

Exercise Session 6

1. A central bank's setting (or altering) of the money supply is known as

- a. open-market operation.
- b. interest rate policy.
- c. monetary policy.**
- d. employment policy.

2. If the Federal Open Market Committee decides to increase the money supply, then the Federal Reserve

- a. creates dollars and uses them to purchase government bonds from the public.**
- b. sells government bonds from its portfolio to the public.
- c. creates dollars and uses them to purchase various types of stocks and bonds from the public.
- d. sells various types of stocks and bonds from its portfolio to the public.

3. If the discount rate is lowered, banks borrow

- a. less from the Fed so reserves increase.
- b. less from the Fed so reserves decrease.
- c. more from the Fed so reserves increase.**
- d. more from the Fed so reserves decrease.

4. If P denotes the price of goods and services measured in terms of money, then

- a. $1/P$ represents the value of money measured in terms of goods and services.
- b. P can be regarded as the "overall price level."
- c. an increase in the value of money is associated with a decrease in P .
- d. All of the above are correct.**

5. When the money market is drawn with the value of money on the vertical axis, as the price level increases, the value of money

- a. increases, so the quantity of money demanded increases.
- b. increases, so the quantity of money demanded decreases.
- c. decreases, so the quantity of money demanded decreases.
- d. decreases, so the quantity of money demanded increases.**

6. Monetary neutrality means that a change in the money supply

a. does not change real GDP. Most economists think this is a good description of the economy in the short run and in the long run.

b. does not change real GDP. Most economists think this is a good description of the economy in the long run but not the short run.

c. does change real GDP. Most economists think this is a good description of the economy in the short-run and the long run.

d. does change real GDP. Most economists think this is a good description of the economy in the long run but not the short run.

7. According to the quantity equation, the price level would change less than proportionately with a rise in the money supply if there were also

a. either a rise in output or a rise in the rate at which money changes hands.

b. either a rise in output or a fall in the rate at which money changes hands.

c. either a fall in output or a rise in the rate at which money changes hands.

d. either a fall in output or a fall in the rate at which money changes hands.

8. One year a country has negative net exports. The next year it still has negative net exports and imports have risen more than exports.

a. its trade surplus fell.

b. its trade surplus rose.

c. its trade deficit fell.

d. its trade deficit rose.

9. Suppose that real interest rates in the U.S. rise relative to real interest rates in other countries. This increase would make foreigners

- a. more willing to purchase U.S. bonds, so U.S. net capital outflow would fall.
- b. more willing to purchase U.S. bonds, so U.S. net capital outflow would rise.
- c. less willing to purchase U.S. bonds, so U.S. net capital outflow would fall.
- d. less willing to purchase U.S. bonds, so U.S. net capital outflow would rise.

True/False Questions:

1. If banks hold any amount of their deposits in reserve, then they do not have the ability to influence the money supply. (F)
2. The Federal Reserve can alter the size of the money supply by changing reserves or changing reserve requirements. (T)
3. The money demand curve is downward sloping because as the value of money falls people desire to hold a larger quantity of money. (T)
4. The classical dichotomy is useful for analyzing the economy because in the long run nominal variables are heavily influenced by developments in the monetary system, and real variables are not. (T)
5. According to the Fisher effect, if inflation rises then the nominal interest rate rises. (T)
6. Net capital outflow is the purchase of domestic assets by foreign residents minus the purchase of foreign assets by domestic residents. (F)
7. Other things the same, an increase in foreign prices raises the real exchange rate. (F)

Answer the following questions:

- 1) Suppose that the reserve requirement is 10 % and that banks do not hold any excess reserves.
 - a. If the Fed sells \$1 million of government bonds, what is the effect on the economy's reserves and money supply?

Answer: With a required reserve ratio of 10% and no excess reserves, the money multiplier is $1/0.10 = 10$. If the Fed sells \$1 million of government bonds, reserves will decline by \$1 million and the money supply will contract by $10 \times \$1 \text{ million} = \10 million .

b. Now suppose the Fed lowers the reserve requirement to 5 %, but banks choose to hold another 5 % of deposits as excess reserves. Why might banks do so? What is the overall change in the money multiplier and the money supply as a result of these actions?

Answer: Banks might wish to hold excess reserves if they need to hold the reserves for their day-to-day operations, such as paying other banks for customers' transactions, making change, cashing paychecks, and so on. If banks increase excess reserves such that there is no overall change in the total reserve ratio, then the money multiplier does not change and there is no effect on the money supply.

