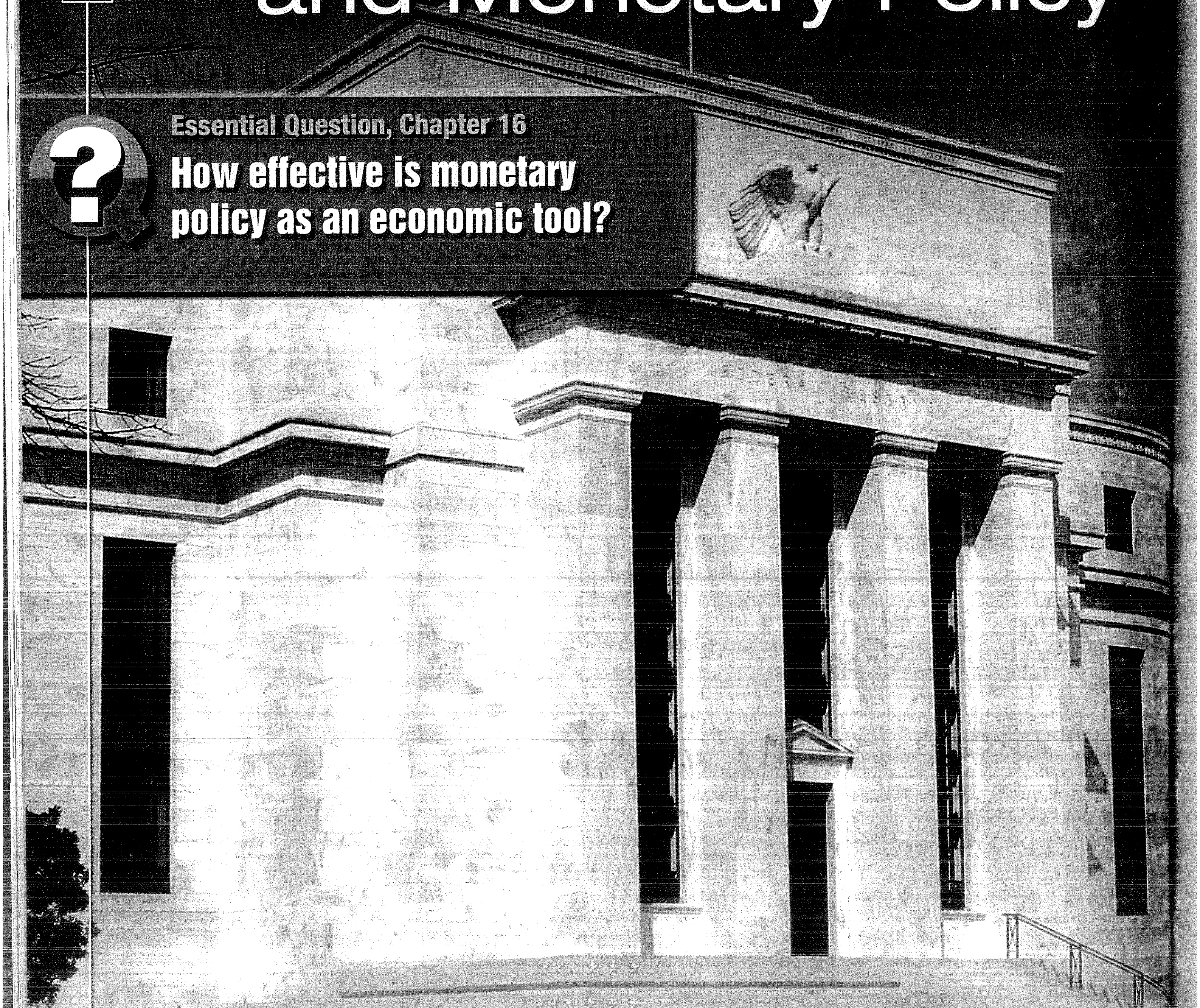
Chapter 16 The Federal Reserve and Monetary Policy



Essential Question, Chapter 16

How effective is monetary policy as an economic tool?

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SECTION 1 The Federal Reserve System

OBJECTIVES

1. **Describe** banking history in the United States.
2. **Explain** why the Federal Reserve Act of 1913 led to further reform.
3. **Describe** the structure of the Federal Reserve System.

ECONOMIC DICTIONARY

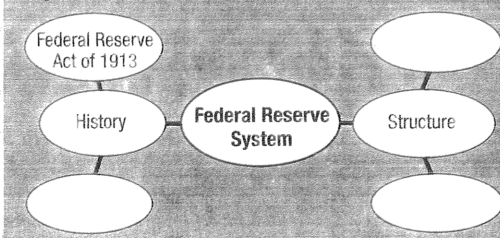
As you read the section, look for the definitions of these **Key Terms:**

- monetary policy
- reserves
- reserve requirements

Guiding Question

How is the Federal Reserve System organized?

Copy this concept web and fill it in as you read.



Economics and You It's Saturday night, and you've gone out to a movie with friends. Now everyone wants to eat, but you realize that you have only a dollar and some change left. What can you do? If you have access to an ATM, you could get cash out of your bank account. Here's a crazy thought—what if your bank runs out of money? What can *it* do?

Principles in Action As you'll see in this section, when American banks need emergency cash, they turn to the Federal Reserve System for a loan. The Federal Reserve System is organized to provide this and a host of essential services to banks, to the federal government, and, most importantly, to the national economy.

Banking History

The Federal Reserve in American History

The Federal Reserve System, as you read in Chapter 10, is the central bank of the United States. It has many important tasks, but the most prominent one is to act as the main spokesperson for the country's monetary policy. **Monetary policy** refers to the actions that the Fed takes to influence the level of real GDP and the rate of inflation in the economy.

The role of a central bank in the U.S. economy has been hotly debated since 1790, when Federalists lined up in favor of establishing a central bank. The first Bank of the United States issued a single currency. It also reviewed banking practices and helped the federal government carry out

monetary policy the actions that the Federal Reserve System takes to influence the level of real GDP and the rate of inflation in the economy

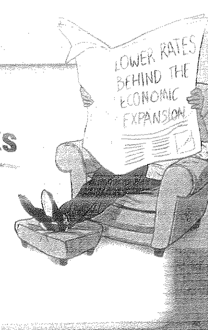
Visual Glossary online

Go to the Visual Glossary Online for an interactive review of **monetary policy.**

Action Graph online

Go to Action Graph Online for animated versions of key charts and graphs.

How the Economy Works online



Go to How the Economy Works Online for an interactive lesson on **making monetary policy.**

VISUAL GLOSSARY

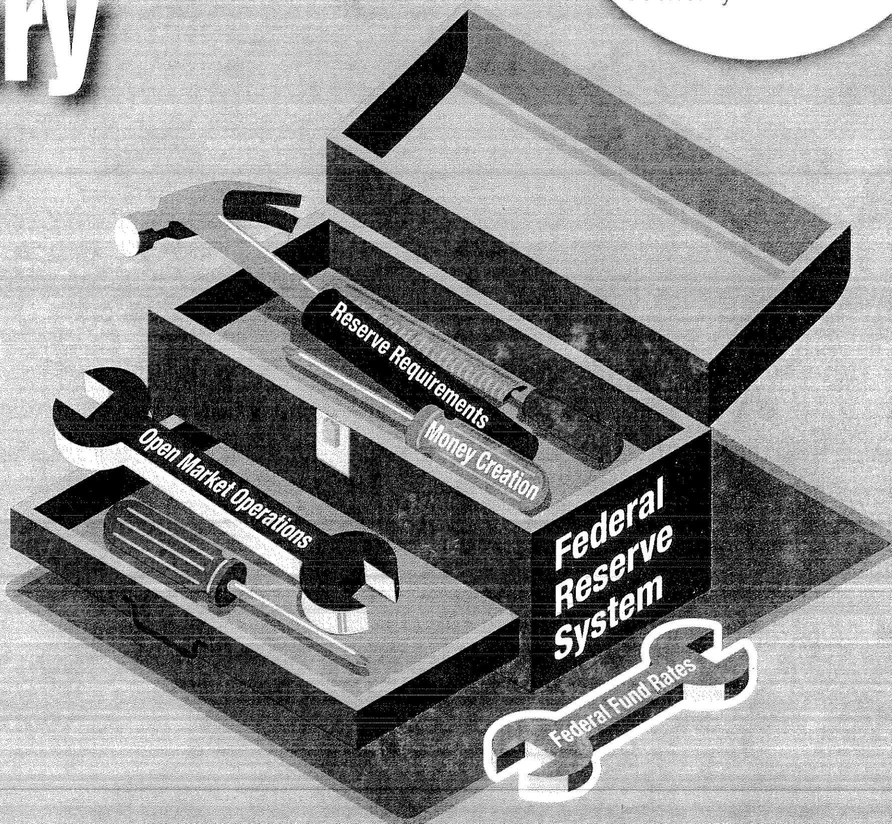
Reviewing Key Terms

To understand *monetary policy*, review these terms.

central bank, *p. 260*
interest, *p. 268*
real GDP, *p. 310*
inflation, *p. 342*
fiscal policy, *p. 392*

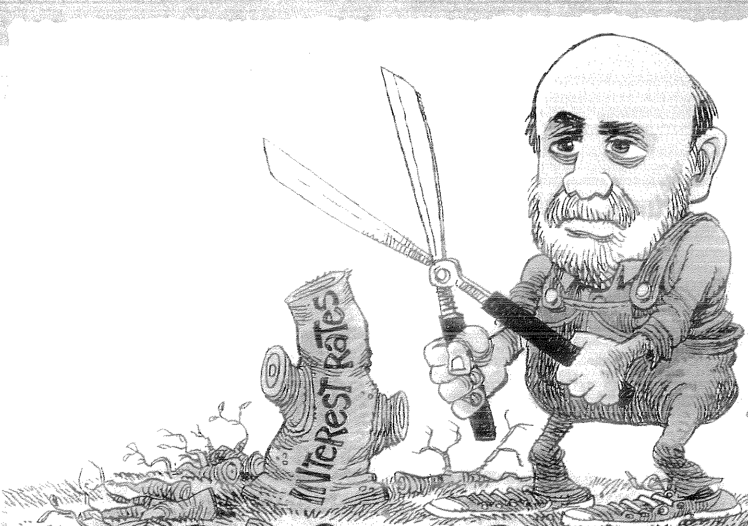
What is Monetary Policy?

