

CHAPTER

15

The Federal Reserve System and Monetary Policy

Why It's Important

Who determines how much money exists in the United States? This chapter will explain who's in charge of the money supply and how they decide what amount to put into circulation.



To learn more about the money supply, view the **Economics &**

You Chapter 22 video lesson: **The Federal Reserve System and Monetary Policy**

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Chapter Overview Visit the *Economics Today and Tomorrow* Web site at ett.glencoe.com and click on **Chapter 15—Chapter Overviews** to preview chapter information.



CONTENTS

Organization and Functions of the Federal Reserve System

COVER STORY

THE WASHINGTON POST, FEBRUARY 10, 1999

The Federal Reserve cannot put a dollar in anyone's pocket, provide jobs for very many people, or buy more than a tiny amount of goods and services that the nation produces. But the 86-year-old government bank can have an enormous impact on how you spend, invest, or borrow money. . . . That is because the Fed . . . is in charge of the nation's monetary policy, taking actions almost daily to help determine how much money is available, how easily it may be borrowed, and how costly it will be.



READER'S GUIDE

Terms to Know

- Fed
- monetary policy
- Federal Open Market Committee
- check clearing

Reading Objectives

1. How is the Federal Reserve System in the United States organized?
2. What are the functions of the Fed?

Congress created the Federal Reserve System in 1913 as the central banking organization in the United States. Its major purpose was to end the periodic financial panics (recessions) that had occurred during the 1800s and into the early 1900s. Over the years, many other responsibilities have been added to the Federal Reserve System, or **Fed**, as it is called. In this section, you'll learn how the Fed is organized to carry out its functions.

Fed: the Federal Reserve System created by Congress in 1913 as the nation's central banking organization

Organization of the Federal Reserve System

The Federal Reserve System is made up of a Board of Governors assisted by the Federal Advisory Council, the Federal Open Market Committee, 12 Federal Reserve district banks, 25 branch banks, and about 4,000 member banks. As its name states, the Fed is a system, or network, of banks. Power is not concentrated in a single central bank but is shared by the governing board and the 12 district banks. **See Figure 15.1.**

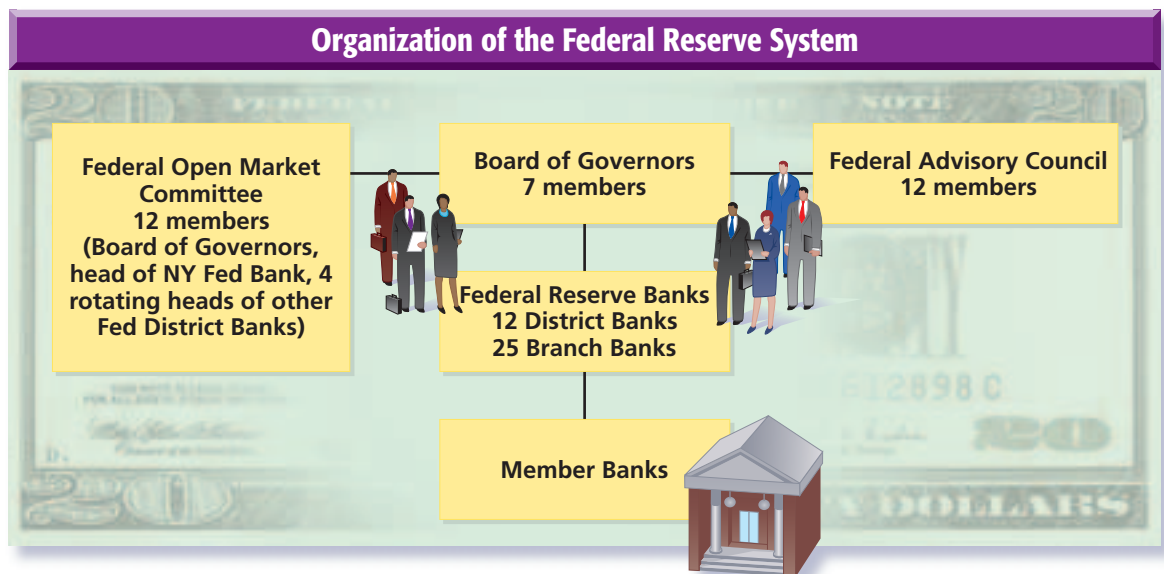
monetary policy: policy that involves changing the rate of growth of the supply of money in circulation in order to affect the cost and availability of credit

The Fed is responsible for monetary policy in the United States. **Monetary policy** involves changing the rate of growth of the supply of money in circulation in order to affect the amount of credit, thereby affecting business activity in the economy.

Board of Governors The *Board of Governors* directs the operations of the Fed. It supervises the 12 Federal Reserve district banks and regulates certain activities of member banks and all other depository institutions.

FIGURE 15.1

Organization of the Fed Since the change in banking regulations in the early 1980s, nonmember banks are also subject to control by the Federal Reserve System.



The First Central Bank

The Bank of Amsterdam was established in Holland in 1609. At that time, Amsterdam was a center of world trade. More than 340 different kinds of silver coins and about 500 types of gold coins circulated throughout the city. Dutch merchants had little idea of how much these coins were worth, so the Bank of Amsterdam

was set up under a charter from the city to standardize the currency.

The Bank of Amsterdam operated as Holland's central bank for more than 200 years. After making a series of bad loans, however, it failed and went out of business in 1819—almost 100 years *before* America's central bank was founded. ■

The 7 full-time members of the Board of Governors are appointed by the President of the United States with the approval of the Senate. The President chooses one member as a chairperson. Each member of the board serves for 14 years. The terms are arranged so that an opening occurs every 2 years. Members cannot be reappointed, and their decisions are not subject to the approval of the President or Congress. Their length of term, manner of selection, and independence in working frees members from political pressures.

Federal Advisory Council The Board of Governors is assisted by the *Federal Advisory Council (FAC)*. It is made up of 12 members elected by the directors of each Federal Reserve district bank. The FAC meets at least 4 times each year and reports to the Board of Governors on general business conditions in the nation.

Federal Open Market Committee The 12 voting members on the **Federal Open Market Committee (FOMC)** meet 8 times a year to decide the course of action that the Fed should take to control the money supply. The FOMC determines such economic decisions as whether to raise or lower interest rates. It is this committee's actions that have a resounding effect throughout the financial world.

