CHAPTER V

MONEY SUPPLY AND INFLATION - I
The Supply of Money—Some Basic Facts

When used without qualifications, the term supply of money may refer to the total stock of domestic means of payment which is owned by the public in a country. In a modern economy, the total quantity of money held by the public in disposable form generally consists of:

(a) Currency and (b) Commercial bank's demand deposits. Time deposits of commercial banks are not included in money as they can be withdrawn only at the end of a specified period. These represent store of value but not a medium of exchange. Moneyness means liquidity and liquidity is provided by currency and demand deposits, not by time deposits.

Demand deposits are defined to include all deposits withdrawable without notice such as current accounts, portion of savings banks deposits withdrawable without notice, unclaimed deposits and overdue fixed deposits.

Whether this is an appropriate definition of the supply of money or not is still one of the unresolved issues in monetary theory. Theoretically, there is no clear cut dividing line between money and other assets. Thus, Professor Sayers observes, "there is no single asset

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1. According to current procedure of the Reserve Bank of India, currency comprises notes, rupee coins and small coins in circulation excluding the balances of Central and State Governments held at treasuries and cash on hand of the banks.

or group of assets that uniquely possess a unique monetary quality that is totally absent from all other assets...convenience in settling transactions is an important quality in a monetary asset; various monetary assets have this quality in varying degrees.  

Empirically, the controversy has centred around the inclusion of time deposits as money. Such deposits, in so far as they represent a source of ready purchasing power like currency and demand deposits should obviously be included in money supply. But whether these possess ready purchasing power or not is a question to which no answer can be given without knowing the banking conventions of a particular country. But most of the countries do not include these in bound money supply as (1) these are time deposits and (2) these are of a heterogeneous nature.

Changes in the money supply arise out of the actions of the treasury, the central bank and the commercial banks. The central bank, by varying the reserves available to commercial banks, affects the supply of money. The commercial banks, on the basis of these reserves, create demand deposits. The government increases the money supply by selling the securities to the commercial banks.


5. Ibid., p. 23.
and spending this money (sale proceeds of the securities) for day-to-day transactions. The extent of the creation of demand deposits by the commercial banks depends upon their cash-reserve ratio, which can be adjusted as need or desired by the central bank.\(^6\)

Thus, money supply in the strict sense of the term consist of currency in circulation and demand deposits of the Commercial Banks. Other types of deposits are excluded.

The controversy with regard to the role of money supply in an economy goes on unabated and it continues to be a live issue among the economists. People still think whether by manipulating the supply of money, the authorities can or cannot affect the course of economy. The most recent and perhaps the most vigorous phase of the debate was touched off by the appearance of the Radcliffe Committee Report, with its stress on the wider concept of liquidity.\(^7\) This concept and its implications have been attacked by people who may be called 'traditionalists'. This group has restated and reshaped the arguments in support of the orthodox view of monetary policy with its emphasis on the central importance of control of the supply of money.

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6. The credit created by the formula \( n = \frac{a}{1-r} \)

Where \( n \) is the amount of credit created
\( a \) is the initial deposits
\( r \) is the credit creating capacity.

Example

Assuming that 10% is the cash reserve ratio, an initial deposit of Rs.1,000/- will lead to a credit expansion of Rs.10,000/-.

\[ n = 1000 \times \frac{1}{(1-\frac{9}{10})} = 10,000 \]
Radcliffe Committee's stress on the wider concept of liquidity was further supported by some contemporary European monetary economists like Prof. Sayers of England, 8 Prof. Schmolders of Germany 9 and especially, J.G.Gurley and E.S.Shaw of the United States. 10

The fundamental thesis of the liquidity theory of money is that it is neither income nor the quantity of money, but liquidity which provides the basic link between general business or economic activity and monetary cooperation. 11

The liquidity aspect of money becomes more important because money is, by far, the most generally accepted medium of exchange. Liquidity, in its broad sense, thus, may be used to mean 'moneyness'. Money, in fact is a liquidity instrument par excellence. 12

The liquidity theory of money in a way restores to monetary theory of good deal of prestige and dignity by emphasising the monetary policy's unique role in stiffening of liquidity controls and its extension in times of abnormal conditions.


11. G.Schmolders, op.cit., p.3.

This dispute can be resolved only by empirical research. Such research needs, however, to be preceded by discussion aimed at clarifying concepts.

