Cash) designated as "Currency Ratio" (CDR).

These Variables are designated as the 'proximate determinants' of the Nominal Money Supply in the Economy

B. Money Multiplier Approach recognizes the relationship of Money Supply as

$$M = m \times MB$$

where

M = Money Supply,

m = Money Multiplier Ratio, and

MB = Monetary Base (or) High Powered Money

Note: The higher the MB, higher the Money Supply (M)

The lower the Ratios (RDR and CDR), higher the 'm', and hence higher the Money Supply (M).

From the above equation, Money Multiplier (m) = . *Money Supply / Monetary Base*

Illustration: For this Illustration, assume A, B, C, D, E are all Individuals, and X, Y, Z are Banks.

- A earns ₹ 1,500, and after holding ₹ 500 cash for his purpose, he deposits ₹ 1,000 in Cash at Bank X. If the Required RDR is 10%, Bank X will lend ₹ 900 to B, i.e. it deposits ₹ 900 in B's Account, that B can now use. Now, B owns ₹ 900.
- B buys goods from C, and pays ₹ 900 to C's Bank Y. Now, Bank Y will have an increase in Cash of ₹ 900, which it may lend ₹ 810 to D after 10% RDR.

- D may again deposit this money in another Bank Z. After keeping 10% as RDR, ₹ 729 can be lent out to E.
- This process continues "ad infinitum" and Banks thus "create" money supply called "Credit Money".
- The total of all this Money Supply will be = $\times 1,000 = ₹ 10,000$ So, Initial Deposit 1 10% multiplies itself by 10 times.

Money Multiplier Ratio: The Money Multiplier Ratio (m) in the above relationship is given by the formula

$$M = \frac{1 + CDR}{RDR + ERR + CDR}$$

$$ERR = \text{Excess Reserves Ratio} = \frac{\text{Excess Reserve}}{\text{Deposits}}$$

Impact of RDR on Money Supply & Money Multiplier

A. RDR Concept:

- When People deposit their Money (Currency) into Banks (as Demand Deposits), Banks do not hold them as such. Banks create "Credit Money" by using the deposited money for giving Loans to Individuals | Business Firms, who have to repay them to the Banking System.
- The difference between Interest paid (to Public) and Interest Earned (on Loans given) is called "Spread" and constitutes Gross Income of the Banks, from which other Expenses are met.
- However, every Rupee of Demand Deposits cannot be given away as Loans, since Banks are required to hold back a portion of such Deposits as "Reserves", to maintain Liquidity in the Banking System. This Ratio is called as RDR (Reserves to Deposits Ratio).
- If Reserves increase, then Money Supply will be reduced. Hence, Money Supply is inversely related to RDR.
- Reserves may be as the result of -
 - the Regulations of the Central Bank (RBI) - referred as Statutory Reserves, or
 - decisions taken by the Commercial Banks themselves - referred as Excess Reserves.

Impact of Statutory Reserves

Situation 1 Central Bank decreases Statutory Reserve Ratio on Demand Deposits

There will be expansion of Loans by Banks, hence expansion of Deposits by Public (since money flow happens), since the same level of Reserves can now support more Loans and Deposits. Thus, Money Supply will increase.

Situation 2 Central Bank increases Statutory Reserve Ratio on Demand Deposits

Since Reserves are needed, Banks will restrict / recall / reduce (i.e. contract) their Loans, causing a decline in Deposits and hence in the Money Supply.

Situation 3 Central Bank injects Money into Banking System but these are held as Excess Reserves by the Banking System

Since they do not lead to any Additional Loans, these Excess Reserves do not lead to creation of Money. There will be no effect on Deposits or Currency and hence no effect on Money Supply.

Impact of Excess Reserves:

Excess reserve represents the additional reserve maintained by commercial bank with RBI over and above the minimum required ratio to be kept

Excess Reserve is affected by the Cost and Benefits of holding such Reserves. For this purpose-

- Cost = Interest that could have been earned by giving these amounts as Loans, i.e Opportunity Cost,
- Benefit = Assurance as to adequate liquidity in the banking system, to meet withdrawal of Deposits by Public.