◀ **monetary policy** the actions that the Fed takes to influence the level of real GDP and the rate of inflation in the economy



To achieve its mission of stabilizing the U.S. economy, the Federal Reserve board uses a variety of tools.

- The Fed can encourage money creation by making it cheaper for banks to borrow.
- The Fed can raise and lower reserve requirements and raise and lower the discount rate.
- Open market operations, the buying and selling of government securities, is the most used monetary policy tool.



◀ Fed chair Ben Bernanke uses one of his important tools to stabilize the economy. ***What action does the cartoonist suggest Bernanke is about to take?***

Visual Glossary online

To expand your understanding of this and other key economic terms, visit **PearsonSchool.com/PHecon** its duties and powers. Partly because of the impassioned debate over state versus federal powers, however, the first Bank lasted only until 1811. At that time, Congress refused to extend its charter.

Congress established the Second Bank of the United States in 1816 to restore order to the monetary system. However, many people still feared that a central bank placed too much power in the hands of the federal government. Political opposition toppled the Second Bank in 1836 when its charter expired.

A period of confusion followed. States chartered some banks, while the federal government chartered and regulated others. Banks had to keep a certain amount of reserves on hand. **Reserves** are deposits that a bank keeps readily available as opposed to lending them out. **Reserve requirements**—the amount of reserves that banks are required to keep on hand—were difficult to enforce, and the nation experienced several serious bank runs. The Panic of 1907 finally convinced Congress to act.

The nation's banking system needed to address two issues. First, consumers and businesses needed greater access to funds to encourage business expansion. Second, banks needed a source of emergency cash to prevent depositor panics that resulted in bank runs.

CHECKPOINT ***Why did some Americans oppose establishing a central bank?***

Federal Reserve Act of 1913

Attempting to solve these problems, Congress passed the Federal Reserve Act in 1913. The resulting Federal Reserve System, now often referred to simply as "the Fed," consisted of a group of 12 independent regional banks. These banks could lend to other banks in times of need.

Continued Need for Reform

The Great Depression was exactly the situation Congress had hoped to avoid by creating the Federal Reserve System. The system did not work well, however, because the regional banks each acted independently. Their separate actions often canceled one another out.

For example, in 1929 and 1930, the Governors of the Federal Reserve Banks of New York and Chicago wanted the Fed to lower interest rates. Many of the assets used to make business loans had lost value as a result of the stock market crash. Lower interest rates would make more money available to banks. However, the Federal Reserve Board of Governors was against lowering interest rates. Concerned about the growth of the stock market, the board favored a contractionary monetary policy. They also restrained the New York board from taking strong action. Many economists believe that the failure of the Fed to act contributed to the deepening of the financial crisis.

A Stronger Fed

In 1935, Congress adjusted the Federal Reserve's structure so that the system could respond more effectively to future crises. These reforms created the Federal Reserve System as we know it today. The new Fed enjoyed more centralized power so that the regional banks were able to act consistently with one another while still representing their own districts' banking concerns. One example shows how the new Fed helped fight a Depression-era crisis in a small Minnesota town. Picture this scene:

Outside the bank, a large crowd was growing frantic. A large number of withdrawals had badly depleted the bank's supply of cash. Inside the bank, a worried banker phoned the Federal Reserve Bank in Minneapolis—200 miles away—and begged the Fed to send him money. Fed officers snapped into action. They hired an airplane and packed a half million dollars into satchels.

> "Upon approaching the town the pilot guided the plane low over the main street to dramatize its arrival and then landed in a nearby field. From there the Fed officials were ceremoniously escorted into town by the police and the money was stacked along the bank's teller windows. The sight of all that money piled up inside the bank quelled the customers' fears and saved the bank from failing."
>
> —"Born of a Panic: Forming the Federal Reserve System"
> Federal Reserve Board, Minneapolis

CHECKPOINT ***Why did the Fed fail to prevent the financial crises that led to the Great Depression?***

reserves deposits that a bank keeps readily available as opposed to lending them out

reserve requirements the amount of reserves that banks are required to keep on hand

Structure of the Federal Reserve

The Federal Reserve System is privately owned by the member banks themselves. But it is publicly controlled by the federal government. Like so many American institutions, the structure of the Federal Reserve System represents compromises between centralized power and regional powers. **Figure 16.1** illustrates that structure.

The Board of Governors

The Federal Reserve System is overseen by the Board of Governors of the Federal Reserve. The Board of Governors is headquartered in Washington, D.C. Its seven governors, or members, are appointed for staggered 14-year terms by the President of the United States with the advice and consent of the Senate. The terms are staggered to prevent any one President from appointing a full Board of Governors and to protect board members from day-to-day political pressures. Members cannot be reappointed after serving a full term. Geographical restrictions on these appointments ensure that no one district is overrepresented.

The President also appoints the chair of the Board of Governors from among these seven members. The Senate confirms the appointment. Chairs serve four-year terms, which can be renewed.

Recent chairs of the Fed have been economists from the business world, the academic world, or government. They have a keen sensitivity toward public opinion and an ability to use the media to affect public opinion. Alan Greenspan, a former head of an economics consulting firm and chair of the President's Council of Economic Advisers (CEA), has been the most notable chair of the Fed in modern times. He took office in 1987 and served both Republican and Democratic administrations. After Greenspan resigned in 2006, President George W. Bush replaced him with Ben Bernanke, the head of the Council of Economic Advisers and a former professor of economics. Bernanke learned about monetary policy and Milton Friedman as a graduate student. He spent much of his career as an economist researching the Great Depression. His own writings on the topic focused on how to keep financial crises from getting out of control.

Twelve Federal Reserve Banks

The Federal Reserve Act divided the United States into 12 Federal Reserve Districts, as shown in **Figure 16.2.** One Federal Reserve Bank is located in each district. Each of these Banks monitors and reports on economic and banking conditions in its district.

Each Federal Reserve District is made up of more than one state. The Federal Reserve Act aimed to establish a system in which no one region could exploit the central bank's power at another region's expense.

Congress regulates the makeup of each Reserve Bank's board of nine directors to make sure that it represents many interests. The nine directors consist of three sets of three persons each. The first set of three represents commercial banks, and they are elected by the district's member banks.

Figure 16.1 **Structure of the Federal Reserve System**

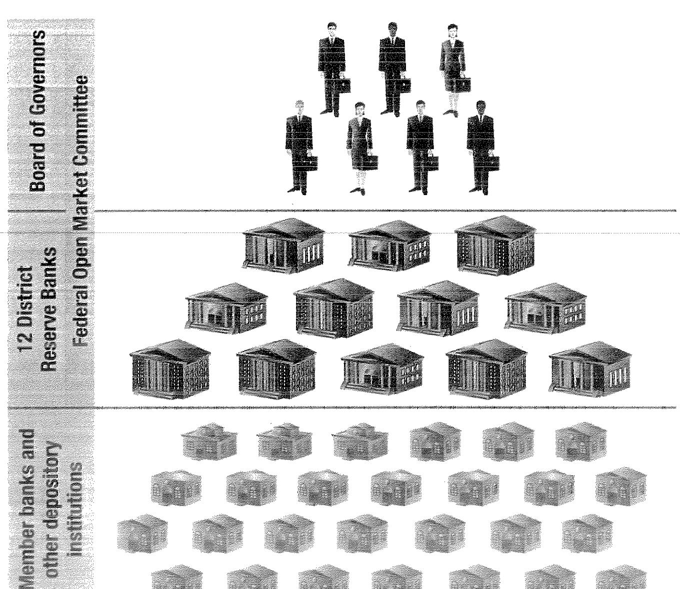
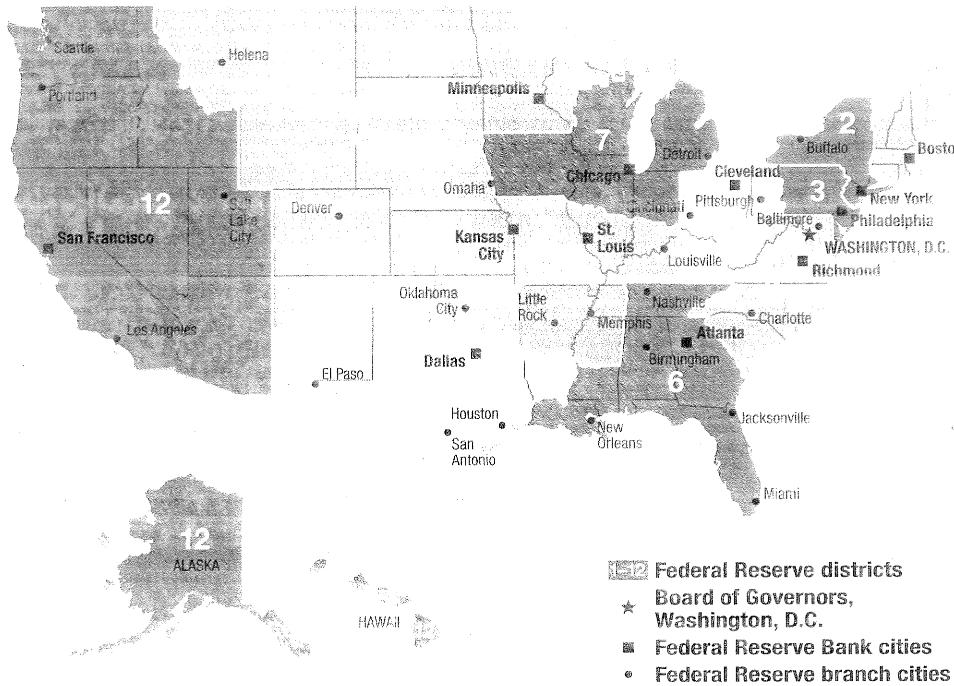


CHART SKILLS

More than 30 percent of all United States banks belong to the Federal Reserve System.

