Part- 3 Chapter- 13

Aplia Homework: Monetary Policy: Conventional and Unconventional

**1. The organization of the Fed**

Complete the following statements to demonstrate your understanding of the relationships among the different structures of the Federal Reserve.

The Board of Governors of the Federal Reserve is in charge of setting and overseeing monetary policy and is headed by the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Monetary policy is supposed to be \_\_\_\_\_\_\_\_ Congress and the president. This goal is hindered by the fact that the chairman is \_\_\_\_\_\_\_\_.

Because Congress initially intended to create a decentralized banking system, there are also smaller branches of the Federal Reserve known as district banks.

All presidents of the district banks take turns serving as members of the Federal Open Market Committee (FOMC) except for the president of the Federal Reserve Bank of \_\_\_\_\_\_\_, who is a permanent member.

**2. Working through an open-market operation**

Assume that the following balance sheet portrays the state of the banking system. The banks currently have no excess reserves.



What is the required reserve ratio?

 5%

 10%

 25%

 40%

Suppose that the Federal Reserve (the “Fed”) buys $10 million of bonds from a bond dealer, who immediately deposits the funds in her checking account.

What is the initial impact of this transaction?

 Checkable deposits rise by $10 million, and the banking system's holdings of securities rise by $10 million.

 The banking system's holdings of securities fall by $10 million, and the banking system's total reserves rise by $10 million.

 The banking system's holdings of securities rise by $10 million, and the banking system's total reserves fall by $10 million.

 Checkable deposits rise by $10 million, and the banking system's total reserves rise by $10 million.

As a result of the Fed's purchase of $10 million of securities, checkable deposits in the banking system can potentially \_\_\_\_\_\_\_ by as much as \_\_\_\_\_\_\_.

**3. The reserve requirement, open market operations, and the money supply**

Assume that banks do not hold excess reserves and that households do not hold currency, so the only form of money is checkable deposits. To simplify the analysis, suppose the banking system has total reserves of $500.

Determine the simple money multiplier and the money supply for each reserve requirement listed in the following table.

| **Reserve Requirement** |  | **Simple Money Multiplier** | **Money Supply** |
| --- | --- | --- | --- |
| ***(Percent)*** |  | ***(Dollars)*** |
| 5 |  | **\_\_\_\_\_**  | \_\_\_\_\_ |
| 10 |  | **\_\_\_\_\_**  | **\_\_\_\_\_**  |

A lower reserve requirement is associated with a \_\_\_\_\_\_ money supply.

Now, suppose that, rather than immediately lending out all excess reserves, banks begin holding some excess reserves in response to uncertain economic conditions. Specifically, banks increase the percentage of deposits held as reserves from 10% to 25%. This increase in the reserve ratio causes the multiplier to\_\_\_\_\_\_ to \_\_\_\_\_\_. Under these conditions, the Fed would need to \_\_\_\_\_\_ \_\_\_\_\_\_ worth of U.S. government bonds in order to increase the money supply by $200.

Which of the following statements help to explain why, in the real world, the Fed cannot precisely control the money supply? Check all that apply.

 The Fed cannot prevent banks from lending out required reserves.

 The Fed cannot control the amount of money that households choose to hold as currency.

 The Fed cannot control whether and to what extent banks hold excess reserves.

**4. Bond prices and interest yields**

Consider a bond without expiration date that makes a fixed interest payment of $90 per year.

Complete the following table by calculating the interest rate on the bond at different sale prices. (**Hint**: The effective interest rate on a bond is a ratio of the interest payment to the sale price of the bond times 100.)

| **Price of Bond** | **Interest Rate** |
| --- | --- |
| ***(Dollars)*** | ***(Percent)*** |
| 1,200 | \_\_\_\_ |
| 1,000 | \_\_\_\_ |
| 750 | \_\_\_\_ |
| 600 | \_\_\_\_ |

Use the blue points (circle symbol) and the preceding table to plot the relationship between bond prices and interest rates on the following graph.

Note: Plot your points in the order in which you would like them connected. Line segments will connect the points automatically.

The line showing the relationship between bond prices and interest rates has a \_\_\_\_\_\_\_\_ slope; in other words, there is \_\_\_\_\_\_\_\_\_ relationship between bond prices and interest rates.

**5. Interest rate spread**

Suppose that a 5-year Treasury bond pays an annual rate of return of 1.3%, and a 5-year bond of the fictional company Risky Investment Inc. pays an annual rate of return of 7.1%.

The risk premium on the Risky Investment bond is \_\_\_\_\_ percentage points.

Consider a decrease in the annual rate of return on the Risky Investment bond from 7.1 percent to 5.5 percent. Such a change would \_\_\_\_\_\_\_\_ the interest rate spread on the Risky Investment bond over Treasuries to **\_\_\_\_\_\_\_**.

Which of the following explains the decrease in the annual rate of return on the Risky Investment bond?

 The expected default rate on the Treasury bond has decreased.

 The expected default rate on the Risky Investment bond has decreased.

