

Chapter-25

CHANGES IN THE VALUE OF MONEY : THE QUANTITY THEORY OF MONEY AND ITS VARIANTS

MEANING OF VALUE OF MONEY

By value of money is meant the purchasing power of money over goods and services in a country. What a rupee can buy in India represents the value of money of the rupee. Thus the phrase, "value of money" is a relative concept which expresses the relationship between a unit of money and the goods and services which can be purchased with it. This shows that the value of money is related to the price level because goods and services are purchased with a money unit at given prices. But the relation between the value of money and price level is an inverse one. If V presents the value of money and P the price level, then, $V = 1/P$. When the price level rises, the value of money falls, and vice versa. Thus in order to measure the value of money, we have to find out the general price level.

The value of money is of two types: The internal value of money and the external value of money. The internal value of money refers to the purchasing power of money over domestic goods and services. The external value of money refers to the purchasing power of money over foreign goods and services.

FISHER'S QUANTITY THEORY OF MONEY: THE CASH TRANSACTIONS APPROACH

The quantity theory of money states that the quantity of money is the main determinant of the price level or the value of money. Any change in the quantity of money produces an exactly proportionate change in the price level. In the words of Irving Fisher, "Other things remaining unchanged, as the quantity of money in circulation increases, the price level also increases in direct proportion and the value of money decreases and vice versa." If the quantity of money is doubled, the price level will also double and the value of money will be one half. On the other hand, if the quantity of money is reduced by one half, the price level will also be reduced by one half and the value of money will be twice.

Fisher has explained his theory in terms of his equation of exchange:

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

where P = price level, or $1/P$ = the value of money;
 M = the total quantity of legal tender money;
 V = the velocity of circulation of M ;
 M' = the total quantity of credit money;
 V' = the velocity of circulation of M' ;
 T = the total amount of goods and services exchanged for money or transactions performed

by money.

This equation equates the demand for money (PT) to supply of money ($MV=M'V'$). The total volume of transactions multiplied by the price level (PT) represent the demand for money. According to Fisher, PT is ΣPQ . In other words, price level (P) multiplied by quantity bought (Q) by the community (Σ) gives the total demand for money. This equals the total supply of money in the community consisting of the quantity of actual money M and its velocity of circulation V plus the total quantity of credit money M' and its velocity of

circulation V' . Thus the total value of purchases (PT) in a year is measured by $MV+M'V'$. Thus the equation of exchange is $PT=MV+M'V'$. In order to find out the effect of the quantity of money on the price level or the value of money, we write the equation as

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

Fisher points out that the price level (P) varies directly as the quantity of money ($M+M'$), provided the volume of trade (T) and velocity of circulation (V, V') remain unchanged. The truth of this proposition is evident from the fact that if M and M' are doubled, while V, V' and T remain constant, P is also doubled, but the value of money ($1/P$) is reduced to half.

Fisher's quantity theory of money is explained with the help of Figure 1 (A) and (B). Panel A of the figure shows the effect of changes in the quantity of money on the price level. To begin with, when the quantity of money is M_1 , the price level is P_1 . When the quantity of money is doubled to M_2 , the price level is also doubled to P_2 . Further, when the quantity of money is increased four-fold to M_4 , the price level also increases by four times to P_4 . This relationship is expressed by the curve $P=f(M)$ from the origin at 45° .

In Panel B of the figure, the inverse relation between the quantity of money and the value of money is depicted where the value of money is taken on the vertical axis. When the quantity of money is M_1 , the value of money is $1/P_1$. But with the doubling of the quantity of money to M_2 , the value of money becomes one-half of what it was before, $1/P_2$. And with the quantity of money increasing by four-fold to M_4 , the value of money is reduced by $1/P_4$. This inverse relationship between the quantity of money and the value of money is shown by downward sloping curve $1/P=f(M)$.

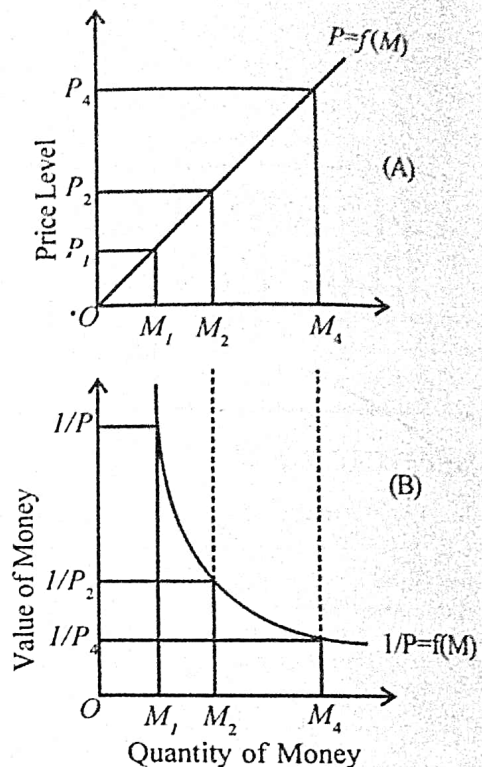


Fig. 1.