1. At which of the three levels of this Fed structure would a nationally chartered bank in your community fit?
2. How does the structure of the Fed reflect a compromise between centralized power and regional powers?

Figure 16.2 Federal Reserve Districts



MAP SKILLS

Most Federal Reserve Districts contain a variety of agricultural, manufacturing, and service industries, as well as rural and urban areas.

1. Which are the largest and smallest of the Federal Reserve Districts? Name the Federal Reserve Bank cities in each of these districts.
2. How does the make-up of the Federal Reserve Districts help ensure that no single region is dominant?

The member banks also elect the second set—three people who represent the interests of groups such as industry, commerce, labor, services, and consumers. The third set of directors is appointed by the Board of Governors of the Federal Reserve. These three represent the same broad public interests as the second group. The Board of Governors then selects one of the nine directors to serve as chair of the Reserve Bank's board. Each board of directors appoints a president of the Reserve Bank, subject to approval by the Board of Governors.

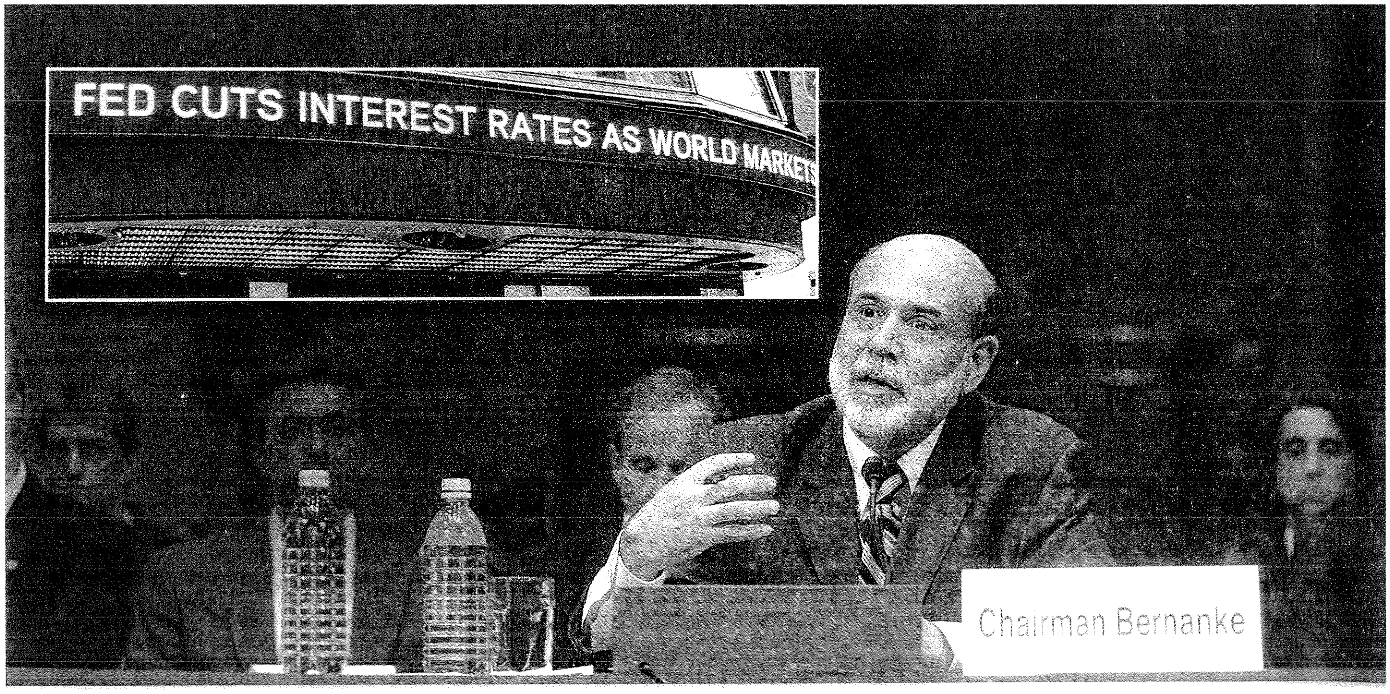
All nationally chartered banks are required to join the Federal Reserve System. The remaining members are state-chartered banks that join voluntarily. Since 1980, all banks have equal access to Fed services, whether or not they are Fed members. These services include reserve loans to banks in need of short-term cash.

Each of the approximately 2,400 Fed member banks contributes a small amount of money to join the system. In return, it receives stock in the system. This stock earns the bank dividends from the Fed at a rate of up to 6 percent.

The fact that the banks themselves, rather than a government agency, own the Federal Reserve gives the system a high degree of political independence. This independence helps the Fed to make decisions that best suit the interests of the country as a whole.

The Federal Open Market Committee (FOMC) makes key monetary policy decisions about interest rates and the growth of the United States money supply. The committee meets about eight times a year in private to discuss the cost and availability of credit, for business and consumers, across the country. Announcements of the FOMC's decisions can affect financial markets and rates for home mortgages, as well as many economic institutions around the world. You will read more about the effects of monetary policy later in this chapter.

Members of the Federal Open Market Committee are drawn from the Board of



▲ Ben Bernanke testifies on the economy before a committee of Congress. ***Why are both Congress and world markets interested in what he has to say?***

Governors and the 12 district banks. All seven members of the Board of Governors sit on the FOMC. Five of the 12 district bank presidents also sit on the committee. The president of the New York Federal Reserve Bank is a permanent member. The four other district presidents serve one-year terms on a rotating basis. The Board of Governors holds a majority of the seats on the FOMC, giving it effective control over the committee's actions.

After meeting with the FOMC, the chair of the Board of Governors announces the committee's decisions to the public. The Federal Reserve Banks and financial markets spring into action as they react to Fed decisions. In the next section, you will read about how the Fed's decisions are carried out and what functions the Federal Reserve serves.

CHECKPOINT ***What is the role of each of the 12 Federal Reserve banks?***

Essential Questions Journal To continue to build a response to the Essential Question, go to your **Essential Questions Journal.**

SECTION 1 ASSESSMENT

Guiding Question

1. Use your completed concept web to answer this question: How is the Federal Reserve System organized?
2. **Extension** Since you do not deal directly with the Federal Reserve, why should you care how it operates?

3. What are **reserves** held by banks?
4. What **reserve requirements** do banks have?
5. What is **monetary policy**?

6. **Summarize (a)** What three responsibilities did the first Bank of the United States have? **(b)** Why did the bank not last?
7. **Infer (a)** Which type of bank is required to belong to the Federal Reserve System? Which can join voluntarily? **(b)** Why do you think that the Federal Reserve has both a public and a private character?
8. **Evaluate (a)** Describe the two issues that the Panic of 1907 forced the nation's banking system to address. **(b)** Why do you think it took so long for the nation to establish a central banking authority?
9. **Conclude (a)** What is the role of the Federal Open Market Committee (FOMC)? **(b)** Why do you think the FOMC is drawn from so many different sectors of the Federal Reserve Board?
10. **Compare (a)** Who replaced Alan Greenspan as chair of the Federal Reserve Bank in 2006? **(b)** What did the two men have in common?

Quick Write

11. Locate a newspaper editorial on a topic relating to economics, and look for the author's point of view. First, identify the author or news service. Then, provide words that indicate the point of view. Finally, describe the point the author is trying to make in the article and what conclusion you reach as to whether you agree with it.

SECTION 2 Federal Reserve Functions

OBJECTIVES

1. **Describe** how the Federal Reserve serves the federal government.
2. **Explain** how the Federal Reserve serves banks.
3. **Describe** how the Federal Reserve regulates the banking system.
4. **Explain** the Federal Reserve's role in regulating the nation's money supply.

ECONOMIC DICTIONARY

As you read the section, look for the definitions of these **Key Terms:**

- check clearing
- bank holding company
- federal funds rate
- discount rate

Guiding Question

What does the Federal Reserve do?

Copy this flowchart and fill it in as you read.

Functions of the Fed			
Serve Government	Serve Banks	Regulate Banks	Regulate Money Supply
•	•	•	•
•	•	•	•
•	•	•	•

Economics and You Your summer job is going great—you like the work and it pays well. The trouble is, the paychecks are handed out just once a month and you desperately need that first paycheck. Finally the end of the month arrives and you rush to your bank to cash your paycheck. But the bank teller has an unpleasant surprise for you. The bank will not credit the amount to your account until the paycheck clears. It will take at least two days, the teller says, for the check-clearing process to be completed.

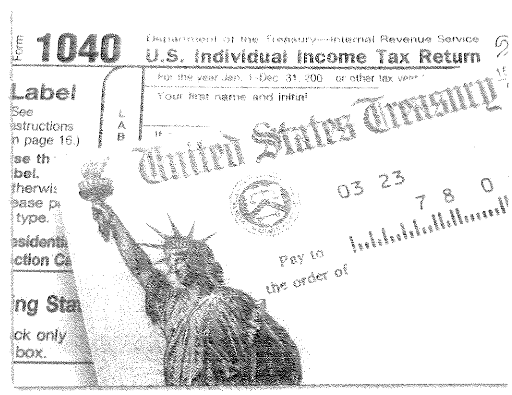
Principles in Action The teller doesn't explain—probably because he or she doesn't know—that most check-clearing functions in the United States are handled through the Federal Reserve. In addition to your check, the Fed will process another 18 billion checks this year. What else does the Fed do? One function, as you will read in the Economics & You feature, is to issue money. In fact, you may have a bill now that says "Federal Reserve Note." This and the many other responsibilities of the Fed are the subject of this section.