Federal Open Market Committee: 12-member committee in the Federal Reserve System that meets 8 times a year to decide the course of action that the Fed should take to control the money supply



Student Web Activity Visit the *Economics Today and Tomorrow* Web site at ett.glencoe.com and click on **Chapter 15—Student Web Activities** to see how the Federal Reserve System functions.

CLICK HERE 

Federal Reserve Banks As shown in **Figure 15.2**, the nation is divided into 12 Federal Reserve districts, with each district having a Fed district bank. Each of the 12 district banks is set up as a corporation owned by its member banks. A 9-person board of directors—made up of bankers and businesspeople—supervises each Federal Reserve district bank.

The system also includes 25 Federal Reserve branch banks (also shown in **Figure 15.2**). These smaller banks act as branch offices and aid the district banks in carrying out their duties.

FIGURE 15.2

The Federal Reserve System The 12 Federal Reserve district banks that serve the nation’s banks are distributed throughout the country. Trillions of dollars a year pass through the Fed as it processes billions of checks. Note that the Fed is headquartered in Washington, D.C. *In what cities are the 12 Federal Reserve district banks located?*

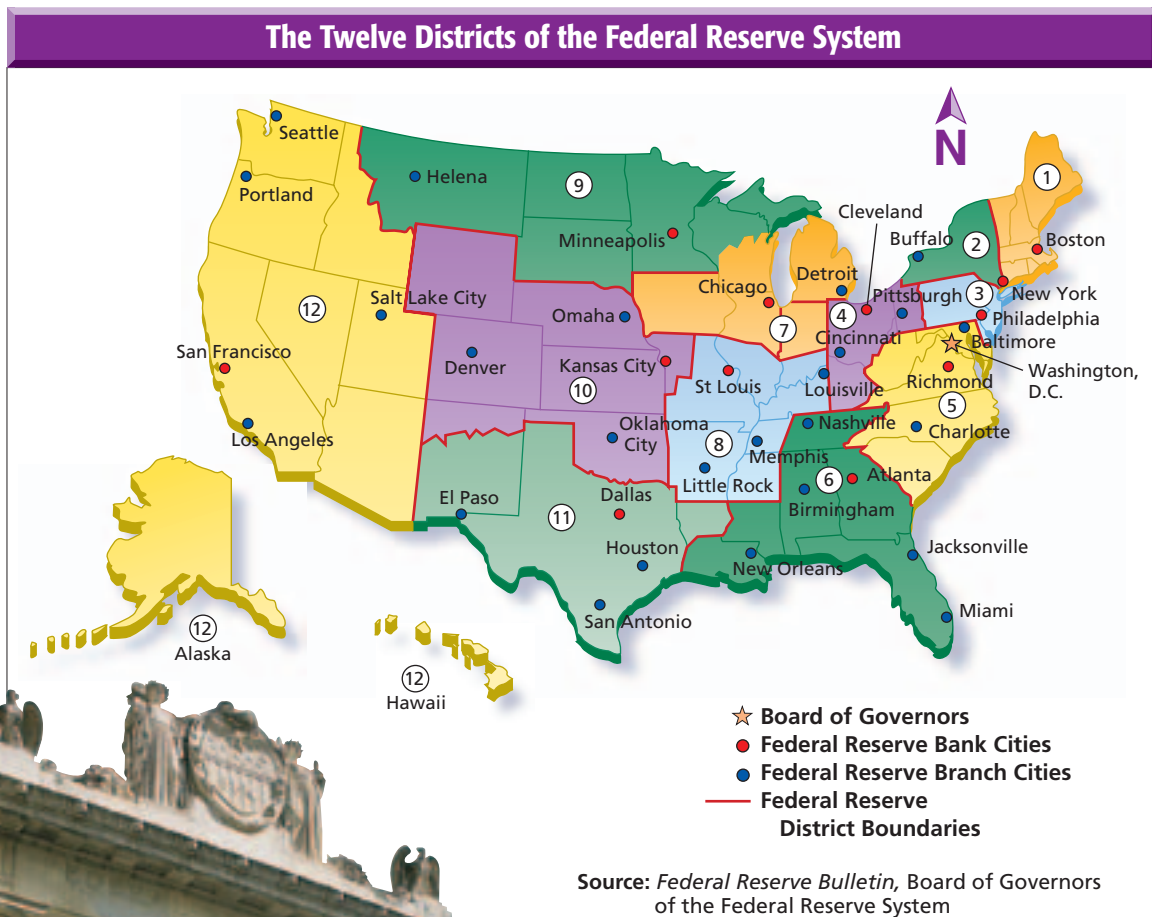
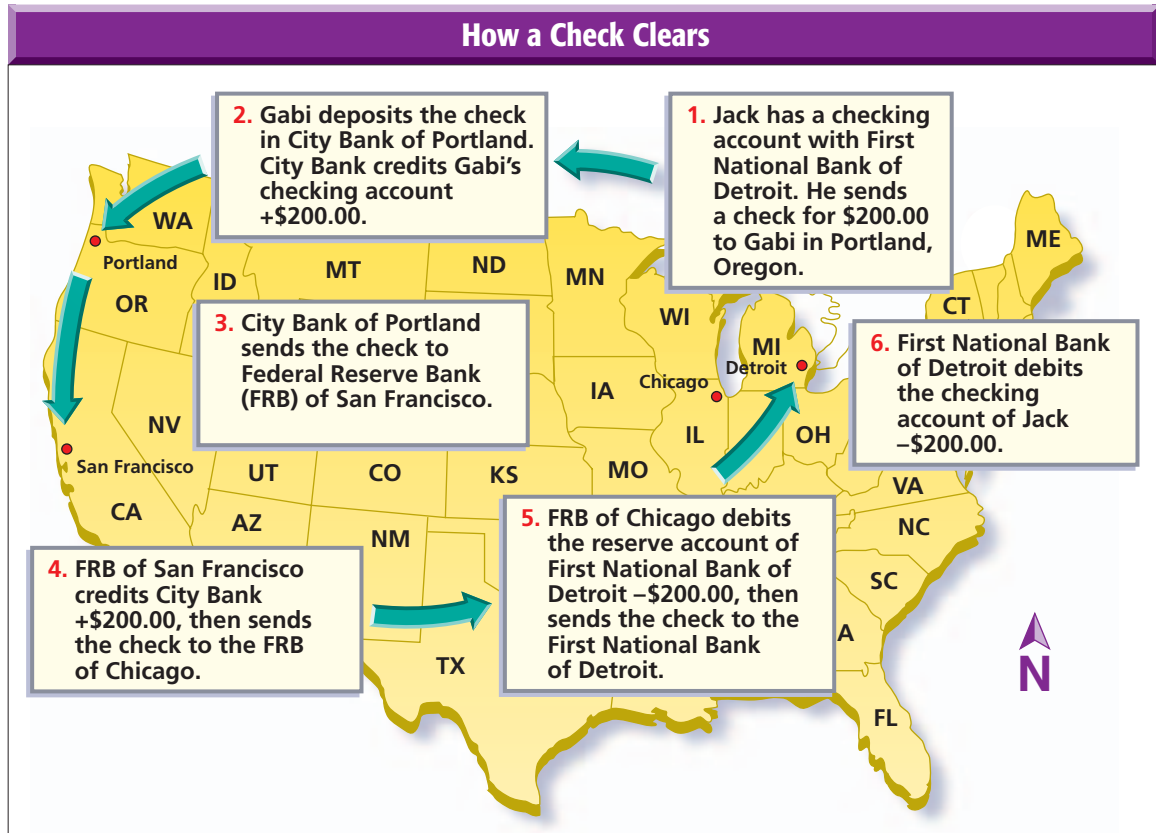