The fundamental issue can be framed as follows: 13

1. To what extent and in what ways can changes in the stock of money be expected to influence the flow of monetary demand for goods and services? "Monetary theory, reduced by the quantity theory nearly to complete abdication, sparkles with life and energy by the introduction of liquidity as the missing link between money and the aggregate demand." 14

2. Can a reduction in money supply, be an effective weapon to control inflation?

The arguments to support these notions can be of two types. First there is the quantity theory approach which seeks to establish a direct link between money supply and prices. Secondly, there is the rate of interest approach which postulates an indirect link between the two. Here reliance is placed on the view that a shortage of money will show itself in a rise in interest rates which will act as a deterrent to expenditure financed by borrowing, thus reducing the demand and the


price level. But both the arguments lead to the same relationship between money supply and prices.

It was felt long before the Radcliffe Committee Report that the direct quantity theory link is weakened by the possibility of changes in the velocity of money. It follows that if, as a result of decrease in money supply, velocity of circulation of money increases, the efforts of the authorities are neutralised.

Empirical support, however, to this line of argument is not easily found.

Table 5.1 shows that the income velocity of money is almost constant, although the increase in money supply as well as monetary resources has been several fold. But since this argument is congenial to traditionalists, it is appropriate to examine this aspect critically.

An essential link in the argument is the suggestion that some reduction in money supply will cause people to feel shortage of money. But this apparent assumption needs closer scrutiny and analysis.
Table 5.1

Income Velocity of Money Supply and Aggregate Monetary Resources

<table>
<thead>
<tr>
<th>Year</th>
<th>National Income at Current Prices*</th>
<th>Money Supply with the Public</th>
<th>Aggregate Monetary Resources</th>
<th>Average Income Velocity of Money Supply</th>
<th>Average Income Velocity of Monetary Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>1960-61</td>
<td>13294</td>
<td>2725</td>
<td>3617</td>
<td>4.88</td>
<td>3.67</td>
</tr>
<tr>
<td>1961-62</td>
<td>14050</td>
<td>2344</td>
<td>3309</td>
<td>4.94</td>
<td>3.69</td>
</tr>
<tr>
<td>1962-63</td>
<td>14873</td>
<td>30987</td>
<td>4216</td>
<td>4.80</td>
<td>3.53</td>
</tr>
<tr>
<td>1963-64</td>
<td>17094</td>
<td>3475</td>
<td>4660</td>
<td>2.92</td>
<td>3.67</td>
</tr>
<tr>
<td>1964-65</td>
<td>20061</td>
<td>3866</td>
<td>5173</td>
<td>5.19</td>
<td>3.88</td>
</tr>
<tr>
<td>1965-66</td>
<td>20621</td>
<td>4236</td>
<td>5745</td>
<td>4.87</td>
<td>3.59</td>
</tr>
<tr>
<td>1966-67</td>
<td>23903</td>
<td>4641</td>
<td>6462</td>
<td>5.15</td>
<td>3.70</td>
</tr>
<tr>
<td>1967-68</td>
<td>28374</td>
<td>5008</td>
<td>7041</td>
<td>5.67</td>
<td>4.03</td>
</tr>
<tr>
<td>1968-69</td>
<td>28678</td>
<td>5428</td>
<td>7794</td>
<td>5.28</td>
<td>3.68</td>
</tr>
<tr>
<td>1969-70</td>
<td>31174</td>
<td>6011</td>
<td>8814</td>
<td>5.19</td>
<td>3.54</td>
</tr>
<tr>
<td>1970-71(P)</td>
<td>33955</td>
<td>6729</td>
<td>9979</td>
<td>5.04</td>
<td>3.40</td>
</tr>
<tr>
<td>1971-72(P)</td>
<td>33756</td>
<td>7557</td>
<td>11476</td>
<td>4.73</td>
<td>3.12</td>
</tr>
<tr>
<td>1972-73(P)</td>
<td>38921</td>
<td>8559</td>
<td>13304</td>
<td>4.55</td>
<td>2.93</td>
</tr>
<tr>
<td>1973-74</td>
<td>49631(?)</td>
<td>10052</td>
<td>15586</td>
<td>4.94</td>
<td>3.13</td>
</tr>
</tbody>
</table>

* At factor cost and not at market prices.

@ Estimated

(P) Provisional

What are the precise links between action by the authorities to reduce money supply and the supposed action by people to increase the velocity of money? When money supply is reduced, who feels shortage of money, and why and how?

It may be said that the great bulk of income receivers cannot be directly and immediately affected. People receiving contractually fixed wages and salaries will continue to receive the same unless there is a fall in the volume of employment. The quantities of money made available to these people month by month would continue unchanged. They will not be unusually feel the shortage of money and there is no reason to suppose that their expenditure will be reduced in any way. If their expenditure is unchanged, it can safely be assumed that there will be not much effect on the other sectors of the economy also, except the sectors which mainly depend on credit.