Serving Government

As the central bank of the United States, the 12 district banks that make up the core of the Federal Reserve System carry out several important functions. Among the most important of these functions is to provide banking and fiscal services to the federal government.

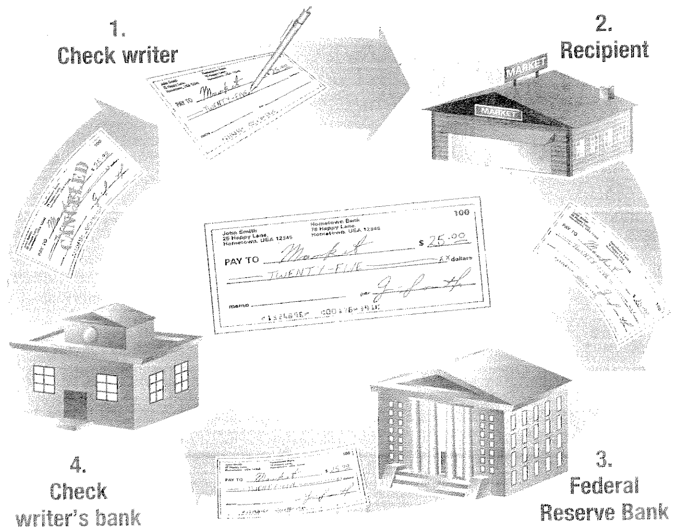
The United States government pays out about $1.2 trillion each year to support such social insurance programs as Medicare, Social Security, and veterans benefits. To handle its banking needs when dealing with such enormous sums, the federal government turns to the Federal Reserve.

The Federal Reserve serves as banker for the United States government. It maintains a checking account for the Treasury Department that it uses to process Social Security checks, income tax refunds, and other government payments. For example, if you receive a check from the federal government and cash it at your local bank, it is the Federal Reserve that deducts the amount from the Treasury's account.



▲ The Federal Reserve is the banker for the U.S. government. Among its many functions, it processes social security checks and income tax refunds. ***What are some of its other responsibilities?***

Figure 16.3 The Path of a Check



When you receive a check, you present it at a bank. The check is then sent to a Federal Reserve Bank, which collects the necessary funds from the bank of the person who wrote the check.

1. How long does it generally take for checks to clear?
2. In what other ways does the Fed serve banks?

The Federal Reserve also serves as a financial agent for the Treasury Department and other government agencies. The Fed sells, transfers, and redeems securities such as government bonds, bills, and notes. It also makes interest payments on these securities.

The Treasury Department auctions off government bills, bonds, and notes to finance the many programs of the U.S. government. Funds raised from these auctions are automatically deposited into the Federal Reserve Bank of New York.

[illegible] currency. The Treasury Department issues [illegible] The district Federal Reserve Banks issue paper currency (Federal Reserve Notes). As bills become worn out or torn, the Fed takes them out of circulation and replaces them with fresh ones.

CHECKPOINT ***How does the Fed serve as the government's banker?***

check clearing the process by which banks record whose account gives up money and whose account receives money when a customer writes a check

bank holding company a company that owns more than one bank

Serving Banks

The Federal Reserve also provides services to banks throughout the nation. It clears checks, safeguards bank resources, and lends funds to help banks that need to borrow in order to maintain their legally required reserves.

Figure 16.3 shows how checks "clear" within the Fed system. **Check clearing** is the process by which banks record whose account gives up money and whose account receives money when a customer writes a check. The Fed can clear millions of checks at any one time using high-speed equipment. Most checks clear within two days—a remarkable achievement when you consider that the Fed processes about 18 billion checks per year.

To ensure stability, the Federal Reserve monitors bank reserves throughout the banking system. Each of the 12 Federal Reserve Banks sends out bank examiners to check up on lending and other financial activities of member banks. The Board of Governors also approves or disapproves proposed bank mergers.

The Board studies proposed bank mergers and bank holding company charters to ensure competition in the banking and financial industries. A **bank holding company** is a company that owns more than one bank. The Board of Governors approves or disapproves mergers and charters based on the findings and recommendations of the Reserve Banks.

The Federal Reserve also protects consumers by enforcing truth-in-lending laws, which require sellers to provide [illegible] about loan terms. Under a provision called Regulation Z, [illegible] information about retail credit terms, automobile loans, and home mortgages.

Under normal circumstances, banks lend each other money on a day-to-day basis, using money from their reserve balances.

These funds are called federal funds. The interest rate that banks charge each other for these loans is the **federal funds rate.**

Banks also borrow from the Federal Reserve, especially in financial emergencies such as recessions. The Fed acts as a lender of last resort, making emergency loans to commercial banks so that they can maintain required reserves. The rate the Federal Reserve charges for these loans is called the **discount rate.** You will read more about the discount rate in Section 3.

federal funds rate the interest rate that banks charge each other for loans

discount rate the interest rate that the Federal Reserve charges commercial banks for loans

An Expanded Role

As you read in Chapter 10, a serious financial crisis erupted in 2008. It began because many banks had made home loans that borrowers were unable to repay. As the crisis deepened, corporations and other borrowers could not obtain loans from banks, and the financial system ceased to function effectively.

The Federal Reserve responded to this crisis by changing the size and scope of its involvement in the economy. The Fed's total assets increased during 2008 from less than $1 trillion to over $2 trillion. Prior to the financial crisis, most of the Fed's assets consisted of government securities. To help the mortgage market through the financial crisis, the Fed bought mortgage-backed securities. In 2010, the Fed held over $1 trillion of these mortgage-backed securities.

CHECKPOINT ***How does the Fed protect consumers who take out bank loans?***

Regulating the Banking System

Banks, savings and other financial institutions are supervised by a number of state and federal authorities. The Fed coordinates all these regulatory activities.

Reserves

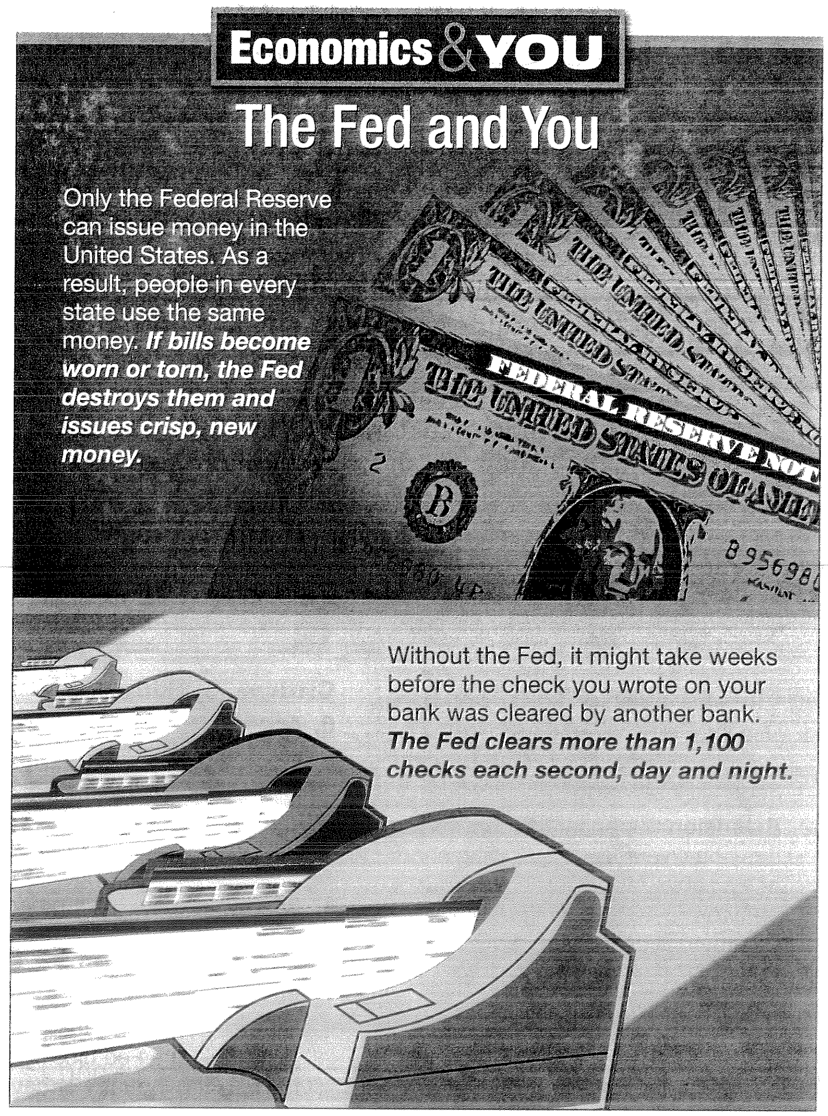
As you read in Chapter 10, United States banks operate under a fractional reserve system. Banks hold in reserve only a fraction of their funds—just enough to meet customers' daily needs. Banks then lend their remaining funds, charging interest to earn returns.

Each financial institution that holds deposits for customers must report daily to the Fed about its reserves and activities. The Fed uses these reserves to control how much money is in circulation.

Bank Examinations

The Federal Reserve and other regulatory agencies also examine banks periodically to insure that each institution is obeying laws and regulations. Examiners may make unexpected bank visits to ensure that banks are following sound lending practices.