FIGURE 15.3

Check Clearing All depository institutions may use the Federal Reserve's check-clearing system. The reserve accounts mentioned in the diagram refer to a bank's account in its Federal Reserve district bank.



Member Banks All national banks—those chartered by the federal government—are required to become members of the Federal Reserve System. Banks chartered by the states may join if they choose to do so. To become a member bank, a national or state bank buys stock in its district's Federal Reserve bank.

In the past, only member banks were required to meet Fed regulations, such as keeping a certain percentage of their total deposits as cash in their own vaults or as deposits in their Federal Reserve district bank. Now all institutions that accept deposits from customers must keep reserves in their Fed district bank. See **Figure 15.3**. Fed services are also available to all depository institutions—member or nonmember—for a fee.

Today, the major advantage of membership in the Fed is that member banks, as stockholders in their district bank, receive

**FIGURE 15.4**

Functions of the Federal Reserve

Responsibility	Description
Clearing checks	Check clearing is the method by which a check that has been deposited in one depository institution is transferred to the depository institution on which it was written. Figure 15.3 (on page 403) explains this process.
Acting as the federal government's fiscal agent	The federal government collects large sums of money through taxation, and it spends and distributes even more. It deposits some of this money in the Federal Reserve banks and distributes the rest among thousands of commercial banks. As the federal government's fiscal, or financial, agent, the Fed keeps track of these deposits and holds a checking account for the United States Treasury. Checks for such payments as Social Security, tax refunds, and veterans' benefits are drawn on this account. The Fed also acts as a financial adviser to the federal government.
Supervising member banks	The Fed regulates the state banks that are members of the Federal Reserve System. The Office of the Comptroller of the Currency (OCC) regulates federally chartered commercial banks. The Federal Deposit Insurance Corporation (FDIC) regulates state banks that are not members of the Federal Reserve System.
Holding reserves and setting reserve requirements	All depository institutions are required by law to keep a certain percentage of their deposits in reserve. Each of the 12 Federal Reserve banks holds reserves of member and nonmember depository institutions in its district. By raising or lowering the percentage required, within the limits set by Congress, the Fed can change the amount of money in circulation.
Supplying paper currency	Since 1914 the Fed has been responsible for maintaining much of the nation's paper money. All Federal Reserve notes are printed in Washington, D.C., at the Bureau of Printing and Engraving. Each note, however, has a code number indicating which of the 12 Federal Reserve banks issued it. The money is shipped from the bureau to the appropriate bank to be put into circulation. Much of this money simply replaces old bills. However, each Fed bank must have on hand a sufficient amount of currency to meet the demand—especially during holidays when depositors withdraw large amounts of currency.
Regulating the money supply	The primary responsibility of the Fed is determining the amount of money in circulation, which, in turn, affects the amount of credit and business activity in the economy.

dividends on their stock in the district bank. Member banks also are able to vote for 6 of the district bank's 9 board members.

Functions of the Fed

The Federal Reserve has a number of functions, as shown in **Figure 15.4**. Among them are check clearing, acting as the federal government's fiscal agent, supervising member state banks, holding reserves, supplying paper currency, and regulating the money supply. The most important function of the Fed is regulating the money supply, which you'll learn about in Section 3. As you already noted in **Figure 15.3** on page 403, however, **check clearing**—the transferring of funds from one bank to another when you write or deposit a check—is also an important and complex function.

check clearing: method by which a check that has been deposited in one institution is transferred to the issuer's depository institution

Consumer Protection The Fed also sets standards for certain types of consumer legislation, mainly truth-in-lending legislation. By law, sellers of goods and services must make some kinds of information available to people who buy on credit. This information includes the amount of interest and size of the monthly payment to be paid. The Federal Reserve System decides what type of financial information must be supplied to consumers.



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Workbook, Level 2.*

SECTION

1

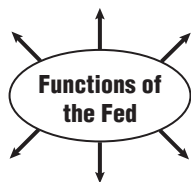
Assessment

Understanding Key Terms

1. **Define** Fed, monetary policy, Federal Open Market Committee, check clearing.

Reviewing Objectives

2. How is the Fed organized?
3. **Graphic Organizer** Create a diagram like the one below to explain the functions of the Fed.



Applying Economic Concepts

4. **Monetary Policy** Explain why you agree or disagree with the following statement: The independence of the Federal Reserve System is essential to the health of the economy.

Critical Thinking Activity

5. **Summarizing Information** Learn more about the functions of the Fed district banks. Choose one of the 12 banks, then use the Internet to reach its home page. Write a summary of the information presented on the bank's Web site.



Outlining

Outlining may be used as a starting point for a writer. The writer begins with the rough shape of the material and gradually fills in the details in a logical manner. You may also use outlining as a method of note taking and organizing information as you read.

- Read the text to identify the main ideas. Label these with Roman numerals.
- Write subtopics under each main idea. Label these with capital letters.
- Write supporting details for each subtopic. Label these with Arabic numerals.
- Each level should have at least two entries and should be indented from the level above.
- All entries should use the same grammatical form, whether phrases or complete sentences.

Learning the Skill

There are two types of outlines—informal and formal. An informal outline is similar to taking notes—you write words and phrases needed to remember main ideas. A formal outline has a standard format. To formally outline material, follow the steps on the left.

Practicing the Skill

On a separate sheet of paper, copy the following outline for a main idea of Section 1. Then use your textbook to fill in the missing subtopics and details.

