

Quantity Theory, Inflation, and Money Demand
ECON 4673
Dr. Keen

Answers

1. *How would you expect money velocity to behave over the short-run business cycle?*

According to the Keynesian Theory of Money Demand, the velocity of money moves in the same direction as interest rates. Since interest rates tend to be procyclical, we would expect money velocity to rise during expansions and fall during recessions.

2. *If credit cards were made illegal by congressional legislation, what would happen to the velocity of money? Briefly explain.*

The velocity of Money (V) would fall because a higher level of the money supply (M^S) would be needed to carry out the same level of transactions ($P \times Y$); Thus, the velocity of money ($V = P \times Y / M^S$) would fall.

3. *What three motives for holding money did Keynes consider in his liquidity preference theory of the demand for money? On the basis of these motives, what variables did he think determined the demand for money?*

The three motives for holding money are: precautionary, speculative, and transactions motives. From these three motives, Keynes believed that money demand was positively related to income and negatively related to the nominal interest rate.

4. *Suppose a plot of the values of the M2 money supply and nominal GDP over 40 years shows that these two variables move very closely together. In particular, a plot of the ratio of nominal GDP to the M2 money supply yields a very stable and easy-to-predict value for that ratio. Based on this evidence, would you recommend that the monetary authority conduct monetary policy by focusing mostly on the M2 money supply rather than on nominal interest rates? Briefly explain.*

This stable relationship between M2 money supply and GDP implies that money demand is relatively stable. In this case, adjusting the M2 money supply would cause a similar change in nominal GDP, so the M2 money supply, as opposed to the interest rate, should be used as a primary instrument to conduct of monetary policy.

5. *Calculate what happens to nominal GDP if the velocity of money remains constant at 5 and the money supply increases from \$200 billion to \$300 billion.*

$$V = P \times Y / M^S$$

$$P \times Y = M^S \times V$$

$$P \times Y = 200 \times 5$$

$$P \times Y = \$1,000 \text{ billion}$$

$$V = P \times Y / M^S$$

$$P \times Y = M^S \times V$$

$$P \times Y = 300 \times 5$$

$$P \times Y = \$1,500 \text{ billion}$$

Nominal GDP increases from \$1 trillion to \$1.5 trillion.

6. *What happens to nominal GDP if the money supply grows by 20% but the velocity of money declines by 30%?*

$$\% \Delta (P \times Y) = \% \Delta M^S + \% \Delta V$$

$$\% \Delta (P \times Y) = 20\% - 30\%$$

$$\% \Delta (P \times Y) = -10\%$$

Nominal GDP declines by 10%.

7. *If the velocity of money and aggregate output remain constant at 5 and \$1,000 billion, respectively, what happens to the price level if the money supply declines from \$400 billion to \$300 billion?*

$$V = P \times Y / M^S$$

$$P \times Y = M^S \times V$$

$$P \times 1,000 = 400 \times 5$$

$$P = 2,000 / 1,000$$

$$P \times Y = 2$$

$$V = P \times Y / M^S$$

$$P \times Y = M^S \times V$$

$$P \times 1,000 = 300 \times 5$$

$$P = 1,500 / 1,000$$

$$P = 1.5$$

The price level declines from 2 to 1.5.