Bank examiners can force banks to sell risky investments or to declare loans that will not be repaid as losses. If examiners find that a bank has taken excessive



▲ Sometimes even two days to clear a check seems uncomfortably long. ***What would happen to commerce and industry if it took all checks a month to clear?***

risks, they may classify that institution as a problem bank and force it to undergo more frequent examinations.

CHECKPOINT ***Why does the Federal Reserve examine banks?***

Regulating the Money Supply

The Federal Reserve is best known for its role in regulating the nation's money supply. You will recall from Chapter 10 that economists and the Fed watch several indicators of the money supply. M1 is simply a measure of the funds that are easily accessible or in circulation. M2 includes the funds counted in M1 as well as money market accounts and savings instruments. The Fed compares various measures of the money supply with the likely demand for money.

People and firms need to have a certain amount of cash on hand to make economic transactions—to buy groceries, supplies, clothing, and so forth. The more of your wealth you hold as money, the easier it will be to make economic transactions.

Of course, we can't earn interest on money that we hold as cash. As interest rates rise, it becomes more expensive to hold money as cash rather than placing it in assets that pay returns. So, as interest rates rise, people and firms will generally keep their wealth in assets such as bonds, stocks, or savings accounts.

The final factor that influences money demand is the general level of income. As GDP or real income rises, families and firms keep more of their wealth or income in cash.

The laws of supply and demand affect money, just as they affect everything else in the economy. Too much money in the economy leads to inflation. In inflationary times, it takes more money to purchase the same goods and services. It is the Fed's job to keep the money supply stable.

Ideally, if real GDP grew smoothly and the economy stayed at full employment, the Fed would increase the money supply just to match the growth in the demand for money, thus keeping inflation low. As you read in Chapter 15, however, it is hard to predict economic effects. In the next section, you will read about the tools that the Fed can use to help the economy function at full employment without contributing to inflation.

CHECKPOINT ***What is the effect of too much money in circulation?***

Essential Questions Journal To continue to build a response to the Essential Question, go to your **Essential Questions Journal.**

SECTION 2 ASSESSMENT

Guiding Question

1. Use your completed flowchart to answer this question: What does the Federal Reserve do?
2. **Extension** Suppose that on a very busy day, your bank is running short of available cash. Why would your bank prefer to borrow from another commercial bank instead of from the Federal Reserve?

3. How does **check clearing** work?
4. What is the difference between the **federal funds rate** and the **discount rate**?
5. What is a fractional reserve system?

Critical Thinking

6. **Analyze (a)** What is the purpose of auctions held by the Treasury? **(b)** What relationship does the Fed have with the Treasury Department?
7. **Evaluate (a)** How does the Federal Reserve protect consumers? **(b)** Should state governments take over this protection instead of the Federal Reserve?
8. **Evaluate (a)** What regulatory activities does the Fed coordinate? **(b)** Should the Fed [illegible] the banking industry or have the industry police itself?
9. **Infer (a)** How do the laws of supply and demand affect money? **(b)** Why can't the Fed automatically maintain full employment and low inflation?

Math Skills

10. **Calculating Incentives for Saving** How do interest rates determine the rate at which people keep their savings in bank deposits? **(a)** Which of the following interest rates would encourage savings rather than spending: 2 percent or 4 percent? Explain your answer. **(b)** How do savings of $500 at a 4 percent interest rate compare with savings of $1,000 at 2 percent? Explain how you calculated your answer.

Visit PearsonSchool.com/PHecon for additional math help.

SECTION 3 Monetary Policy Tools

OBJECTIVES

1. **Describe** the process of money creation.
2. **Explain** how the Federal Reserve uses reserve requirements, the discount rate, and open market operations to implement monetary policy.
3. **Explain** why the Fed favors one monetary policy tool over the others.

ECONOMIC DICTIONARY

As you read the section, look for the definitions of these **Key Terms:**

- money creation
- required reserve ratio
- money multiplier formula
- excess reserves
- prime rate
- open market operations

Guiding Question

How does the Federal Reserve control the amount of money in use?

Copy this table and fill it in as you read.

Controlling the Money Supply		
Tools	To increase it	To decrease it
Reserve requirements		
Discount rate		
Open market operations		

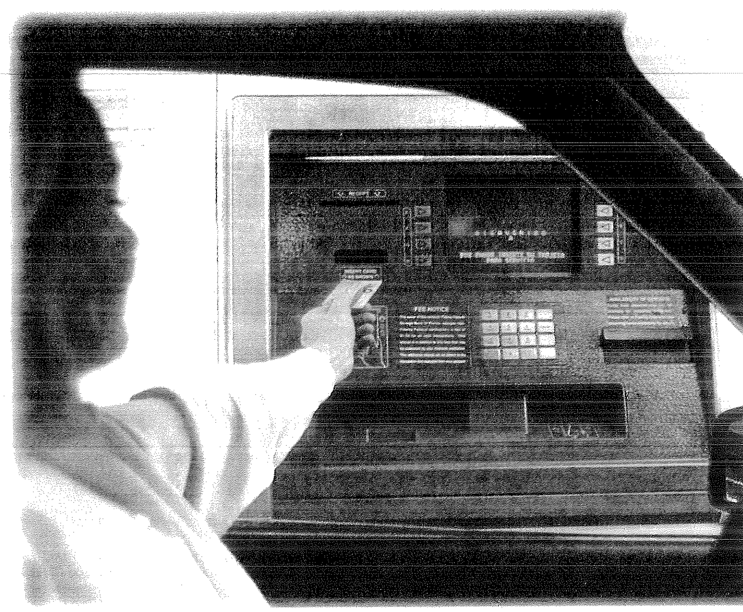
Economics and You Suppose you have a checkbook that allows you to write as many checks as you wish for any amount you desire. You don't need to worry about the balance in your account, and the checks will always be cashed, no matter how much you spend. Of course, no person has an account like that. However, the Federal Reserve, through its monetary policy tools, comes close.

money creation the process by which money enters into circulation

Principles in Action The Federal Reserve has the power to create money. It also has the power to decrease the amount of money in the United States. The Fed controls the amount of money in use in order to stabilize the American economy. How does the Federal Reserve control the amount of money in use? You will read how in this section.

Money Creation

The U.S. Department of the Treasury is responsible for manufacturing money in the form of currency. The Federal Reserve is responsible for putting money into circulation. How does this money get into the economy? The process is called **money creation,** and it is carried out by the Fed and by banks all around the country. Recall from Chapter 15 the multiplier effect of government spending. The multiplier effect in fiscal policy holds that every one dollar change in fiscal policy creates a change greater than one dollar in the economy. The process of money creation works in much the same way.



▲ When you deposit money in the bank, you are not only increasing your net worth, you are also increasing the money supply of the United States. ***Explain how your deposit begins the process of money creation.***

How Banks Create Money

Money creation does not mean the printing of new bills. Banks create money not by printing it, but by simply going about their business.

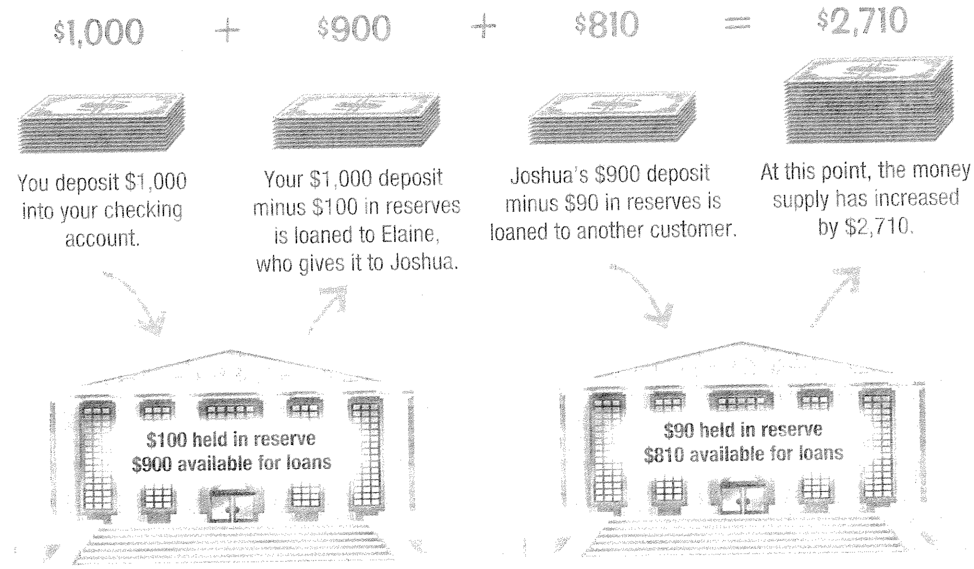
For example, suppose you take out a loan of $1,000. You decide to deposit the money in a checking account. Once you have deposited the money, you now have a balance of $1,000. Since demand deposit account balances, such as your checking account, are included in

Figure 16.4 Money Creation

CHART SKILLS

In this example of money creation, the money supply increases to $2,710 after four rounds.

1. In this example, what is the RRR?
2. Suppose Joshua deposited only $500 of Elaine's payment into his account. How much would the money supply increase then?



Simulation Activity

Money and the Federal Reserve
You may be asked to participate in a role-playing game about Money and the Federal Reserve.

M1, the money supply has now increased by $1,000. The process of money creation begins here.

Banks make money by charging interest on loans. Your bank will lend part of the $1,000 that you deposited. The maximum amount that a bank can lend is determined by the **required reserve ratio** (RRR)—the fraction of deposits that banks are required to keep in reserve. This is calculated as the ratio of reserves to deposits. The RRR, which is established by the Federal Reserve, ensures that banks will have enough funds to supply customers' withdrawal needs.