We can start the argument otherwise also. In India, and most of the developing countries, the number of the people receiving contractually fixed wages is less. To start with those sectors of the economy which depend on credit, the contraction in money supply will reduce their liquidity and it will affect the other sectors of the economy as well. Agriculture mainly depends upon the village money lenders. The liquidity position of such non-banking money lenders is affected
by the overall liquidity of the banking sector.

Thus, the first issue may be stated as follows. The changes in the stock of money influence the flow of monetary demand for goods and services to a great extent.

**Money Supply and Inflation in the Long-Run**

The world economic history is full of price disturbances. Whenever such disturbances have occurred, two different explanations have been offered. One, common to all disturbances, is that the price movements reflect changes in the quantity of money. The other explanation has been in terms of some special circumstances like good or bad harvest, low production, the activities of profiteers, the activities of the unions pushing up wages and so on in great variety. Irrespective of the short run stresses and strains in the economy causing upward movement of prices; it is more or less a matter of general agreement that when causative factors other than money-supply, of volatile upward trend in prices are treated as constant, increased money supply and upward rise in prices have a tendency to show positive correlation.

There is a lot of empirical evidence, as the following pages will show both in the context of international as well as national economies. There is no instance in which a substantial change in the stock of money per unit of output has occurred without a
substantial change in the level of prices in the same direction. The nearest exception to this proposition is the German experience from the mid-thirties to 1944. Conversely, there will be no instance in which there is a substantial change in the stock of money in the same direction. Such instances in which prices and the stock of money have moved together, are recorded for many centuries of history, for countries in every part of the globe, and for a wide diversity of monetary arrangements.

There can be little doubt about the statistical correlation. The only thing it does not tell is the direction of influence. It could be that a rise or fall in prices produces a corresponding rise or fall in the stock of money, through appropriate measure of the treasury. Alternatively, it could be that changes in the stock of money produce changes in the prices in the same direction. The second alternative seems to be more plausible.

The general evidence is reinforced by much historical evidence of a more specific character demonstrating that changes in the stock of money can exert an independent influence on prices. One dramatic example is from the experience of the civil war in


America. In 1864, "after the three years of war, after widespread destruction and military reverses, in the face of impending defeat, a monetary reform that succeeded in reducing the stock of money halted and reversed for some months a rise in prices that had been going on at the rate of ten per cent a month most of the war. It would be hard to construct a better controlled experiment to demonstrate the critical importance of the supply of money." 17

The relationship, however, is not a mechanical one. Two major factors produce discrepancies.

1. Change in the output.
2. Change in the amount of money people desire to hold in cash.

For simplicity, the first discrepancy can easily be assumed away. It is contrary to the facts, but over longer periods change in the output is independent and has nothing to do with the stock of money or the price level. Moreover, output is a function of so many things, out of which the affects of money supply (rate of interest) is negligible. So this simplification neither does some violence to the facts nor leads to any significant errors in conclusions.

The major factor that can introduce a discrepancy between movements in money and in prices is a change in the ratio that the public desires to maintain between its cash balance and income. The amount of money an individual wants to hold in cash depends upon the price level. At twice the price level he will want to hold twice the amount of money.

But, broadly speaking, the public as a whole cannot by itself affect the total volume of money available to be held in cash. To each individual separately, it appears that he can do so. In fact, an individual can increase or decrease his cash balances only through another individuals decrease or increase. If individuals as a whole, try to reduce their holdings, they will increase the flow of expenditure and in this way will reduce the ratio of their cash balances to income, because prices will tend to rise as a result of increased expenditure.

A wide range of empirical evidence shows that the ratio which people desire to maintain between their cash balances and their incomes is relatively stable over fairly long periods, aside from the effect of two factors.

1. The level of real income per capita.
2. The cost of holding money.18

The holding of cash balances is regarded as a luxury. The amount of money the public desires to hold not only goes up to its real income rises but goes up more than in proportion.\(^{19}\)

The cost of holding cash balances depends mainly on the rate of interest that can be earned on alternative assets. The empirical evidence suggests that while the rate of interest has a systematic effect on the amount of money held, the rate of change in prices, has no discernible effect in ordinary times when price changes are small. On the other hand, it has a clearly discernible and major effect when prices change is rapid and long continued, as during extreme inflations.\(^{20}\)