These costs and benefits are influenced by two factors, viz. Market Interest Rates and Expected Deposits Outflows, which have following impact-

If interest rate increases

Banks will prefer to reduce Excess Reserves and give them as Loans to have higher earnings. So, the ratio of Excess Reserves to Deposits falls.

If Interest Rate decreases

Opportunity Cost of holding excess Reserves declines and Reserves will rise.

If deposit outflows are expected to increase

Banks will want more assurance against the possibility and will increase the Excess Reserves Ratio.

If deposit Outflows are expected to decrease

Decline in Expected Deposit Outflows will reduce the benefit of holding Excess Reserves, consequently, Excess Reserves will rise.

Credit Multiplier

- It describes the amount of Additional Money created by Commercial Bank through the process of lending the available Money in excess of the Reserve Requirements, i.e. how much new Money will be created by the Banking System for a given increase in the High-Powered Money.
- It reflects a Bank's ability to increase the Money Supply.
- It is also called "Deposit Multiplier" or "Deposit Expansion Multiplier".
- Credit Multiplier = $\frac{1}{\text{Required Reserve Ratio}}$
- The Deposit Multiplier and Money Multiplier are closely related, but are not identical because -
 - Generally Banks do not lend out all of their available money but instead maintain Excess Reserves..
 - All Individuals / Borrowers do not spend every Rupee they have earned / borrowed. They are likely to hold / convert some portion of it to Cash.

Impact of CDR on Money Supply & Money Multiplier

- CDR Concept:** CDR is the ratio of money held by the Public held in Currency, to that they hold in Demand Deposits, with Banks. So, $\text{CDR} = \frac{\text{Currency held by Public}}{\text{Demand Deposits in Banks}} = \frac{C}{D}$. Suppose CDR is 0.2, it means

for every ₹ 100, an Individual with hold ₹ 20 as Currency with him, and place ₹ 80 in Commercial Banks as Demand Deposits.

2. Significance: CDR -

- (a) represents the degree of adoption of banking habits by the people, and is thus a behavioural parameter,
- (b) reflects People's preference for liquidity,
- (c) is related to the level of economic activities or the GDP Growth,
- (d) is influenced by the degree of financial sophistication, e.g. (i) ease and access to Financial Services, (ii) availability of a number of Liquid Financial Assets, (iii) Financial Innovations, (iv) Institutional Factors, etc.
- (e) is driven by temporary factors also, e.g. CDR may increase during festive seasons as People convert Deposits into Cash for meeting extra expenditure during that periods.

3. Impact: Increase in the Monetary Base that goes into -

- (a) Currency - is not multiplied.
- (b) Demand Deposits - is multiplied (by the Banking System, subject to Reserve Requirements)

Impact of Other factors on Money Supply & Money Multiplier

A. Effect of Government expenditure on Money supply-

- a) Whenever the Central and State Governments' cash balance falls short of the Minimum requirement, they are eligible to avail of the facility called Ways & Means Advances (WMA) / Overdraft (OD) Facility.
- b) When Government incurs expenditure, it involves debiting Government balances with RBI, and Crediting the Receiver (e.g. Salary Account of Employee) Account with the Commercial Bank.
- c) So, it results in generation of Excess Reserves, (i.e. excess balances of Commercial Banks with RBI).
- d) Excess reserves thus created can potentially lead to an increase in Money supply through the Money Multiplier process e.g. When the Employee uses this money for making payments for purchase of goods etc.

B. Effect of Time deposits (Note: RDR requirements generally relate to Demand Deposits, not Time Deposits)

An increase in Time Deposit – Demand Deposit Ratio means that greater availability of Free Reserves and consequent enlargement of volume of Money Supply.