Suppose in our example that the RRR is 0.1, or 10 percent. This means that the bank is required to keep 10 percent of your $1,000 demand deposit balance, or $100, in reserve. It is allowed to lend $900.

required reserve ratio the fraction of deposits that banks are required to keep in reserve

Let's say the bank lends that $900 to Elaine, and she deposits it in her checking account. Elaine now has $900 she didn't have before. Elaine's $900 is now included in M1. You still have your $1,000 in your account, on which you can write a check at any time. Thus, your initial deposit to the bank, and the subsequent loan, have caused the money supply to increase by $1,000 + $900 for a total of $1,900.

money multiplier formula a formula (initial cash deposit × 1 ÷ RRR) used to determine how much new money can be created with each demand deposit and added to the money supply

Now suppose that Elaine uses the $900 to buy Joshua's old car. Joshua deposits the $900 from Elaine into his checking account. His bank keeps 10 percent of the deposit, or $90, as required reserves. It will lend the other $810 to its customers. So, Joshua has a demand deposit balance of $900, which is included in the money supply, and the new borrowers get $810, which is also added to the money supply. This means that the money supply has now increased by $1,000 + $900 + $810 = $2,710—all because of your initial $1,000 deposit. **Figure 16.4** shows how this increase came about.

This money creation process will continue until the loan amount, and hence the amount of new money that can be created, becomes very small. To determine the total amount of new money that can be created and added to the money supply, economists use the **money multiplier formula**, which is calculated as 1 ÷ RRR. To apply the formula, they multiply the initial deposit by the money multiplier:

Increase in money supply = initial cash deposit × 1/RRR

In our example the RRR is 0.1, so the money multiplier is 1 ÷ 0.1 = 10. This means that the deposit of $1,000 can lead to a $10,000 increase in the money supply.

As of 2010 in the United States, banks had no reserve requirements on the first $10.7 million of demand deposits assets. They were required to hold 3 percent reserves on demand deposit assets between $10.7 and $55.2, and 10 percent on all demand deposit assets exceeding $55.2 million.

In the real world, however, people hold some cash outside of the banking system, meaning that some funds leak out of the money multiplier process. Also, banks sometimes hold **excess reserves,** which are reserves greater than the required amounts. These excess reserves ensure that banks will always be able to meet their customers' demands and the Fed's reserve requirements. The actual money multiplier effect in the United States is estimated to be between 2 and 3.

The Federal Reserve has three tools for adjusting the amount of money in the economy. These tools for creating money (or destroying it, if need be) are reserve requirements, the discount rate, and open market operations.

CHECKPOINT ***How do banks create money simply by going about their business making loans?***

Reserve Requirements

The simplest way for the Fed to adjust the amount of reserves in the banking system is to change the required reserve ratio. (See **Figure 16.5.**) The Fed's Board of Governors has sole responsibility over changes in reserve requirements. However, changing the reserve requirement is not the Fed's preferred tool.

A reduction of the RRR frees up reserves for banks, allowing them to make more loans. It also increases the money multiplier. Both effects will lead to a substantial expansion of the money supply.

The process also works in reverse. Even a slight increase in the RRR forces banks to hold more money in reserves. This causes a contraction in the money supply.

Although changing reserve requirements can be an effective means of changing the money supply, the Fed does not use this tool often because it is disruptive to the banking system. Even a small increase in the RRR would force banks to call in significant numbers of loans, that is, to require the borrower to pay the entire outstanding balance of the loan. This may be difficult for the borrower. For this reason, the Fed rarely changes reserve requirements.

excess reserves bank reserves greater than the amount required by the Federal Reserve

CHECKPOINT ***What effect would a reduction in the required reserve rate (RRR) have on banks?***

The Discount Rate

In the past, the Fed lowered or raised the discount rate to increase or decrease the money supply. Recall that the discount rate is the interest rate that the Federal Reserve charges on loans to financial institutions. Today, the discount rate is primarily used to ensure that sufficient funds are available in the economy. For example, during a financial crisis, there may not be enough funds available in the banking system to

Figure 16.5 Reserve Requirements

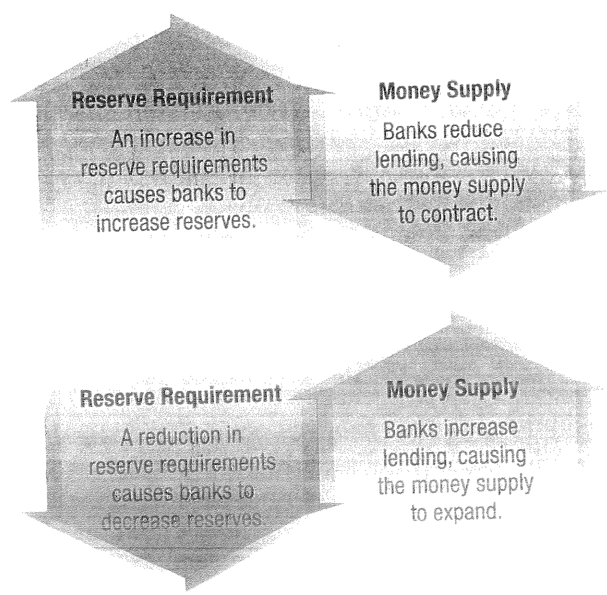
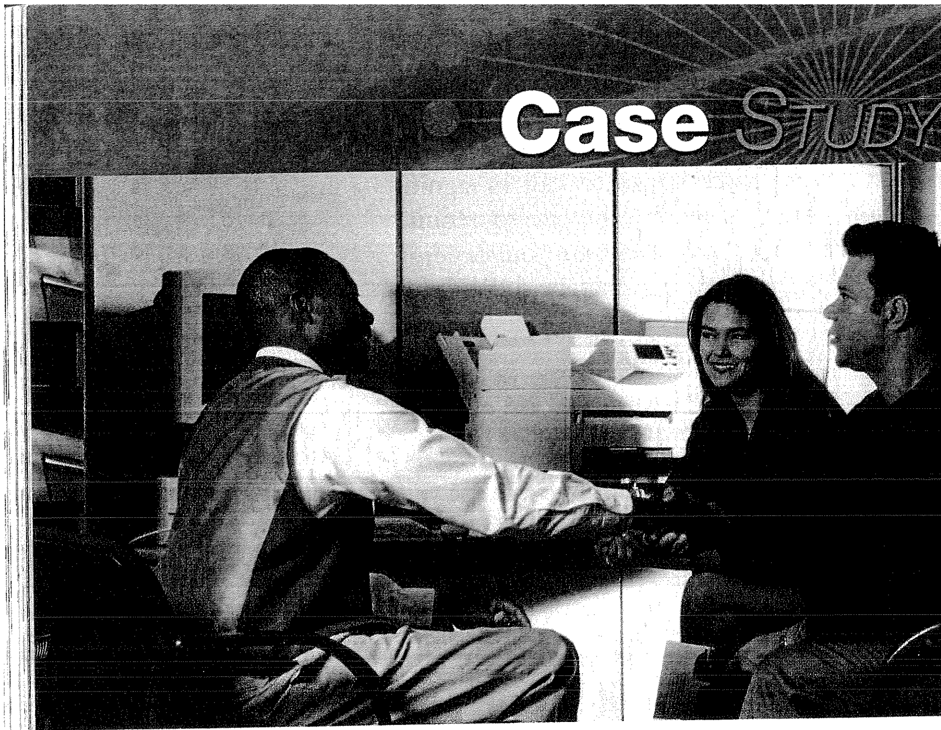
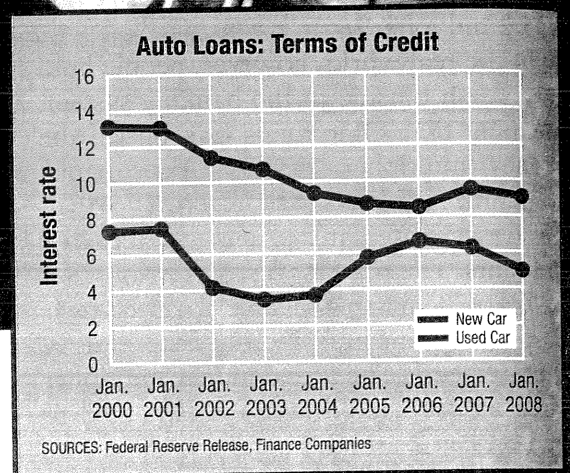


CHART SKILLS

Reducing and increasing reserve requirements directly affects the money supply.

1. What is the effect of reducing reserve requirements?
2. What action of the Fed with respect to reserve requirements causes the money supply to decrease?





Car Loan? Not So Fast.

CREDIT

Lenders' stricter standards are making it tougher to drive off the lot.

By Eleanor Laise
The Wall Street Journal

The credit crunch, having knocked around the American home, is now rolling into the garage.

Despite interest-rate cuts by the Federal Reserve, it's getting tough for many consumers to find attractive terms on auto loans. Many lenders are making fewer loans and instituting stricter standards on loans they do approve, often requiring higher credit scores, making smaller loans and demanding bigger down payments.

While "subprime" borrowers with poor credit will bear the brunt of the shifting lending standards, even "prime" borrowers with good credit may be affected by some changes. And some consumers may not be able to get a car loan at all.

When Michael Staggs, 36, of Spring Hill, Fla., set out to buy a Dodge truck recently, he was looking for an auto loan with an interest rate below 10% and monthly payments between \$250 and \$300. But Mr. Staggs, an engineer who says his credit isn't bad, but not great, didn't get the terms he was banking on. He put down \$1,500, and his \$14,000, 72-month loan came with \$298 monthly payments and a 13.5% rate. "That's a lot higher than I wanted," he says.

