

Quantity Theory of Money

Minor in Economics 6th Semester

Unit 1

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Quantity Theory of Money

- This was developed by the **Italian economist Davanzatti**
- It was further developed and popularised by an American economist **Irving Fisher** in his influential book "The Purchasing Power of Money" in 1911.

Assumptions of the Quantity Theory of Money:

1. The price level is a passive variable. It is the money supply which determines the price level.
2. People use money only as a medium of exchange, i.e., only for transaction purposes and not as idle cash balances. (Holding idle cash means foregoing the interest earnings that could be earned by keeping in savings deposits and investing in securities). Hence, people spend all the accumulated money either on consumption or on capital goods. **Thus, all the money supplied is in circulation.**
3. There is always full employment in the economy i.e. economy utilizes all resources fully.
4. The volume of goods and services, and the velocity of money remain constant in the short run.
5. The supply of M_1 (credit money), depends on M (money supply) and the ratio of M_1 to M remains the same.

Equation of Exchange: Given by Irving Fisher

- >> to explain the quantity theory of money as : $MV = PT$
- where,
- M = money supply (currencies and notes in the hands of people),
- V = transaction velocity of money. It is the average number of times that a currency passes through hands or changes hands during a certain period, especially a year,
- P = general price level i.e. average price of goods and services, and
- T = total volume of transacted goods and services.

Lets understand the Velocity of Money>>

- The velocity of money is a measurement of the rate at which money is exchanged in an economy.
- It is the number of times that money moves from one entity to another. The velocity of money also refers to how much a unit of currency is used in a given period of time.
- Simply put, it's the rate at which consumers and businesses in an economy collectively spend money.

Lets take a simple example to understand this Velocity of money >>

- Consider an economy consisting of two individuals, A and B, who each have \$100 of money in cash.
- Individual A buys a car from individual B for \$100. Now B has \$200 in cash money. Then B purchases a home from A for \$100 and B enlists A's help in adding new construction to their home and for their efforts, B pays A another \$100.
- Individual A now has \$200 in cash. Individual B then sells a car to A for \$100 and both A and B end up with \$100 in cash.
- **Thus, both parties in the economy have made transactions worth \$400, even though they only possessed \$100 each.**
- **Here the $V=2$, given by $\$400$ (in transactions) / $\$200$ (in money supply).**
- This multiplication in the value of goods and services exchanged is made possible through the velocity of money in an economy.

In general, this measure can be thought of as the turnover of the money supply for an entire economy.

- For this application, economists typically use GDP and either M1 or M2 for the money supply. Therefore, the velocity of money equation is written as GDP divided by money supply.
- **Velocity of Money = [GDP (or GNP) / Money Supply]**
- **Note: A high velocity of money indicates a bustling economy with strong economic activity, while a low velocity indicates a general reluctance to spend money.**

The Quantity Theory of Money States that >>

- > there is a direct and proportional relationship between money supply and price level and an inverse and proportional relationship between money supply and value of money ($1/p$).
- In terms of Fisher, "Any given percentage increase or decrease in money supply will lead to the same percentage increase or decrease in the general level of prices."

V and T are assumed constant in the equation. Why?

- Fisher assumed that the velocity of money depends on institutional and technological features (such as spending habits and the introduction of debit cards) in the economy which changes only gradually. So, the velocity of money remains constant in the short run.
- Similarly, T is constant because there is full employment in the economy and the economy utilizes all resources - labor and capital- fully.
- In addition, the output of an economy depends on the aggregate production function (technology) and the quantities of factors of production available. Thus, the output is constant in the short run because factors like technology, capital, and labor are constant in the short run.

Revised Version of Equation of Exchange

Fisher's revised the 'equation of exchange' to include bank or credit money because of their increasing importance in later periods is given as : .

$$MV + M1V1 = PT.$$

- Where,
- M1 is the credit or bank money and
- V1 is the velocity of the Credit Money. Note that the assumption of a constant ratio of M1 to M validates this form of 'equation of exchange' as well.

Thus, according to this Quantity Theory of Money >>

- Given the constant V and T , an increase or decrease in the money supply (M) leads to a direct and proportional increase or decrease in the price level P .
- For example, a 10 % increase in M leads to a 10% increase in the price level and a 10% decrease in the value of money ($1/P$).
- The assumption of constant V over a long period transforms the equation of exchange to the quantity theory of money. And, this theory states that the quantity of money solely determines the nominal income (spending) in the economy. Doubling the money supply (M) doubles nominal income (P_y)

Flaws or Criticisms of Quantity Theory of Money

1. Price is not a passive factor but it is active because price tends to encourage the producer to produce more.
2. Not only do people hold money as idle cash to meet their daily liquidity needs, but also for precautionary motives.
3. There is not always full employment in the economy but less than full employment.
4. The value of V may rise during the boom period and fall during the recession period. So, we cannot expect the value of V to be constant.
5. The price level and value of money may not change proportionately to the money supply.

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