- I. Organization of the Fed
 - A. Board of Governors
 1. Directs operations of Fed
 - a. Supervises 12 Fed district banks
 - b. Regulates member banks and depository institutions
 2. _____
 - B. Federal Advisory Council
 1. _____
 2. _____
 - C. _____
 - D. _____
- II. Functions of the Fed
 - A. _____
 1. _____
 2. _____
 - B. _____



Practice and assess key skills with ***Skillbuilder Interactive Workbook, Level 2.***

Application Activity

Following the guidelines above, prepare an outline for Section 2 of this chapter.

Money Supply and the Economy

COVER STORY

BUSINESS WEEK, JULY 23, 2001

...[Federal Reserve] Chairman Alan Greenspan decided seven years ago to publicize the central bank's interest-rate moves once they were made. Now, each meeting of

the Fed—whether the central bank changes rates or not—triggers a chorus of instant analysis of what it means for the economy and the financial markets.



READER'S GUIDE

Terms to Know

- loose money policy
- tight money policy
- fractional reserve banking
- reserve requirements

Reading Objectives

1. What are the differences between loose money and tight money policies?
2. What is the purpose of fractional reserve banking?
3. How does the money supply expand?

As you learned in Section 1, the jobs of the Fed today range from processing checks to serving as the government's banker. As you read this section, you'll learn that the Fed's most important function, however, involves control over the rate of growth of the money supply.

Loose and Tight Money Policies

You may have read a news report in which a business executive complained that money is "too tight." You may have run across a story about an economist warning that money is "too

loose.” In these cases, the terms *tight* and *loose* are referring to the monetary policy of the Fed. *Monetary policy*, as you recall, involves changing the rate of growth of the money supply in order to affect the cost and availability of credit.

Credit, like any good or service, has a cost. The cost of credit is the interest that must be paid to obtain it. As the cost of credit increases, the quantity demanded decreases. In contrast, if the cost of borrowing drops, the quantity of credit demanded rises.

Figure 15.5 shows the results of monetary policy decisions. If the Fed implements a **loose money policy** (often called “expansionary”), credit is abundant and inexpensive to borrow. If the Fed follows a **tight money policy** (often called “contractionary”), credit is in short supply and is expensive to borrow.

A loose money policy is implemented to encourage economic growth. You may be wondering why any nation would want a tight money policy, however. The answer is to control inflation. If money becomes too plentiful too quickly, prices increase and the purchasing power of the dollar decreases.

loose money policy: *monetary policy that makes credit inexpensive and abundant, possibly leading to inflation*

tight money policy: *monetary policy that makes credit expensive and in short supply in an effort to slow the economy*

fractional reserve banking: *system in which only a fraction of the deposits in a bank is kept on hand, or in reserve; the remainder is available to lend*

reserve requirements: *regulations set by the Fed requiring banks to keep a certain percentage of their deposits as cash in their own vaults or as deposits in their Federal Reserve district bank*

Fractional Reserve Banking

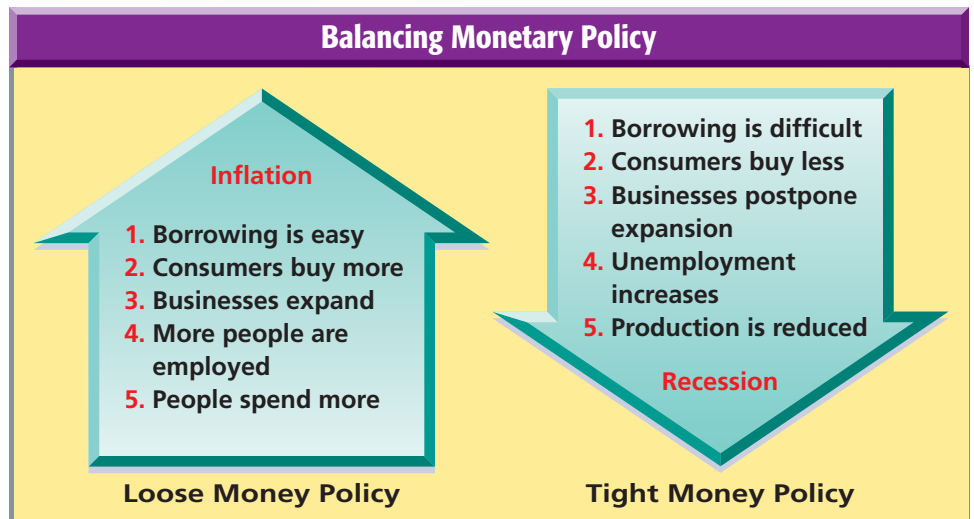
Before you can understand how the Fed regulates the nation’s money supply, you need to understand the basis of the United States banking system and the way money is created. The banking system is based on what is called **fractional reserve banking**.

Since 1913 the Fed has set specific **reserve requirements** for many banks. This means that they must hold a certain percentage of their total deposits either as cash in their own vaults or as deposits in their Federal Reserve district bank. Banks must hold

FIGURE 15.5

Loose Money Versus Tight Money

Look at the chart and determine the differences between a loose money policy and a tight money policy. *Which of these policies can lead to a recession? Why is this possible?*



these reserves in case one or more banking customers decide to withdraw large amounts of cash from their checking accounts. Currently, many financial institutions must keep 10 percent of their checkable deposits as reserves with the Fed.

Money Expansion

Currency is a small part of the money supply. A larger portion consists of funds that the Fed and customers have deposited in banks. Because banks are not required to keep 100 percent of their deposits in reserve, they can use these excess reserves to create what is, in effect, new money. See **Figure 15.6**.

FIGURE 15.6 Expanding the Money Supply

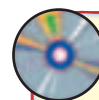
- The chart shows how \$1,000 in new reserves expands to \$5,000 by simple loans. In Round 1, the Fed deposits \$1,000 in Bank A. With a 20 percent reserve requirement, Bank A must hold \$200 of the new deposit on reserve. This leaves the bank with \$800 of excess reserves.
- In Round 2, Mr. Jones applies to Bank A for an \$800 loan to buy a computer. Bank A finds him creditworthy and credits his account with \$800. Mr. Jones writes a check to Computer World, which deposits the money at Bank B. Bank B's reserves increase by \$800. Of this amount, \$160 (20 percent of \$800) are required reserves, and the remaining \$640 are excess reserves.
- In Round 3, Bank B—to earn profits—loans its excess reserves to Ms. Wang, who wants to borrow \$640. She, in turn, buys something from Mr. Diaz, who does his banking at Bank C. He deposits the money from Ms. Wang. Bank C now has \$640 in new deposits, of which \$128 are required reserves. Bank C now loans \$512 of excess reserves to Mrs. Fontana, who buys something from Mrs. Powers, and so on.

