**Money Supply: Definition, Determinants**

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**1. Definition of Money Supply**

The supply of money is a stock at a particular point of time, though it conveys the idea of a flow over time. The term ‘the supply of money’ is synonymous with such terms as ‘money stock’, ‘stock of money’, ‘money supply’ and ‘quantity of money’. The supply of money at any moment is the total amount of money in the economy.

There are three alternative views regarding the definition or measures of money supply. The most common view is associated with the traditional and Keynesian thinking which stresses the medium of exchange function of money. According to this view, money supply is defined as currency with the public and demand deposits with commercial banks.

Demand deposits are savings and current accounts of depositors in a commercial bank. They are the liquid form of money because depositors can draw cheques for any amount lying in their accounts and the bank has to make immediate payment on demand. Demand deposits with commercial banks plus currency with the public are together denoted as M1, the money supply. This is regarded as a narrower definition of the money supply.

The second definition is broader and is associated with the modern quantity theorists headed by Friedman. Professor Friedman defines the money supply at any moment of time as “literally the number of dollars people are carrying around in their pockets, the number of dollars they have to their credit at banks or dollars they have to their credit at banks in the form of demand deposits, and also commercial bank time deposits.” Time deposits are fixed deposits of customers in a commercial bank. Such depos­its earn a fixed rate of interest varying with the time period for which the amount is deposited. Money can be withdrawn before the expiry of that period by paying a penal rate of interest to the bank.

So, time deposits possess liquidity and are included in the money supply by Friedman. Thus, this definition includes M1 plus time deposits of commercial banks in the supply of money.

This wider definition is characterized as M2 in America and M3 in Britain and India. It stresses the store of value function of money or what Friedman says, ‘a temporary abode of purchasing power’.

The third definition is the broadest and is associated with Gurley and Shaw. They include in the supply of money, M2plus deposits of savings banks, building societies, loan associations, and deposits of other credit and financial institutions.

The choice between these alternative definitions of the money supply depends on two considera­tions. One a particular choice of definition may facilitate or blur the analysis of the various motives for holding cash; and two from the point of view of monetary policy, an appropriate definition should include the area over which the monetary authorities can have direct influence. If these two criteria are applied, none of the three definitions is wholly satisfactory.

The first definition of money supply may be analytically better because M1 is a sure medium of exchange. But M1 is an inferior store of value because it earns no rate of interest, as is earned by time deposits. Further, the central bank can have control over a narrower area if only demand deposits are included in the money supply.

The second definition that includes time deposits (M,) in the supply of money is less satisfactory analytically because “in a highly developed financial structure, it is important to consider separately the motives for holding means of payment and time deposits.” Unlike demand deposits, time deposits are not a prefect liquid form of money.

This is because the amount lying in them can be withdrawn imme­diately by cheques. Normally, it cannot be withdrawn before the due date of expiry of deposit. In case a depositor wants his money earlier, he has to give a notice to the bank which allows the withdrawal after charging a penal interest rate from the depositor.

Thus, time deposits lack perfect liquidity and cannot be included in the money supply. But this definition is more appropriate from the point of view of monetary policy because the central bank can exercise control over a wider area that includes both demand and time deposits held by commercial banks.

The third definition of money supply that includes M2 plus deposits of non-bank financial institu­tions is unsatisfactory on both the criteria. Firstly, they do not serve the medium of exchange function of money. Secondly, they almost remain outside the area of control of the central bank. The only advantage they possess is that they are highly liquid store of value. Despite this merit, deposits of non­bank financial institutions are not included in the definition of money supply.

**2. Determinants of Money Supply**

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

Thus, the determinants of money supply are both exogenous and endogenous which can be de­scribed broadly as: the minimum cash reserve ratio, the level of bank reserves, and the desire of the people to hold currency relative to deposits.

**1. The Required Reserve Ratio:**

**The required reserve ratio (or the minimum cash reserve ratio or the reserve deposit ratio) is an important determinant of the money supply. An increase in the required reserve ratio reduces the supply of money with commercial banks and a decrease in required reserve ratio increases the money supply.**

The RRr is the ratio of cash to current and time deposit liabilities which is determined by law. Every commercial bank is required to keep a certain percentage of these liabilities in the form of deposits with the central bank of the country. But notes or cash held by commercial banks in their tills are not included in the minimum required reserve ratio.

But the short-term assets along with the cash are regarded as the liquid assets of a commercial bank. In India the statutory liquidity ratio (SLR) has been fixed by law as an additional measure to determine the money supply.

The SLR is called secondary reserve ratio in other countries while the required reserve ratio is referred to as the primary ratio. The raising of the SLR has the effect of reducing the money supply with commercial banks for lending purposes, and the lowering of the SLR tends to increase the money supply with banks for advances.

**2. The Level of Bank Reserves:**

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

These are legal minimum or required reserves. Required reserves (RR) are determined by the required reserve ratio (RRr) and the level of deposits (D) of a commercial bank RR=RR r× D.

If deposits are Rs 80 lakhs and required reserve ratio is 20 percent, then the required reserves will be 20% x 80=Rs 16 lakhs. If the reserve ratio is reduced to 10 per cent, the required reserves will also be reduced to Rs 8 lakhs.

Thus, the higher the reserve ratio, the higher the required reserves to be kept by a bank, and vice versa. But it is the excess reserves (ER) which are important for the determination of the money supply. Excess reserves are the difference between total reserves (TR) and required reserves (RR) ER=TR-RR. If total reserves are Rs 80 lakhs and required reserves are Rs 16 lakhs, then the excess reserves are Rs 64 lakhs (Rs 80 Lakhs – 16 lakhs).