Assumptions of the Theory

Fisher's theory is based on the following assumptions:

1. P is a passive factor in the equation of exchange which is affected by the other factors.
2. The proportion of M' to M remains constant.
3. V and V' are assumed to be constant and are independent of changes in M and M' .
4. T also remains constant and is independent of other factors such as M, M', V and V' .
5. It is assumed that the demand for money is proportional to the value of transactions.
6. The supply of money is assumed as an exogenously determined constant.
7. The theory is applicable in the long run.
8. It is based on the assumption of the existence of full employment in the economy.

Criticisms of the Theory

The Fisherian quantity theory has been subjected to severe criticisms by economists.

1. **Truism.** According to Keynes, "The quantity theory of money is a truism." Fisher's equation of exchange is a simple truism because it states that the total quantity of money ($MV+M'V'$) paid for goods and services must equal their value (PT). But it cannot be accepted today that a certain percentage change in the quantity of money leads to the same percentage change in the price level.

2. **Other Things not Equal.** The direct and proportionate relation between quantity of money and price level in Fisher's equation is based on the assumption that "other things remain unchanged". But in real life, V, V' and T are not constant. Moreover, they are not independent of M, M' and P . Rather, all elements in Fisher's equation are interrelated and interdependent. For instance, a change in M may cause a change in V .

Consequently, the price level may change more in proportion to a change in the quantity of money. Similarly, a change in P may cause a change in M . Rise in the price level may necessitate the issue of more money. Moreover, the volume of transactions T is also affected by changes in P . When prices rise or fall, the volume of business transactions also rises or falls. Further, the assumptions that the proportion M' to M is constant, has not been borne out by facts. Not only this, M and M' are not independent of T . An increase in the volume of business transactions requires an increase in the supply of money (M and M').

3. Constants Relate to Different Time. Prof. Halm criticises Fisher for multiplying M and V because M relates to a point of time and V to a period of time. The former is a static concept and the latter a dynamic. It is, therefore, technically inconsistent to multiply two non-comparable factors.

4. Fails to Measure Value of Money. Fisher's equation does not measure the purchasing power of money but only cash transactions, that is, the volume of business transactions of all kinds or what Fisher calls the volume of trade in the community during a year. But the purchasing power of money (or value of money) relates to transactions for the purchase of goods and services for consumption. Thus the quantity theory fails to measure the value of money.

5. Weak Theory. According to Crowther, the quantity theory is weak in many respects. *First*, it cannot explain 'why' there are fluctuations in the price level in the short run. *Second*, it gives undue importance to the price level as if changes in prices were the most critical and important phenomenon of the economic system. *Third*, it places a misleading emphasis on the quantity of money as the principal cause of changes in the price level during the trade cycle. Prices may not rise despite increase in the quantity of money during depression; and they may not decline with reduction in the quantity of money during boom. Further, low prices during depression are not caused by shortage of quantity of money, and high prices during prosperity are not caused by abundance of quantity of money. Thus, "the quantity theory is at best an imperfect guide to the causes of the trade cycle in the short period," according to Crowther.

6. Neglects Interest Rate. One of the main weaknesses of Fisher's quantity theory of money is that it neglects the role of the rate of interest as one of the causative factors between money and prices. Fisher's equation of exchange is related to an equilibrium situation in which rate of interest is independent of the quantity of money.

7. Unrealistic Assumptions. Keynes in his *General Theory* severely criticised the Fisherian quantity theory of money for its unrealistic assumptions. *First*, the quantity theory of money is unrealistic because it analyses the relation between M and P in the long run. Thus it neglects the short run factors which influence this relationship. *Second*, Fisher's equation holds good under the assumption of full employment. But Keynes regards full employment as a special situation. The general situation is one of the underemployment equilibrium. *Third*, Keynes does not believe that the relationship between the quantity of money and the price level is direct and proportional. Rather, it is an indirect one via the rate of interest and the level of output. According to Keynes, "So long as there is unemployment, output and employment will change in the same proportion as the quantity of money, and when there is full employment, prices will change in the same proportion as the quantity of money." Thus Keynes integrated the theory of output with value theory and monetary theory and criticised Fisher for dividing economics "into two compartments with no doors and windows between the theory of value and theory of money and prices."

8. V not Constant. Further, Keynes pointed out that when there is underemployment equilibrium, the velocity of circulation of money V is highly unstable and would change with changes in the stock of money or money income. Thus it was unrealistic for Fisher to assume V to be constant and independent of M .

9. Neglects Store of Value Function. Another weakness of the quantity theory of money is that it concentrates on the supply of money and assumes the demand for money to be constant. In other words, it neglects the store-of-value function of money and considers only the medium-of-exchange function of money. Thus the theory is one-sided.

10. Neglects Real Balance Effect. Don Patinkin has criticised Fisher for failure to make use of the real balance effect, that is, the real value of cash balances. A fall in the price level raises the real value of cash balances which leads to increased spending and hence to rise in income, output and employment in the economy. According to Patinkin, Fisher gives undue importance to the quantity of money and neglects the role of real money balances.

11. **Static.** Fisher's theory is static in nature because of its such unrealistic assumptions as long run, full employment, etc. It is, therefore, not applicable to a modern dynamic economy.