Not all borrowers will see tougher terms; lenders still want to gain business from prime borrowers. But some borrowers may find they can't get as large a loan as they'd like. Whereas lenders in recent years have made loans substantially exceeding the car's worth, some are now keeping loan amounts closer to the vehicle's value. Jon Garcia, finance manager at a Toyota dealership in Janesville, Wis., says he's seeing subprime lenders supply only 85% to 90% of the car's book value, down from as much as 140% previously.

And these borrowers with good credit may find tougher loan terms if they live in areas where home prices are dropping. Chase Auto Finance is requiring more collateral on longer-term loans in "high risk" states like Arizona, California and Nevada, which have been hit hard by the housing crisis.

But terms are getting especially tough for subprime borrowers. Chase Auto Finance recently boosted by 10 points the credit score required of subprime customers borrowing more than 110% of the car's value. "We're trying to lend to people who will be able to pay us back," says Thomas Kelly, a Chase spokesman.

Applying Economic Principles

The credit crunch of 2008 made it tough for many consumers to get a car loan. What are some of the terms that car and truck buyers whose credit rating was not prime were forced to accept in order to get loans?

Video News Update Online
Powered by
The Wall Street Journal
Classroom Edition

Use videos at **PearsonSchool.com/PHecon** as a springboard for a discussion on a current topic.

provide the necessary loans to businesses and individuals. In that case, the ability of banks to borrow at the discount rate from the Federal Reserve provides an important safety net.

Today, to enact monetary policy, the Federal Reserve primarily adjusts the federal funds rate, which is the interest rate that banks charge one another for loans. It does not actually *set* a new federal funds rate, however. Instead, it decides on a "target" level for the rate and then takes steps to reach that target. These steps are part of the Fed's open market operations, which you will read about shortly.

The Fed does set the discount rate, and it keeps this rate above the federal funds rate. Banks usually choose to borrow from one another at the funds rate. Only if they need additional reserves will they turn to the Federal Reserve and borrow at the higher discount rate.

Changes in the federal funds rate and the discount rate affect the cost of borrowing to banks or other financial institutions. In turn, these changes in interest rates affect the prime rate. The **prime rate** is the rate of interest that banks charge on short-term loans to their best customers—usually large companies with good credit ratings. Ultimately, other interest rates follow, including the rates that banks pay on savings accounts and the rates that they charge for personal loans. The discount rate, federal funds rate, and prime rate are short-term rates. They determine the cost of borrowing money for a few hours, days, or months. Short-term rates have a limited impact on the long-term growth of the economy. To influence long-term interest rates, the Federal Reserve uses other tools.

***CHECKPOINT** What is the main tool that the Federal Reserve uses in order to adjust the money supply?*

Open Market Operations

Open market operations are the buying and selling of government securities in order to alter the supply of money. (See **Figure 16.6**.) Open market operations are by far the most important—and most often used—monetary policy tool.

Figure 16.6 **Open Market Operations**

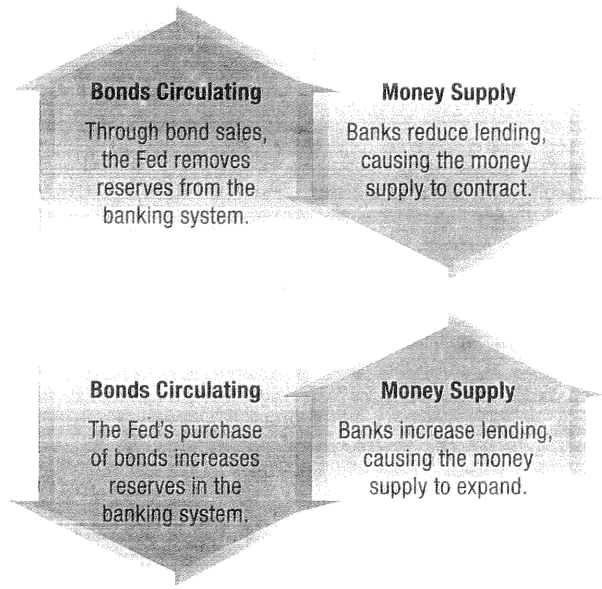


CHART SKILLS

Open market operations are the most often used monetary policy tool.

1. When the Fed sells government securities to bond dealers, does that increase or decrease the amount of money in circulation?
2. How do open market operations differ from reserve requirements?

Bond Purchases

When the Federal Open Market Committee (FOMC) chooses to increase the money supply, it orders the trading desk at the Federal Reserve Bank of New York to purchase a certain quantity of government securities on the open market. The Federal Reserve Bank buys these securities with checks drawn on Federal Reserve funds. The bond sellers then deposit the money from the bond sales into their banks. As the Federal Reserve Board explains:

> "[Now], the bank now has more reserves than it wants. So the bank can lend these unwanted reserves to another bank in the federal funds market. Thus, the Fed's open market purchase increases the supply of reserves to the banking system, and the federal funds rate falls."
>
> —"What Are Open Market Operations?" Federal Reserve Bank of San Francisco

In this way, funds enter the banking system, setting in motion the money creation process described earlier.

FUTURE WATCH

Personal Finance
For more about the prime rate, see your Personal Finance Handbook in the back of the book or visit **PearsonSchool.com/PHecon**

prime rate the rate of interest that banks charge on short-term loans to their best customers

open market operations the buying and selling of government securities in order to alter the supply of money

Bond Sales

If the FOMC chooses to decrease the money supply, it must make an open market bond sale. In this case, the Fed sells government securities back to bond dealers, receiving from them checks drawn on their own banks. After the Fed processes these checks, the money is out of circulation. This operation reduces reserves in the banking system. In order to keep their reserves at the required levels, banks reduce their outstanding loans. The money multiplier process then works in reverse, resulting in a decline in the money supply that is greater than the value of the initial securities purchase.

Targets

To judge whether its open market operations are having the desired effect on the economy, the Fed periodically evaluates one or more economic targets. You have read about how the federal funds rate serves as the main target for interest rates. The Fed also keeps an eye on various money measures such as M1 and M2. Close analysis of these targets helps the Fed meet its goal of promoting a stable and prosperous economy.

CHECKPOINT ***What action does the Federal Open Market Committee take if it wants to decrease the money supply?***

Using Monetary Policy Tools

Open market operations are the most often used of the Federal Reserve's monetary policy tools. They can be conducted smoothly and on an ongoing basis to meet the Fed's goals. The Fed changes the discount rate less frequently. It usually follows a policy of keeping the discount rate in line with other interest rates in the economy in order to prevent excess borrowing by member banks from the Fed that might threaten economic stability.

Today, the Fed does not change reserve requirements to conduct monetary policy. Changing reserve requirements would force banks to make drastic changes in their plans. Open market operations or changes in the discount rate do not disrupt financial institutions.

In setting its monetary policy goals, the Federal Reserve keeps close touch on market forces, studying inflation and business cycles to determine its policy. As you just read, changes in the money supply affect interest rates. You will find out more about how this process works in the next section.

CHECKPOINT ***Why are open market operations the Fed's preferred monetary policy tool?***

Essential Questions Journal To continue to build a response to the Essential Question, go to your **Essential Questions Journal.**

SECTION 3 ASSESSMENT

Guiding Question

1. Use your completed table to answer this question: How does the Federal Reserve control the amount of money in use?
2. **Extension** What method do you use to be sure you have cash for necessary expenditures such as transportation and lunch? Prepare a budget for the coming month. List your expected expenses and revenue. Be sure to allow reserves for unexpected expenses.

Key Terms and Main Ideas

3. What is **money creation**?
4. What is the **required reserve ratio**?
5. Describe the **money multiplier formula**.
6. Why do banks sometimes hold **excess reserves**?
7. If the discount rate rose, would you expect the **prime rate** to rise or fall? Why?
8. What are **open market operations**?

Critical Thinking

9. **Explain (a)** How do commercial banks make money? **(b)** How does the required reserve ratio affect the amount of money they can lend?
10. **Infer (a)** When the Fed cuts interest rates, what effect does it expect to have on business and consumers? **(b)** How is the Fed influenced by market forces in making rate decisions?
11. **Describe (a)** What are three tools the Fed has for adjusting the amount of money in the economy? **(b)** Choose one of the tools and describe it.
12. **Analyze** Why do the discount rate, federal funds rate, and prime rate have a limited impact on the long-term growth of the economy?

Math Skills

13. **Calculating Money Supply** Suppose the RRR is 0.15. **(a)** Use the money multiplier formula to determine by how much a $2,000 checking account deposit will increase the money supply. **(b)** Will the money supply actually increase by the amount you calculated? Why or why not?

Visit PearsonSchool.com/PHecon for additional math help.

SECTION 4 Monetary Policy and Macroeconomic Stabilization

OBJECTIVES

1. **Explain** how monetary policy works.
2. **Describe** the problem of timing in implementing monetary policy.
3. **Explain** why the Fed's monetary policy can involve predicting business cycles.
4. **Contrast** two general approaches to monetary policy.

ECONOMIC DICTIONARY

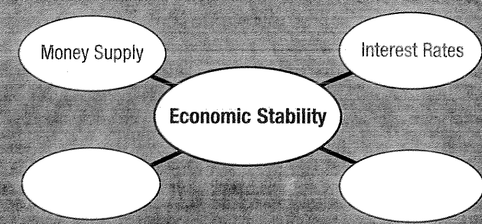
As you read the section, look for the definitions of these **Key Terms:**

- monetarism
- easy money policy
- tight money policy
- inside lag
- outside lag

Guiding Question

How does monetary policy affect economic stability?

Copy this concept web and fill it in as you read.



Economics and You Have you ever asked a parent for money—a raise in your allowance, perhaps, or cash to buy concert tickets? If so, you know that timing is everything. If, for example, your parent has just paid a huge bill for home or car repairs, you know that's the wrong time to be asking for spending money.