Round	Deposited by	Amount of Deposit	Required Reserves (20%)	Excess Reserves (80%)	Loaned to	Paid to
1	the Fed (Bank A)	\$1,000	\$200	\$800	Mr. Jones	Computer World
2	Computer World (Bank B)	\$800	\$160	\$640	Ms. Wang	Mr. Diaz
3	Mr. Diaz (Bank C)	\$640	\$128	\$512	Mrs. Fontana	Mrs. Powers
4	Mrs. Powers (Bank D)	\$512	\$102.40	\$409.60	Mr. Gibbs	Mr. Santana
5	Mr. Santana (Bank E)	\$409.60	\$81.92	\$327.68		
6	All Others					
Eventual Totals		\$5,000	\$1,000			

Suppose Bank A sells a government bond to the Fed and receives \$1,000. This is \$1,000 in “new” money because the Fed simply creates it by writing a check. With a 20 percent reserve requirement, the bank must hold \$200 of that money in reserve. The bank is free to lend the remaining \$800.

Suppose a customer asks the same bank for an \$800 loan. The bank creates \$800 simply by transferring \$800 to the customer’s checking account. The bank must keep in reserve 20 percent of this new deposit—\$160—but now it can lend the remaining \$640. This \$640 is, in turn, treated as a new deposit. Eighty percent of it—\$512—can again be lent. The process continues, with each new deposit giving the bank new funds to continue lending. The original \$1,000 becomes \$5,000.

Of course, a bank usually does not lend and receive back the same money. Its customers will probably withdraw money and spend it or deposit it in another bank. As the money finds its way into a second and third bank, and so on, each bank can use the non-required reserve portion of the money to make more loans. This process is known as the *multiple expansion of the money supply*.



Practice and assess key skills with *Skillbuilder Interactive Workbook, Level 2.*

SECTION 2 Assessment

Understanding Key Terms

- Define** loose money policy, tight money policy, fractional reserve banking, reserve requirements.

Reviewing Objectives

- Graphic Organizer** Create a chart to describe the effect of loose money and tight money policies on the actions listed below.

Effect on . . .	Loose Money Policy	Tight Money Policy
Borrowing		
Consumer buying		
Businesses		
Employment		
Production		

- What is the purpose of fractional reserve banking?
- How does the money supply expand?

Applying Economic Concepts

- Monetary Policy** If there is a 10 percent reserve requirement, by how much does the money supply expand if the Fed injects \$100 of new money? By how much does it expand if the reserve requirement is raised to 20 percent?

Critical Thinking Activity

- Synthesizing Information** Analyze **Figure 15.6** on page 409. Create a similar scenario showing the expansion of the money supply. Begin the expansion by depositing \$200 into Bank A. Assume that the reserve requirement is 20 percent.

SPOTLIGHT ON THE ECONOMY

Why the Fed's Open-Mouth Policy Works

Check It Out! In this chapter you learned that the Federal Open Market Committee decides whether to raise or lower interest rates to control inflation. In this article, read to learn how the FOMC announces its decisions.



Not too many years ago, Federal Reserve officials conducted monetary policy as if they were members of the Politburo plotting behind the thick walls of the Kremlin. The Fed's reasoning: Secrecy was essential if central bankers were to avoid political pressure from those who would like to influence Fed policy on interest rates.

But for the past five years, Fed Chairman Alan Greenspan has been dismantling those Kremlin walls, brick by brick. On May 18, we saw the results of his efforts. Instead of waiting six weeks or more to let the markets know what it thought, the policy-setting Federal Open Market Committee broadcast the outcome of its meeting immediately: Yes, the Fed will adopt a tightening bias in light of rising inflation risks. The markets, which had reeled on news of a

surprisingly high consumer price index for April, took the news in stride—relieved to see that the Fed was not yet ready to raise rates.

It all worked beautifully. Alan Greenspan, who is a great believer in free markets, loves it when traders do the Fed's work—raising and lowering bond yields to keep the domestic economy on course. As the reaction to the Fed's May 18 announcement shows, the markets are fully capable of taking direction from the Fed.

. . . Now, everyone from home buyers in North Dakota to executives in Florida . . . gets the same information—and the right information—at exactly the same time.

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Think About It

1. How did Alan Greenspan change the way the FOMC announces its decisions?
2. What are the benefits of a transparent monetary policy?



Regulating the Money Supply

READER'S GUIDE

Terms to Know

- discount rate
- prime rate
- federal funds rate
- open-market operations

Reading Objectives

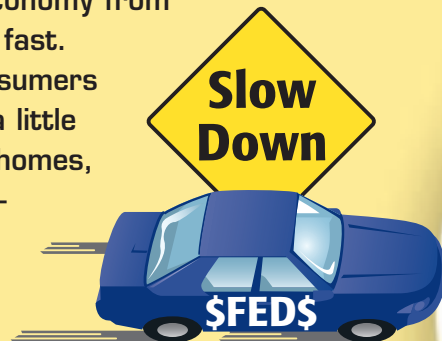
1. How can the Fed use reserve requirements to alter the money supply?
2. How does the discount rate affect the money supply?
3. How does the Fed use open-market operations?
4. What are some of the difficulties of carrying out monetary policy?

COVER STORY

THE COLUMBUS DISPATCH, JULY 1, 1999

Like a driver applying a quick tap of the brakes, the Federal Reserve yesterday raised the cost of borrowing to keep the U.S. economy from running ahead too fast.

As a result, consumers can expect to pay a little more when buying homes, cars, and other big-ticket items, as well as when carrying credit-card balances.



The main goal of the Federal Reserve is to keep the money supply growing steadily and the economy running smoothly without inflation. As you'll learn in this section, the Fed uses several tools to achieve a smoothly running economy.

Changing Reserve Requirements

The Federal Reserve can choose to control the money supply by changing the reserve requirements of financial institutions. The lower the percentage of deposits that must be kept in reserve, the more dollars are available to loan. The reverse is also true.

Figure 15.7 explains how changes in the reserve requirement affect the nation's money supply.

