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MONEY AND THE LEVEL OF INCOME

OVERVIEW

1. Money supply and money demand make up the market for money. The supply of money is determined by the Federal Reserve. The quantity of money demanded depends on the interest rate. There is an inverse relationship between the quantity of money demanded and the interest rate. At high interest rates people want to hold interest earning assets, and the amount of money held in cash and checkable deposits will decrease. The intersection of the demand for money and supply of money will determine the interest rate.
2. As the money supply is increased, the equilibrium interest rate will fall. If the money supply is decreased, the interest rate will rise. If there is an increase in the demand for money, the interest rate will rise. If the demand for money falls, the interest rate will fall too.
3. Money and income are two different concepts. By money, the economist means currency in circulation and checkable deposits. By income, the economist means real gross domestic product.
4. Money can be used to affect the level of income. If the money supply is increased, the interest rate will fall. The fall in the interest rate will cause more investment, which causes aggregate demand and the level of income to rise. If the money supply is decreased, the interest rate will rise. The rise in the interest rate will cause less investment, which causes aggregate demand and the level of income to fall.
5. Monetary policy is the use of monetary tools by the Federal Reserve to influence the money supply and interest rates in order to stabilize the business cycle. The monetary tools are the reserve requirement, the discount rate, and open market operations.
6. Monetary policy is a flexible tool and can be easily changed. But the link between money and the level of income is not direct. Thus the exact impact that a given monetary policy will have on the level of income is hard to predict.

MATCHING

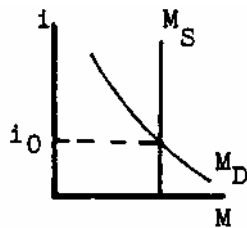
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|-------|----|---------------------------|----|---|
| _____ | 1. | money demand | a. | change in the money supply affects the interest rate which affects investment which affects income |
| _____ | 2. | money supply | b. | the use of changes in the money supply to stabilize the economy |
| _____ | 3. | link from money to income | c. | currency in circulation plus checkable deposits |
| _____ | 4. | monetary policy | d. | the amount of money people are willing to hold in currency and checkable deposits at each interest rate |

TRUE-FALSE

- _____ 1. An increase in the money supply will make the interest rate fall.
- _____ 2. An increase in the money supply will lead to less investment.
- _____ 3. An increase in the money supply will make the level of income fall.
- _____ 4. Monetary policy is more flexible than fiscal policy.
- _____ 5. The Fed rarely interferes in the economy by changing the money supply.

PROBLEMS

1. a. What does the following graph indicate happens to the interest rate when the money supply increases?

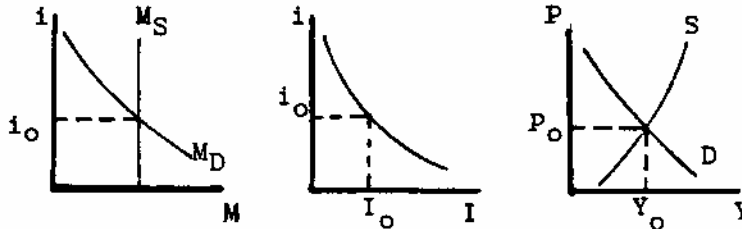


b. What will happen to the interest rate if the money supply decreases?

2. a. Suppose that the money supply increases. What will happen to the interest rate?
 _____ What will be the impact on investment? _____
 _____ What will be the impact on aggregate demand?

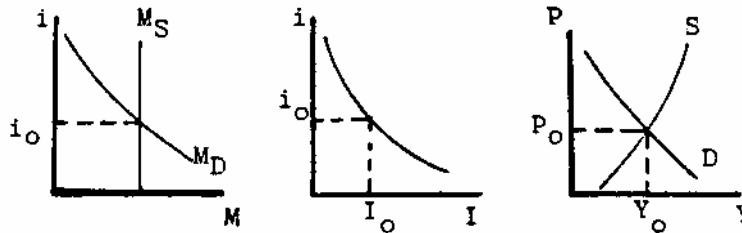
What will happen to the level of income? _____
 What will happen to the price level? _____

b. Illustrate your answer to 2a with the following graphs



c. Suppose that the money supply decreases. What will happen to the interest rate?
 _____ What will be the impact on investment? _____ What will be the
 impact on aggregate demand? _____ What will happen to the level of income?
 _____ What will happen to the price level? _____

d. Illustrate your answer to 2c with the following graphs.



IN THE NEWS

1. For many years, the Federal Reserve judged the success of its policy by whether interest rates were at desired levels. If interest rates were too high, the Fed increased excess reserves and thus the money supply. From October of 1979 until recently, the Fed decided to focus on the size of the money supply rather than interest rates as a target measure.

a. How do changes in excess reserves affect interest rates? _____

b. Does the Fed have better control of the money supply or interest rates?

2. The Fed can use monetary policy to affect the level of income. But sometimes monetary policy does not work as well as desired. It is sometimes said that increasing the money supply is like pushing on a string.

a. Suppose that the Fed increases excess reserves during a recession. Will the excess reserves necessarily be loaned out and increase the money supply?

b. Suppose that the money supply does not increase. What happens to the interest rate?

c. What impact will the excess reserves have on investment? _____

d. What happens to the level of income? _____

e. Will monetary policy necessarily increase the level of income during a recession?