2) List and describe six costs of inflation.

Answer: Six costs of inflation are: (1) **shoeleather costs**; (2) **menu costs**; (3) **relative-price variability and the misallocation of resources**; (4) **inflation-induced tax distortions**; (5) **confusion and inconvenience**; and (6) **arbitrary redistributions of wealth**. Shoeleather costs arise because inflation causes people to spend resources going to the bank more often. Menu costs occur when people spend resources changing their posted prices. Relative-price variability occurs because as general prices rise, a fixed dollar price translates into a declining relative price, so the relative prices of goods are constantly changing, causing a misallocation of resources. The combination of inflation and taxation causes distortions in incentives because people are taxed on their nominal capital gains and interest income instead of their real income from these sources. Inflation causes confusion and inconvenience because it reduces money's ability to function as a unit of account. Unexpected inflation redistributes wealth between borrowers and lenders.

3) Explain how an increase in the price level affects the real value of money.

Answer: An increase in the price level reduces the real value of money because each dollar now buys a smaller quantity of goods and services.

4) According to the Fisher effect, how does an increase in the inflation rate affect the real interest rate and the nominal interest rate?

Answer: According to the Fisher effect, an increase in the inflation rate raises the nominal interest rate by the same amount that the inflation rate increases, with no effect on the real interest rate.

5) Suppose that this year's money supply is \$500 billion, nominal GDP is \$10 trillion, and real GDP is \$5 trillion.

a. What is the price level? What is the velocity of money?

Answer: (All amounts in billions) Nominal GDP = $P \times Y = \$10,000$ and $Y = \text{real GDP} = \$5,000$, so $P = (P \times Y) / Y = \$10,000 / \$5,000 = 2$.

Because $M \times V = P \times Y$, then $V = (P \times Y) / M = \$10,000 / \$500 = 20$.

b. Suppose that velocity is constant and the economy's output of goods and services rises by 5% each year. What will happen to nominal GDP and the price level next year if the Fed keeps the money supply constant?

Answer: If M and V are unchanged and Y rises by 5%, then because $M \times V = P \times Y$, P must fall by 5%. As a result, nominal GDP is unchanged.

c. What money supply should the Fed set next year if it wants to keep the price level stable?

Answer: To keep the price level stable, the Fed must increase the money supply by 5%, matching the increase in real GDP. Then, because velocity is unchanged, the price level will be stable.

d. What money supply should the Fed set next year if it wants inflation of 10%?

Answer: If the Fed wants inflation to be 10%, it will need to increase the money supply 15%. Thus $M \times V$ will rise 15%, causing $P \times Y$ to rise 15%, with a 10% increase in prices and a 5% rise in real GDP.

6) Define the nominal exchange rate and real exchange rate and explain how they are related. If the nominal exchange rate goes from 100 to 120 yen per dollar, has the dollar appreciated or depreciated?

Answer: The nominal exchange rate is the rate at which a person can trade the currency of one country for the currency of another. The real exchange rate is the rate at which a person can trade the goods and services of one country for the goods and services of another. They are related through the expression: real exchange rate equals nominal exchange rate times domestic price divided by foreign price.

If the nominal exchange rate goes from 100 to 120 yen per dollar, the dollar has appreciated because a dollar now buys more yen.

7) If a Japanese car costs 500,000 yen, a similar American car costs \$10,000, and a dollar can buy 100 yen, what are the nominal and real exchange rates?

Answer: If a dollar can buy 100 yen, the nominal exchange rate is 100 yen per dollar. The real exchange rate equals the nominal exchange rate times the domestic price divided by the foreign price, which = 100 yen per dollar \times (\$10,000 per American car / by 500,000) yen per Japanese car = **two Japanese cars per American car.**

8) Describe the difference between foreign direct investment and foreign portfolio investment. Who is more likely to engage in foreign direct investment—a corporation or an individual investor? Who is more likely to engage in foreign portfolio investment?

Answer: Foreign direct investment requires actively managing an investment, for example, by opening a retail store in a foreign country. Foreign portfolio investment is passive, for example, buying corporate stock in a retail chain in a foreign country. As a result, a corporation is more likely to engage in foreign direct investment, while an individual investor is more likely to engage in foreign portfolio investment.