As *Part C* of **Figure 15.7** shows, the Fed may raise reserve requirements. To build up its reserves to meet the new requirement, a bank has several possibilities. It can call in some loans, sell off securities or other investments, or borrow from another bank or from the Federal Reserve. Obviously, because all banks would have to increase their reserves, this action would decrease the amount of money in the economy. Raising reserve requirements, then, could be used to help slow down the economy if it were expanding too rapidly.

Even small changes in the reserve requirement can have major effects on the money supply. As a result, some believe that this tool is not precise enough to make frequent small adjustments to the money supply. In recent years, changing the reserve requirement has not been used to regulate the money supply.

FIGURE 15.7

Raising and Lowering Reserve Requirements

Bank Deposits	Reserve Requirement	\$ Amount Bank May Loan	Fed Action
Part A \$1,000,000	10% ($10\% \times \$1,000,000 = \$100,000$)	\$900,000	Suppose a bank has \$1 million in deposits, and the reserve requirement is 10 percent. The bank must keep at least \$100,000 in reserves.
Part B \$1,000,000	5% ($5\% \times \$1,000,000 = \$50,000$)	\$950,000	If the Fed wanted to increase the money supply, it could lower the reserve requirement to 5 percent, for example. The bank would then need to keep only \$50,000 in reserves. It could lend out the other \$950,000. This additional \$50,000 would expand the money supply many times over as it was lent and redeposited. This could help pull the economy out of a recession.
Part C \$1,000,000	15% ($15\% \times \$1,000,000 = \$150,000$)	\$850,000	Suppose instead that the Fed wanted to decrease the money supply, or at least slow down its rate of growth. It could do this by increasing the reserve requirement from 10 to 15 percent. The bank in this example would then need to keep \$150,000 on reserve—\$50,000 more than with a 10% reserve requirement.



Changing the Discount Rate

Sometimes a bank will find itself without enough reserves to meet its reserve requirement. This situation may occur if customers unexpectedly borrow a great deal of money or if depositors suddenly withdraw large amounts. The bank must then borrow funds to meet its reserve requirement. One of the ways it can do this is to ask its Federal Reserve district bank for a loan. The district bank, like any other bank, charges interest. The rate of interest the Fed charges its member banks is called the **discount rate**.

discount rate: *interest rate that the Fed charges on loans to member banks*

prime rate: *rate of interest that banks charge on loans to their best business customers*

If the bank does borrow from the Fed, this newly created money would then be available for lending to individuals or businesses, thus increasing the money supply. If the discount rate is high, the bank passes its increased costs on to customers in the form of higher interest rates on loans. For example, it might raise its **prime rate**—the interest rate it charges its best business customers.

High discount rates, which discourage borrowing, might keep down the growth of the money supply.

In contrast, if the discount rate is low, even a bank with sufficient reserves might borrow money. The loan will raise the bank's reserves and increase its ability to make loans. Thus, a reduction in the discount rate may increase the total money supply.

Changing the discount rate, like changing the reserve requirement, is rarely used by the Fed as a tool of monetary policy. Rather, either through its chair or its Federal Open Market Committee, the Fed periodically states that it is going to change "the" interest rate. Because there are many interest rates in the economy, which one does the Fed mean?

Global Economy

Worldwide Influence

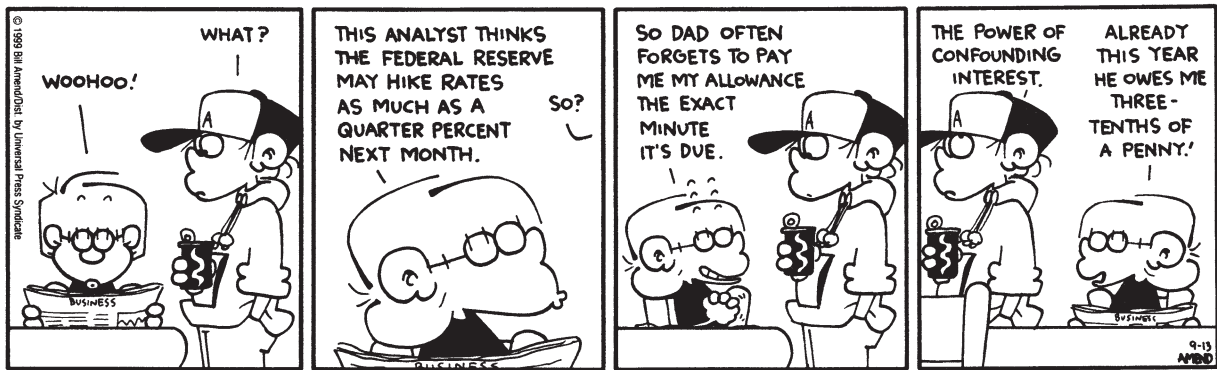
Decisions made by the Federal Open Market Committee (FOMC) may have an impact far beyond the American economy. Immediately after the FOMC announces its actions, American financial markets respond. Traders consider how these actions will affect the economy, and they buy or sell stocks and bonds accordingly. As a result, stock and bond prices rise or fall, sometimes sharply.

By the end of the business day in the United States, financial markets in Asia are opening. Traders and investors there read the Fed's actions and note the response of the American markets, often following the example of their American counterparts. A comparable situation develops a few hours later in Europe, when financial markets open there. As one American financial expert has noted, "The Fed has become the dominant central bank in the world." ■

FIGURE 15.8

Federal Funds Rate When the media discusses a rate hike or reduction by the Fed, they are referring to the federal funds rate, or the interest rate that banks charge each other for overnight loans. *How does an increase in the federal funds rate affect you as a banking customer?*