3. One of the advantages claimed for monetary policy is that politics does not determine who gains and who loses by stabilization policy. With fiscal policy, who gains by the policy and who loses is decided by Congress. With monetary policy, these decisions are determined by the money market.

a. Does the reliance on the market to determine who gains and who loses seem like an advantage or disadvantage for you personally? Why? _____

b. If the money market determines who gains, who do you think that will be?

c. Who gains when fiscal policy is made by Congress? _____

PRACTICE TEST

Circle the correct answer.

1. Money supply and money demand together determine:
 - a. the price level.
 - b. the interest rate.
 - c. the level of income.
 - d. the rate of inflation.
2. A decrease in the money supply causes:
 - a. interest rates to fall, investment to increase, and income to rise.
 - b. interest rates to rise, investment to decrease, and income to fall.
 - c. interest rates to rise, investment to increase, and income to fall.
 - d. interest rates to fall, investment to decrease, and income to rise.
3. The money supply:
 - a. is determined by the Federal Reserve.
 - b. does not depend on the interest rate.
 - c. is a vertical curve.
 - d. all of the above.
4. During a recession, the appropriate monetary policy is to:
 - a. increase the reserve requirement, increase the discount rate, and buy in the open market.
 - b. decrease the reserve requirement, increase the discount rate, and sell in the open market.
 - c. decrease the reserve requirement, decrease the discount rate, and buy in the open market.
 - d. increase the reserve requirement, increase the discount rate, and sell in the open market.
5. When the Fed acts to stabilize the business cycle, it is using:
 - a. fiscal policy.
 - b. incomes policy.
 - c. monetary policy.
 - d. inflation policy.

ANSWERS

Matching

1. d
2. c
3. a
4. b

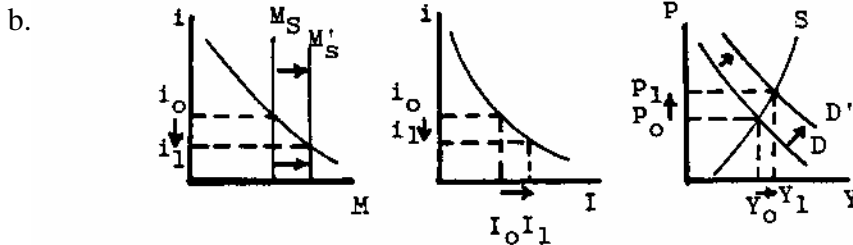
True-False

1. T
2. F
3. F

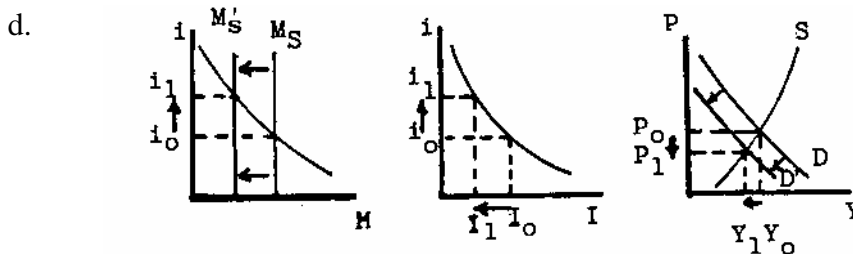
4. T
5. F

Problems

1.
 - a. The increase in the money supply will cause the interest rate to fall.
 - b. The decrease in the money supply will cause the interest rate to rise.
2.
 - a. The interest rate falls; investment rises; aggregate demand rises; the level of income rises; and the price level rises.



- c. The interest rate rises; investment falls; aggregate demand falls; the level of income falls; and the price level falls.



In the News

1.
 - a. When excess reserves are increased, the money supply increases through the money multiplier process. The increase in the money supply will cause the interest rates to fall in the money market.
 - b. Since control of the money supply requires knowing the money multiplier, and control of interest rates requires knowing the money multiplier and the shape of money demand, the Fed is better able to control the money supply.
2.
 - a. In a recession, banks may be very conservative in deciding whether or not to loan money. Also borrowers may be reluctant to borrow money. The effect of the money multiplier will be substantially reduced so that the money supply does not increase as much as expected.

- b. If the money supply does not change, then the Fed will have no effect on the interest rate.
 - c. If the interest rate does not change, there is little reason to expect investment to change. Even if the interest rate does decrease, business may be reluctant to borrow when the demand for output is low. So there may be little investment demand even at a low interest rate.
 - d. If investment does not increase, the monetary policy will have no impact on the level of income.
 - e. In a recession, monetary policy may not be an effective way to increase the level of income. This is because the excess reserves may not be loaned out and will not become part of the money supply. Any decrease in the interest rate will not cause investment to rise as much as expected. Thus the increase in excess reserves may have little impact on the level of income.
- 3.
- a. Whether or not this is an advantage depends on whether or not you are likely to gain by the market having control or by Congress having control.
 - b. The gainers in the money market are those that can afford to pay the interest charged. If you are relatively poor, you are not likely to get loans. If you are wealthy and have many assets, you are more likely to get loans. So the wealthy are more likely to gain. But recognize that when the Fed acts during an inflation, the wealthy are more likely to lose.
 - c. It is somewhat hard to predict. It may be the wealthy, if the wealthy can influence Congress. Who will gain with the political process is more uncertain than if a market is allowed to do the allocation.

Practice Test

1.b., 2.b., 3.d., 4.c., 5.c.