When required reserves are reduced to Rs 8 lakhs, the excess reserves increase to Rs 72 lakhs. It is the excess reserves of a commercial bank which influence the size of its deposit liabilities. A commercial bank advances loans equal to its excess reserves which are an important component of the money supply. To determine the supply of money with a commercial bank, the central bank influences its reserves by adopting open market operations and discount rate policy.

Open market operations refer to the purchase and sale of government securities and other types of assets like bills, securities, bonds, etc., both government and private in the open market. When the central bank buys or sells securities in the open market, the level of bank reserves expands or contracts.

The purchase of securities by the central bank is paid for with cheques to the holders of securities who, in turn, deposit them in commercial banks, thereby increasing the level of bank reserves. The opposite is the case when the central bank sells securities to the public and banks which make payments to the central bank through cash and cheques, thereby reducing the level of bank reserves.

The discount rate policy affects the money supply by influencing the cost and supply of bank credit to commercial banks. The discount rate, known as the bank rate in India, is the interest rate at which commercial banks borrow from the central bank. A high discount rate means that commercial banks get less amount by selling securities to the central bank.

**3. Public’s Desire to Hold Currency and Deposits:**

People’s desire to hold currency (or cash) relative to deposit in commercial banks also determines the money supply. If people are in the habit of keeping less in cash and more in deposits with the commercial banks, the money supply will be large.

This is because banks can create more money with larger deposits. On the contrary, if people do not have banking habits and prefers to keep their money holdings in cash, credit creation by banks will be less and the money supply will be at a low level.

**4. High Powered Money and the Money Multiplier:**

The current practice is to explain the determinants of the money supply in terms of the monetary base or high-powered money. High-powered money is the sum of commercial bank reserves and cur­rency (notes and coins) held by the public. High-powered money is the base for the expansion of bank deposits and creation of the money supply. The supply of money varies directly with changes in the monetary base, and inversely with the currency and reserve ratios.

**5. Other Factors:**

The money supply is a function not only of the high-powered money determined by the monetary authorities, but of interest rates, income and other factors. The latter factors change the proportion of money balances that the public holds as cash. Changes in business activity can change the behaviour of banks and the public and thus affect the money supply. Hence the money supply is not only an exogenous controllable item but also an endogenously determined item.

**What is Velocity of Circulation?**

Velocity of Circulation refers to the average number of times a single unit of money changes hands in an economy during a given period of time. It can also be referred to as the velocity of money or velocity of circulation of money. It is the frequency with which the total money supply in the economy turns over in each period of time.

If the velocity of money is increasing, then the velocity of circulation is an indicator that transactions between individuals are occurring more frequently. A higher velocity is a sign that the same amount of money is being used for a number of transactions. A high velocity indicates a high degree of inflation.

Formula

The GDP equation is as follows:

Gross Domestic Product (GDP) = Money Supply x Velocity of Circulation

Therefore, the formula for velocity is the following:

Velocity of Circulation = Gross Domestic Product (GDP) / Money Supply

Example

Consider the following example. Let us assume that an economy consists of two individuals, a carpenter and a grocery shop owner. Over the course of a year, they exchange $100 to buy goods/services from each other in just four transactions, which are as follows:

The carpenter buys vegetables from the grocer for $50.

The carpenter also buys milk worth $50 from the grocer.

The grocer gets some repair work done from the carpenter and pays him $30.

The grocer also gets wooden shelves constructed in his shop by the carpenter for $70.

We can observe that $200 changed hands during the year, even though initially there was only $100 in the economy. This is because each dollar was spent on new goods and services twice a year. We can say that the velocity of circulation is 2/year.

However, only monetary transactions are considered in this situation. For example, if the carpenter gifts something to the grocer, it will not be considered a transaction to be added to the calculation.

 Velocity of Circulation and Money Demand

Whenever the interest rate on financial assets is high, the desire to hold money falls as people try to exchange it for other goods or financial assets. As a result, the velocity of circulation rises. Hence, when the money demand is low, the velocity will be high. Conversely, when the opportunity cost/alternate cost is low, money demand is high and the velocity of circulation is low.

Factors Affecting the Velocity of Circulation

Money Supply – Money supply and the velocity of money are inversely proportional. If the money supply in an economy falls short, then the velocity of money will rise, and vice versa.

Frequency of Transactions – As the number of transactions increases, so does the velocity of circulation.

Regularity of Income – Regularity of income enables people to spend their money more freely, leading to a rise in the velocity of circulation.

Payment System – It is also affected by the frequency with which labor is paid (weekly, monthly, bi-monthly) and how fast the bills for various goods and services are settled.

There are several other factors involved, including the value of money, the volume of trade, credit facilities available in the economy, business conditions, etc.

 Monetarism and Keynesian Economics

There is a conflict of belief between Monetarists and Keynesian economists regarding the concept. Monetarists believe in the stability of the velocity of circulation and argue that there is a direct relationship between money supply and price levels, and between the rate of growth of money supply and rate of inflation. On the other hand, Keynesian economists believe that the velocity of circulation is an unstable concept that can change rapidly, leading to changes in the money supply.

**Conclusion:**

We have discussed above the factors which determine money supply through the creation of bank credit. But money supply and bank credit are indirectly related to each other. When the money supply increases, a part of it is saved in banks depending upon the depositors’ propensity to save. These savings become deposits of commercial banks who, in turn, lend after meeting the statutory reserve requirements. Thus, with every increase in the money supply, the bank credit goes up.