FOX TROT

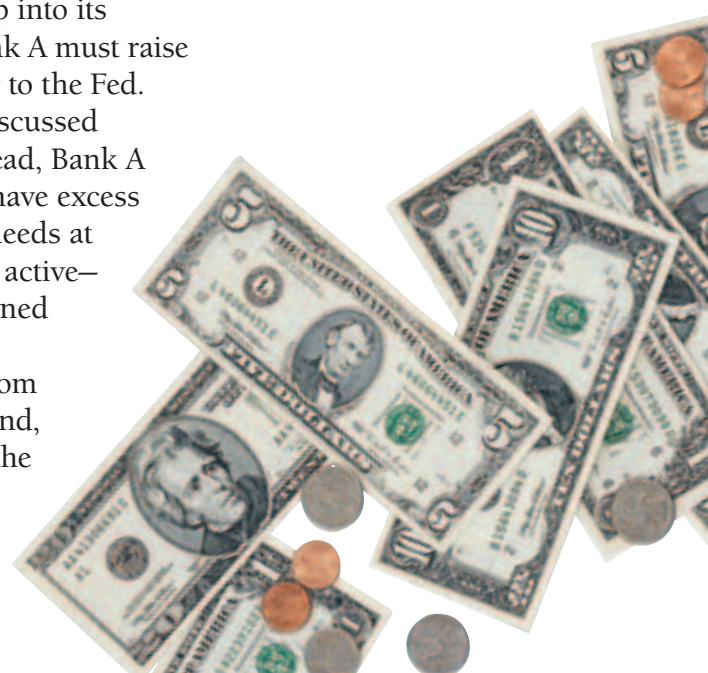


Federal Funds Rate The interest rate the Fed is referring to is the **federal funds rate**. This is the interest rate that banks charge each other for short-term loans (usually overnight). Why would one bank need to borrow from another? Suppose a customer walks into Bank A late in the day and withdraws a large amount. In order to provide funds to the customer, the bank must dip into its required reserves. Before the banking day ends, Bank A must raise its reserves to the required amount or pay a penalty to the Fed.

Bank A could borrow money from the Fed as discussed earlier, but the discount rate may be too high. Instead, Bank A approaches Bank B for a loan. Bank B happens to have excess reserves that day, so it loans Bank A the money it needs at the federal funds rate. This federal funds market is active—billions of dollars of reserves are borrowed and loaned each business day.

If the Fed causes the federal funds rate to drop from 5.25 percent to 5 percent, banks will borrow more and, thus, lend more. This increases business activity in the economy. In contrast, the chairman of the Fed may publicly state the opposite—that the Fed is causing the federal funds rate to rise from, say, 5.5 percent to 5.75 percent. At this higher rate, banks will reduce their borrowing from other banks as well as raise the interest rates they charge their own customers. Economic activity will contract. See **Figure 15.8**.

federal funds rate: interest rate that banks charge each other on loans (usually overnight)



open-market operations: buying and selling of United States securities by the Fed to affect the money supply

Open-Market Operations

Buying and selling government securities, called **open-market operations**, is the major tool the Fed uses to control the money supply. As you may remember from Chapter 6, securities are government IOUs such as Treasury bills, notes, and bonds. The term *open market* is used because these securities are bought and sold in the open market through dealers who specialize in buying and selling government securities. An open market is one that is open to private businesses and not controlled or owned by the government.

When the Fed buys securities—such as Treasury bills—it pays for them by making a deposit in the account of the security dealer’s bank. This deposit increases the bank’s reserves and therefore the amount of money it can lend, thus increasing the money supply. Remember the *multiple expansion of money* that you learned about in Section 2? When the Fed adds even a relatively small amount of new reserves into the banking system, banks can create money by holding on to required reserves and loaning out the rest.

In contrast, when the Fed sells Treasury bills to a dealer, the dealer’s bank must use its deposits to purchase the securities. This action means that banks have fewer reserves to support loans and must reduce their lending. The multiple expansion of money works in reverse by taking more money out of circulation than just the initial withdrawal.

Difficulties of Monetary Policy

Economists sometimes describe the Fed’s control over the money supply as similar to a driver’s control over a car. Like a driver, the Fed can accelerate or brake, depending on what phase of the business cycle the economy is in. In reality, the Fed cannot control the money supply as quickly and as surely as a driver can control a car.

One problem is the difficulty in gathering and evaluating information about M1 and M2. As you know, the money supply is measured in terms of M1—currency, traveler’s checks, and checkable accounts—and M2—which is M1 plus certain near monies. In recent years, new savings and investment opportunities have appeared. Keeping track of the growth of M1 and M2 becomes more difficult as money is shifted from savings accounts into interest-paying checkable accounts or from checkable accounts into money market deposit accounts. The increased use of debit cards and electronic funds transfer has also changed the way money circulates through the economy.

Throughout its history, the Fed's monetary policies have been criticized. In some instances of rising inflation, the Fed increased the amount of money in circulation, thereby worsening inflation. During other periods when the economy was slowing down and going into recession, the Fed decreased the money supply. This action made the recession worse.

To prevent such misjudgments, some critics of the Fed have requested that the money supply simply be increased at the same rate every year. They recommend that the Fed *not* engage in monetary policy.

Although the Fed is protected from direct political pressure, it nonetheless still receives conflicting advice from many directions. In addition, the Fed is not the only force working to affect the economy. The spending and taxing policies of the federal government are also at work. The Fed's task is to consider all of these factors as it plots a course for the growth of the economy as well as one that ensures price stability.



CAREERS

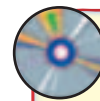
Accountant

Job Description	Qualifications
<ul style="list-style-type: none"> ■ Prepare, analyze, and verify financial reports and taxes ■ Prepare budgets and manage assets 	<ul style="list-style-type: none"> ■ Bachelor's degree in accounting ■ Passage of CPA (Certified Public Accountant) exam often required

Starting Salary: \$43,500

Job Outlook: Average

—Occupational Outlook Handbook, 2002–03



Practice and assess key skills with *Skillbuilder Interactive Workbook, Level 2.*

SECTION

3

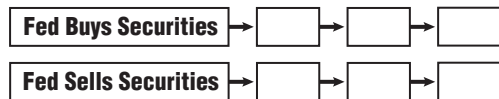
Assessment

Understanding Key Terms

- Define** discount rate, prime rate, federal funds rate, open-market operations.

Reviewing Objectives

- How can the Fed use reserve requirements to alter the money supply?
- How does the discount rate affect the money supply?
- What are some of the difficulties of carrying out monetary policy?
- Graphic Organizer** Create a diagram like the one in the next column to show how the Fed uses open-market operations to change the money supply.



Applying Economic Concepts

- Monetary Policy** If you were responsible for controlling the nation's money supply, which tool would you use? Why?

Critical Thinking Activity

- Synthesizing Information** Imagine that you are the chairman of the Fed. Write a paragraph to the general public explaining why you are raising the federal funds rate. Include the words "inflation" and "recession" in your explanation.



Alan Greenspan

ECONOMIST (1926–)

- **Chairman of the Federal Reserve Board since 1987**
- **Chairman of the Council of Economic Advisers under President Gerald Ford**
- **Member of the Economic Policy Advisory Board under President Ronald Reagan**

As Chairman of the Federal Reserve Board, Alan Greenspan monitors developments in the United States economy—the impact of new technologies, for example. In this excerpt, Greenspan discusses the economic impact of information technology.