 The expected default rate on the Risky Investment bond has increased.

 The expected default rate on the Treasury bond has increased.

**6.** **The discount rate and the federal funds rate**

The discount rate is the interest rate on loans that the Federal Reserve makes to banks. Banks occasionally borrow from the Federal Reserve when they find themselves short on reserves. A lower discount rate \_\_\_\_\_\_\_\_\_ banks' incentive to borrow reserves from the Federal Reserve, thereby \_\_\_\_\_\_\_ the quantity of reserves in the banking system and causing the money supply to \_\_\_\_\_\_.

The federal funds rate is the interest rate that banks charge one another for short-term (typically overnight) loans. When the Federal Reserve uses open-market operations to buy government bonds, the quantity of reserves in the banking system \_\_\_\_\_\_\_\_, banks' demand for borrowed reserves \_\_\_\_\_\_\_\_, and the federal funds rate \_\_\_\_\_\_\_\_.

**7. The Federal Reserve and the money supply**

Suppose the money supply (as measured by checkable deposits) is currently $650 billion. The required reserve ratio is 20%. Banks hold $130 billion in reserves, so there are no excess reserves.

The Federal Reserve (“the Fed”) wants to decrease the money supply by $10 billion, to $640 billion. It could do this through open-market operations or by changing the required reserve ratio. Assume for this question that you can use the simple money multiplier.

If the Fed wants to decrease the money supply using open-market operations, it should \_\_\_\_\_\_\_ \_\_\_\_\_\_\_ billion worth of U.S. government bonds.

If the Fed wants to decrease the money supply by adjusting the required reserve ratio, it should \_\_\_\_\_\_\_\_ the required reserve ratio.

**8. Quantitative easing**

True or False: The government securities purchased by the Federal Reserve (“the Fed”) in normal open-market operations have a longer term than the government bonds the Fed purchases for quantitative easing.

 True

 False

The purchase of Treasury bills by the Federal Reserve is an aspect of \_\_\_\_\_\_\_\_\_ monetary policy, the expansionary version of which the Fed can use when the federal funds rate is \_\_\_\_\_\_\_\_ zero.

**9. The price level and the market for bank reserves**

The following graph shows the market for bank reserves in a hypothetical economy. Suppose the price level decreases from 80 to 60.

Shift the appropriate curve on the following graph to show the impact of a decrease in the overall price level.

Note: Select and drag one or both of the curves to the desired position. Curves will snap into position, so if you try to move a curve and it snaps back to its original position, just drag it a little farther.

*Analyze the effects of this change in the price level, then fill in the following table with these results.*

|  | **Effect** |
| --- | --- |
| Quantity of bank reserves supplied | **\_\_\_\_\_\_\_\_\_**  |
| Aggregate demand curve | **\_\_\_\_\_\_\_\_\_**  |

**10. Monetary policy and the market for bank reserves**

Suppose the federal funds rate is not close to zero, risk spreads are roughly constant so that different interest rates rise and fall together, and banks are not holding many excess reserves. Federal Reserve open-market operations are done mostly in Treasury bills. Such economic conditions are referred to as “normal times.”

Suppose the Federal Reserve implements an expansionary monetary policy by \_\_\_\_\_\_\_ bonds through open-market operations.

The following graph shows the demand and supply of bank reserves.

On the graph, show the effect of the Fed's expansionary monetary policy by shifting one or both of the curves.

Note: Select and drag one or both of the curves to the desired position. Curves will snap into position, so if you try to move a curve and it snaps back to its original position, just drag it a little farther.

As a result of the Fed's expansionary policy, the interest rate \_\_\_\_\_\_\_ to \_\_\_\_\_\_.

Investment is one component of total spending. The following graph shows the demand for investment.

Use the information from the previous graph to show the short-run effect of the Fed's expansionary monetary policy by shifting the demand curve or moving the point along the curve on the following graph.

Hint: Be sure the new interest rate corresponds to the interest rate you found in the previous graph.

As a result of the Fed's expansionary policy, the quantity of investment demanded \_\_\_\_\_\_ to \_\_\_ billion.

The following graph shows the aggregate demand (AD) curve in the goods and services market before the Fed implements its expansionary policy. Suppose that the multiplier in this economy is 4.

On the following graph, show the effect of the change in investment demand on the AD curve once the multiplier process has run its course. Use the green curve (triangle symbol) to plot the new AD curve at price levels of 40 and 140.

Hint: Use the new quantity of investment demanded you found in the Market for Investment and the multiplier to determine the exact change in aggregate demand at both price levels. Assume that this effect is independent of the price level, that is, the AD curve has a parallel shift.

An expansionary monetary policy causes the quantity of bank reserves in the economy to \_\_\_\_\_\_\_, which drives interest rates \_\_\_\_\_\_. As a result, businesses invest \_\_\_\_\_\_\_ in capital improvements such as new factories and equipment. This leads to \_\_\_\_\_\_\_ in aggregate demand, the extent of which is determined by the simple spending multiplier.