

# **B.A PART 2**

## **MACRO ECONOMICS**

### **QUANTITY THEORY OF MONEY**

#### Quantity Theory of Money

**How is the general price level determined? Why does price level change? Classical or pre- Keynesian economists answered all these questions in terms of quantity theory of money.**

**In its simplest form, it states that the general price level (P) in an economy is directly dependent on the money supply (M);**

$$P = f(M)$$

**If M doubles, P will double. If M is reduced to half, P will decline by the same amount. This is the essence of the quantity theory of money. Though the theory was first stated in 1586, it received its full-fledged popularity at the hands of Irving Fisher in 1911. Later, an alternative approach was given by a group of Cambridge**

economists. However, the basic conclusion of these two theories is same price level varies directly with and proportionally to money supply.

*Assumptions:*

**The classical quantity theory of money is based on two fundamental assumptions: First is the operation of Say's Law of Market. Say's law states that, "Supply creates its own demand." This means that the sum of values of all goods produced is equivalent to the sum of values of all goods bought.**

**Thus, by definition, there cannot be deficiency of demand or under utilisation of resources. There will always be full employment in the economy. Second is the assumption of full employment that follows from the Say's Law.**

## 1. Quantity Theory of Money— Fisher's Version:

**Like the price of a commodity, value of money is determined by the supply of money and demand for money. In his theory of demand for money, Fisher attached emphasis on the use of money as a**

**medium of exchange. In other words, money is demanded for transaction purposes.**

**As a truism, in a given time period, total money expenditure is equal to the total value of goods traded in the economy. In other words, national expenditure, i.e., the value of money, must be identically equal to national income or total value of the goods for which money is exchanged, i.e.,**

$$MV = \sum p_i q_j = PT \dots(4.1)$$

**where**

**M = total stock of money in an economy;**

**V = velocity of circulation of money, that is, the number of times a unit of money changes its hand;**

**P<sub>i</sub> = prices of individual goods;**

**$\sum P = p_1 q_1 + p_2 q_2 + \dots + p_n q_n$  are the prices and outputs of all individual goods;**

**q<sub>i</sub> = quantities of individual goods transacted;**

**P = average or general price level or index of prices;**

**T = total volume of goods transacted or index of physical volume of transactions.**

**This equation is an identity that always holds true: It tells us that the total stock of money used for transactions must equal to the value of goods sold in the economy. In this equation, supply of money consists of nominal quantity of money multiplied by the velocity of circulation.**

**The average number of times that a unit of money changes its hand is called the velocity of circulation of money. The concept that**

provides the link between  $M$  and  $P \times T$  is also called the velocity of money.  $V$  is, thus, defined as total expenditure,  $P \times T$ , divided by the amount of money,  $M$ , i.e.,

$$V = P \times T / M$$

If  $P \times T$  in a year is Rs. 5 crore and the quantity of money is Rs. 1 crore then  $V = 5$ . This means that a unit of money is spent 5 times in buying goods and services in the economy. Thus, the supply of money or the total expenditure on national income is  $MV$ . On the other hand, total value of all transactions or money demand comprises  $P$  multiplied by  $T$ .

Fisher assumed fixity in  $V$  in the short run.  $V$  is determined by (i) the payment habits of the people, (ii) the nature of the banking system, and (iii) general factors (e.g., density of population, rapidity of transportation). As far as  $T$  is concerned, Say's Law suggests that it would remain fixed because of full employment.

With  $V$  and  $T$  constant, the above identity is modified as:

$$MV = PT \dots$$

$$\text{or } P = \overline{V} / \overline{T} \times M \dots$$

where the bar sign over the heads of ' $V$ ' and ' $T$ ' indicates that these two are fixed. It now follows that an increase in  $M$  leads to an equiproportional increase

The stock of money, thus, determines the price level. People hold money more than their need for transactions when money supply increases. Holding of money is useless. So they spend money. This additional expenditure, given full employment, raises the price level.

**Obviously, a rise in the price level means an increase in the value of transactions and, hence, demand for money rises. The process will continue until the equality between demand for and supply of money is reestablished.**

**Fisher's cash transaction version can be extended by including bank deposits in the definition of money supply. Now money supply comprises not only legal tender money,  $M$  but also bank money,  $M'$ . This bank money has also a stable velocity of circulation,  $V'$ .**

**Assuming  $V$ ,  $V'$ ,  $T$  and the ratio of  $M$  and  $M'$  constant, an increase in  $M$  and  $M'$ , say by 5 p.c., will cause  $P$  to rise also by the same percentage.**

**It is, however, not easier to measure the number of transactions  $T$ . Let us replace  $T$  by  $Y$ . Thus  $P \cdot Y$  is the nominal income or output where  $Y$  is the total income. Now the quantity theory equation becomes:  $PY = MV$ . This is known as the 'income version' of quantity theory of money**