“The American economy, clearly more than most, is in the grip of what the eminent Harvard professor, Joseph Schumpeter, many years ago called ‘creative destruction,’ the continuous process by which emerging technologies push out the old. Standards of living rise when incomes created by the productive facilities employing older, increasingly [outdated], technologies are marshaled to finance the newly produced capital assets that embody cutting-edge technologies.

. . . Of course, large remnants of imprecision still persist, but the remarkable surge in the availability of real-time information in

recent years has sharply reduced the degree of uncertainty confronting business management. This has enabled businesses to remove large swaths of now unnecessary inventory, and dispense with [redundant use of] worker[s] and capital. . . . As a consequence, growth in output per work hour has accelerated, elevating the standard of living of the average American worker.

. . . Moreover, technological innovations have spread far beyond the factory floor and retail and wholesale distribution channels. Biotech, for example, is revolutionizing medicine and agriculture, with far-reaching consequences for the quality of life not only in the United States but around the world.”

Checking for Understanding

1. What does Greenspan mean by the term “creative destruction”?
2. How, according to Greenspan, have technological innovations fundamentally changed the economy?

ECONOMICS Online



CLICK HERE

Chapter Overview Visit the *Economics Today and Tomorrow* Web site at ett.glencoe.com and click on **Chapter 15—Chapter Overviews** to review chapter information.

SECTION 1 Organization and Functions of the Federal Reserve System

- Congress created the Federal Reserve System, or **Fed**, in 1913 as the central banking organization in the United States.
- The Fed is made up of a Board of Governors assisted by the Federal Advisory Council, the **Federal Open Market Committee**, 12 district banks, 25 branch banks, and thousands of member banks.
- Among the Fed's functions are **check clearing**, acting as the federal government's fiscal agent, supervising member state banks, holding reserves, supplying paper currency, and carrying out **monetary policy**.

SECTION 2 Money Supply and the Economy

- The most important function of the Fed is monetary policy, or controlling the rate of growth of the money supply.

- With a **loose money policy**, credit is abundant and inexpensive to borrow. With a **tight money policy**, credit is in short supply and is expensive to borrow.
- The banking system is based on **fractional reserve banking**, in which banks hold a certain percentage of their total deposits either as cash in their vaults or in Fed banks.
- After banks meet the **reserve requirement**, they can loan out the rest to create what is, in effect, new money.

SECTION 3 Regulating the Money Supply

- The Fed can control the money supply by changing the reserve requirements of financial institutions. Lowering the requirement allows banks to loan more, thus increasing the money supply.
- Other tools the Fed can use are changing the **discount rate** and **federal funds rate**, which also affect the **prime rate**. By making borrowing more expensive, banks and consumers are discouraged from spending, which halts the growth of the money supply.
- The main tool the Fed uses to control the money supply is **open-market operations**—buying and selling government securities. By depositing money in the banking system (buying securities), the money supply grows. By withdrawing money from the banking system (selling securities), the money supply decreases.

Assessment and Activities

ECONOMICS Online



Self-Check Quiz Visit the *Economics Today and Tomorrow* Web site at ett.glencoe.com and click on **Chapter 15—Self-Check Quizzes** to prepare for the Chapter Test.

CLICK HERE 

Identifying Key Terms

Write the letter of the definition in Column B that correctly defines each term in Column A.

Column A

1. Fed
2. prime rate
3. tight money policy
4. reserve requirements
5. monetary policy
6. open-market operations
7. discount rate
8. loose money policy
9. federal funds rate
10. check clearing

Column B

- a. means of changing the growth rate of the money supply
- b. central banking system in the United States
- c. purchases and sales of United States securities by the Fed
- d. method by which a check deposited in one bank is transferred to another bank
- e. the interest paid by banks when they borrow reserves among themselves

- f. situation in which credit is expensive to borrow
- g. the interest paid by banks when they borrow from a Fed district bank
- h. situation in which credit is inexpensive to borrow
- i. the interest rate that banks charge their best customers for loans
- j. rule that banks keep a certain percentage of their deposits as cash

Recalling Facts and Ideas

Section 1

1. What does the Board of Governors do within the Fed?
2. How many Fed banks and branches are there?
3. Which agency of the federal government supplies paper currency to the economy?

Section 2

4. What are the two basic types of monetary policies?
5. In a 10 percent fractional reserve banking system, what happens to the money supply when the Fed injects \$100 of new money into the American economy?
6. Why do banks have to keep money in reserve accounts?

Section 3

7. The Fed can change the money supply in circulation by changing reserve requirements. What are two other methods that it can use to do this?
8. If the Fed wants to decrease the money supply, what can it do?

9. Why is it difficult for the Fed to gather and evaluate information about M1 and M2?
10. Why do some of the Fed's critics think the Fed should not engage in monetary policy?

Thinking Critically

1. **Understanding Cause and Effect** Create a flowchart like the one below to show how the banking system creates money.



2. **Making Comparisons** What is the advantage for banks to be members of the Federal Reserve today? How does this differ from the past?
3. **Identifying Alternatives** How do you think the Fed would operate differently if it were under the control of the executive branch?

Applying Economic Concepts

Monetary Policy Look at **Figure 15.2** on page 402. Use the map to answer the following questions.

1. In what federal district do you live?
2. What is the Federal Reserve Bank city of district 9?
3. What is the Federal Reserve Bank city of district 4? What are district 4's branch cities?
4. What are the branch cities of district 11?
5. To what district bank would checks written in Hawaii go first?

Cooperative Learning Project

Working in groups, imagine that you are members of the Federal Open Market Committee. Eight times a year, you meet to discuss whether changes in the supply of money are necessary. The research staff presents information about the state of

the economy. Write a list of the different types of information you think the members of the FOMC should have during their meetings.

Reviewing Skills

Outlining Reread and outline Section 3 of this chapter, using the following as your skeleton:

- I. Regulating the Money Supply
 - A. Changing reserve requirements
 - B. Changing the discount rate
 - C. Open-market operations
 - D. The difficulties of monetary policy

After outlining the information, develop a convincing argument in favor of one monetary tool over the use of the other two monetary tools. Summarize your argument and present that summary in a short speech to the class using your outline.

Technology Activity



Using the Internet On the Internet, check the most recent issue of the *Federal Reserve Bulletin* for the current reserve requirements and discount rate. Check the same month's issue for the last four years to see how often they have changed and by how much. Track these data on a chart.



Select a nation and research its central banking organization. Does the country have a "central bank"? If so, how does it regulate the money supply? If not, what controls does the country have in place to avoid inflation or recessions? Present your findings to the class.