The whole discussion boils down the fact that money supply is definitely the reason for the price fluctuations. The suggestion that underdeveloped countries may follow dear rather than cheap money policy should remain unaffected by the Radcliffe Committee's view that the lever to operate is not the supply of money but the general liquidity of an economy. To quote from the Report of the Committee "the factor which monetary policy should seek to influence or control is something that reaches beyond what is known as the 'supply of money'. It is nothing less than the state of liquidity of the

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\(^{20}\) Phillip Cagan - op.cit.
whole economy. The behaviour of our economy in particular, the moderation or pressure of demand from time to time is influenced by the relative liquidity of potential spenders at any one time, and thus, at once remove, by the liquidity of those who might act as lenders to them or subscribers to their funds. 21

Even the liquidity lever is not more easily operated if there is the tendency towards excessive expansion in money supply. 22 In case we desired to make money dearer than before, we would not succeed in our objective if only interest rates chargeable by commercial banking institutions were raised. We should regulate the entire interest rate structure of the economy including that part of it which is related to non-banking financial institutions. 23

The analysis given above clearly points out to the problem of monetary management for non-bank financial institutions. But these institutions can not afford to bypass the central banks policies regarding the supply of money. These institutions level money on the basis of their deposits. They lend more money at a cheaper rate because they get more deposits by way of higher interest rates. To reduce the money supply, the central

23. Radcliffe Committee Report, p.337.
bank can increase its lending as well as borrowing rates. To deposit the money in commercial banks will become more attractive for the public as the interest rate are quite high. Thus, the lending power of non-bank, financial intermediaries can be reduced by inviting deposits at more attractive and comparable to these institutions, rate of interest. By doing so, the central bank will not only reduce the supply of money but the overall liquidity in the economy.

As far as the financial intermediaries in India, there are quite a few but in many cases they are either controlled by the central banking authority or at any rate not so much out of their control that the increased liquidity due to them can render monetary control as difficult as might appear on the face of it. The rising liquidity in underdeveloped countries is government created or within the control of the government. So a reduction in the money supply, by making it dearer, by the government cannot be denied its place in controlling price movements.

Money Supply and Inflation in Short-run

Over the longer periods considered in the preceding section, changes in the stock of money per unit of output tend to dominate the price changes. Over the shorter periods, this is less so, although the general and average relationships is very much similar. The reason for the looser connection in such periods presumably is that movements in both the stock of money and in prices
are similar. Over longer periods these movements cumulate and tend to swamp any disturbance in the relation between desired each balances, real income and the cost of holding money. In shorter periods the disturbances are not important relative to the movements in money and prices.24

There can be little doubt on the basis of the evidence given in the next chapter, that there is a close link between monetary changes and price changes over the shorter periods. But this conclusion can prove to be a misguide for the policy framers, unless a few important considerations are borne in mind.

The first is that the direction of influence between the money stock and prices is less clear-cut and more complex during short periods than during long period. During short periods, changes in the money stock are a consequence as well as an independent cause of changes in incomes and prices, though once they occur they will produce still further effects on income and prices. This consideration blurs the relationship, but does not reverse it.

A second, and perhaps more important consideration, has to do with the timing of the changes in the money supply. On the average, the rate of change in the money

supply has reached its peak nearly 16 months before the peak in general business and has reached its trough over 12 months before the trough in general business.\(^{25}\) Looking at the time series for money supply and price indices in India, we find the same relationship as stated above in the case of U.S. This is a strong evidence for the independent influence of monetary change.

But it also has a very different significance. It means that it must take a long time for the influence of monetary changes to make themselves felt. What happens now to the rate of change of the money supply may not be reflected in prices or economic activity for 12 to 16 months, on the average.\(^{26}\) But the timing varies from cycle to cycle and from country to country. The above timing may be true for U.S., but in India the period may be quite small. The timing depends on the liquidity thirst of the economy. In an economy where demand for money is very high and production lags are quite large, money supply may affect the prices immediately.

The third consideration is in some ways a different aspect of the one first discussed. The variation in timing means that there is a considerable beway in the precise relation between changes in the stock of money and in prices over short periods of time-


there are other factors at work that lead to these variations and means that even if the stock of money were to change in a highly regular and consistent fashion, economic activity and prices would none the less fluctuate. When the money changes are large, they tend to dominate these other factors—or they will force these factors to work in a particular direction.

Thus, there seems little doubt that a large change in the money supply within a relatively short period will force a change in the same direction in income and prices. Conversely, a large change in income and prices in short periods, is unlikely to occur without a large change in money supply. But when the money changes are moderate, the other factors come into their own. If we know enough about them and about the detailed effects of monetary changes, we might be able to counter these other effects by monetary measures. There is only this limitation to the possibility of any fine control of the general level of prices by a fine adjustment of monetary change.