Principles in Action As you'll see in this section, timing is also critical to the Fed. Proper timing can support the Fed's efforts to bring economic stability. Bad timing can destroy it. In the How the Economy Works feature, you will see how the Fed copes with the many factors that can make its monetary policy succeed or fail.

monetarism the belief that the money supply is the most important factor in macroeconomic performance

How Monetary Policy Works

Some economists have great faith in monetary policy. These believers in **monetarism** believe that the money supply is the most important factor in macroeconomic performance—which as you have read is the functioning of the entire economy. How, then, does monetary policy influence macroeconomic performance?

Monetary policy alters the supply of money. The supply of money, in turn, affects interest rates. As you read earlier, interest rates affect the level of investment and spending in the economy.

The Money Supply and Interest Rates

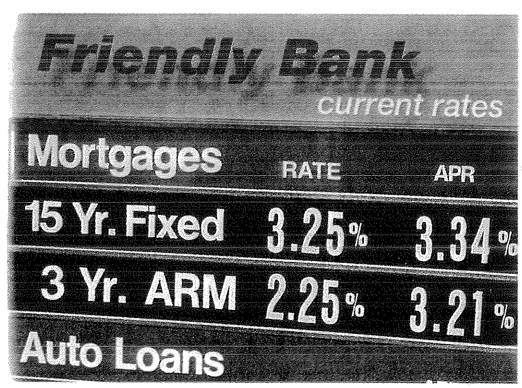
It is easy to see the cost of money if you are borrowing it. The cost—the price that you as a borrower pay—is the interest rate. Even if you spend your own money, the interest rate still affects you because you are giving up interest by not saving or investing.

The market for money is like any other market. If the supply is higher, the price—the interest rate—is lower. If the supply is lower, the price—the interest rate—is higher. In other words, when the money supply is high, interest rates are low. When the money supply is low, interest rates are high.

Interest Rates and Spending

Recall from Chapter 12 that interest rates are important factors of spending in the economy. Lower interest rates encourage greater investment spending by business firms. This is because a firm's cost of borrowing—or of using

This bank advertises the cost of borrowing for mortgages. ***How is the market for money like any other market?*** ▼



Innovators

Milton Friedman

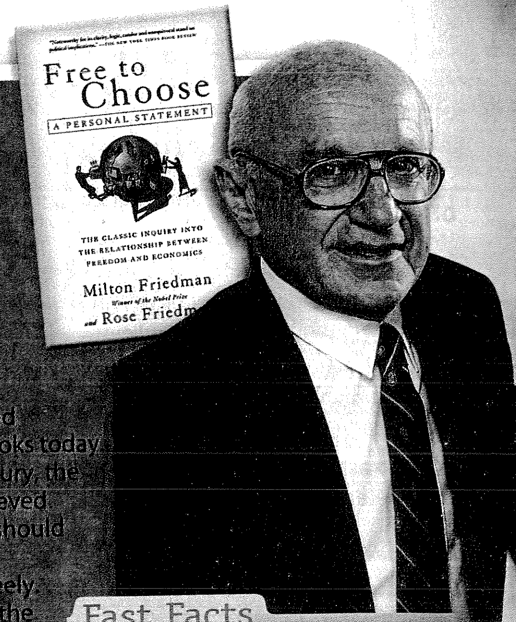
"Mr. Friedman...never held elected office but he has had more influence on economic policy as it is practiced around the world today than any other modern figure." *—Lawrence H. Summers, former Treasury Secretary*

As economic advisor to Presidents Nixon and Reagan, Milton Friedman argued that less government is better government. The policies he recommended have lowered income tax rates, helped control inflation, and decreased unemployment. His ideas are taught in most economics textbooks today.

But that was not always the case. For the first half of the twentieth century, the ideas of John Maynard Keynes dominated economic thought. Keynes believed government spending was the key to economic health, and government should emphasize fiscal policy in managing the economy.

In sharp contrast, Friedman argued that market forces must operate freely. In the view of Friedman and other monetarists, the government, through the Federal Reserve Board, must control the supply of money available to banks. Friedman argued that the most important power of the Fed is to grow or shrink the money supply by buying or selling government securities. The differences between supply siders such as Friedman and demand siders such as Keynes are one of the most important economic issues of our times.

Critical Thinking: ***In what ways were the ideas of John Maynard Keynes at odds with those of Milton Friedman? Which economist do you think is right?***



Fast Facts

Milton Friedman

Born: 1912 in Brooklyn, NY

Died: 2006 in San Francisco, CA

Education: Ph.D., Columbia University, economics

Claim to Fame: Nobel Prize, Economic Science; Presidential Medal of Freedom

its own funds—decreases as the interest rate decreases. Higher interest rates discourage business spending.

Firms find that lower interest rates give them more opportunities for profitable investment. If a firm has to pay 15 percent interest on its loans, it may find few profitable opportunities. If interest rates fall to 6 percent, however, the firm may find that some opportunities are now profitable.

If the macroeconomy is experiencing a contraction—declining income—the Federal Reserve may want to stimulate, or expand, it. The Fed will follow an **easy money policy**. That is, it will increase the money supply. An increased money supply will lower interest rates, thus encouraging investment spending. Such a policy may, however, encourage overborrowing and overinvestment, followed by layoffs and cutbacks.

easy money policy a monetary policy that increases the money supply

tight money policy a monetary policy that reduces the money supply

If the economy is experiencing a rapid expansion that may cause high inflation, the Fed may introduce a **tight money policy**. That is, it will reduce the money supply. The Fed reduces the money supply to push interest rates upward. By raising interest rates, the Fed causes investment spending to decline. This brings real GDP down, too.

Even though it can only alter the money supply, the Fed has a great impact on the economy. The money supply determines the interest rate, and the interest rate determines the level of aggregate demand. Recall from Chapter 12 that aggregate demand represents the relationship between price levels and quantity demanded in the overall economy. Thus, the level of aggregate demand helps determine the level of real GDP.

CHECKPOINT ***How are monetary policy, money supply, and interest rates connected?***

The Problem of Timing

Monetary policy, like fiscal policy, must be carefully timed if it is to help the macroeconomy. If policies are enacted at the wrong time, they could actually intensify the business cycle, rather than stabilize it. To see why, consider **Figure 16.7**.

Good Timing

Figure 16.7A shows the business cycle with a properly timed stabilization policy. The green curve, which shows greater fluctuations, is the business cycle as explained in Chapter 12. The goal of stabilization policy is to smooth out those fluctuations—in other words, to make the peaks a little bit lower and the troughs not quite so deep. This will minimize inflation in the peaks and the effects of recessions in the troughs. Properly timed stabilization policy smoothes out the business cycle, as shown by the red curve in **Figure 16.7A**.

Bad Timing

If stabilization policy is not timed properly, however, it can actually make the business cycle worse, not better. For example, suppose that policymakers are slow to recognize the contraction shown as the green line in **Figure 16.7B**. Perhaps because their data are inaccurate, government economists simply do not realize that a contraction is occurring until the economy is deeply into it. Some period of time may pass before they respond to the contraction.

Likewise, it takes time to enact expansionary policies and have those policies take effect. By the time this takes place, the economy may already be coming out of the recession on its own. If the expansionary effects of an easy money policy boost the economy while it is already expanding, the result could be an even larger expansion that causes high inflation. If expansionary policies are enacted too late, the economy may have slowed down so much that businesses are reluctant to borrow at *any* rate for new investment.

As you can see, there are a couple of problems in the timing of macroeconomic policy. These are called policy lags.

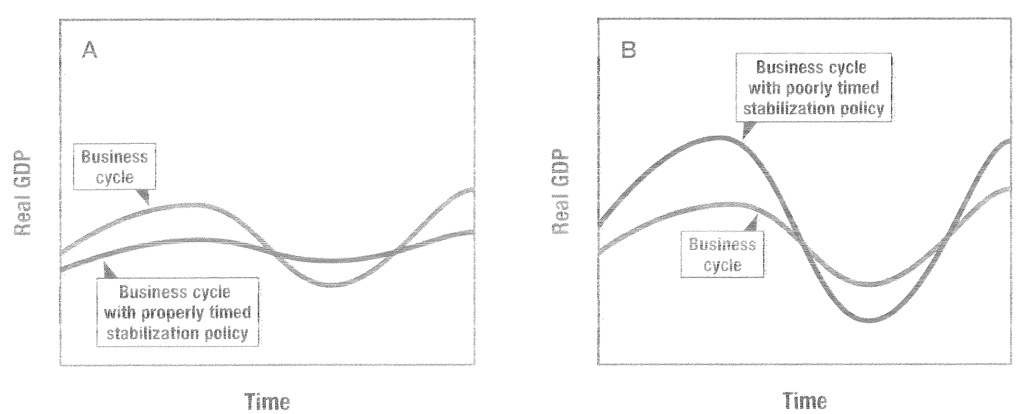
Inside Lags

The **inside lag** is the time it takes to implement monetary policy. Such lags, or delays, occur for two reasons. First, it takes time to identify a problem. Although economists have developed sophisticated computer models for predicting economic trends, they still cannot know for sure that the economy is headed into a new phase of the business cycle until it is already there. Statistics may conflict, and it can take up to a year to recognize a serious economic downturn.

A second reason for inside lags is that once a problem has been recognized, it can take additional time to enact policies. This problem is more severe for fiscal policy than for monetary policy. Fiscal policy,

inside lag the time it takes to implement monetary policy

Figure 16.7 Business Cycles and Stabilization Policy



GRAPH SKILLS

The timing of monetary policy measures can intensify the business cycle.

1. Which troughs are lower, business cycles with proper timing or ones with improper timing?
2. What are the effects of proper timing and improper timing?

Action Graph online

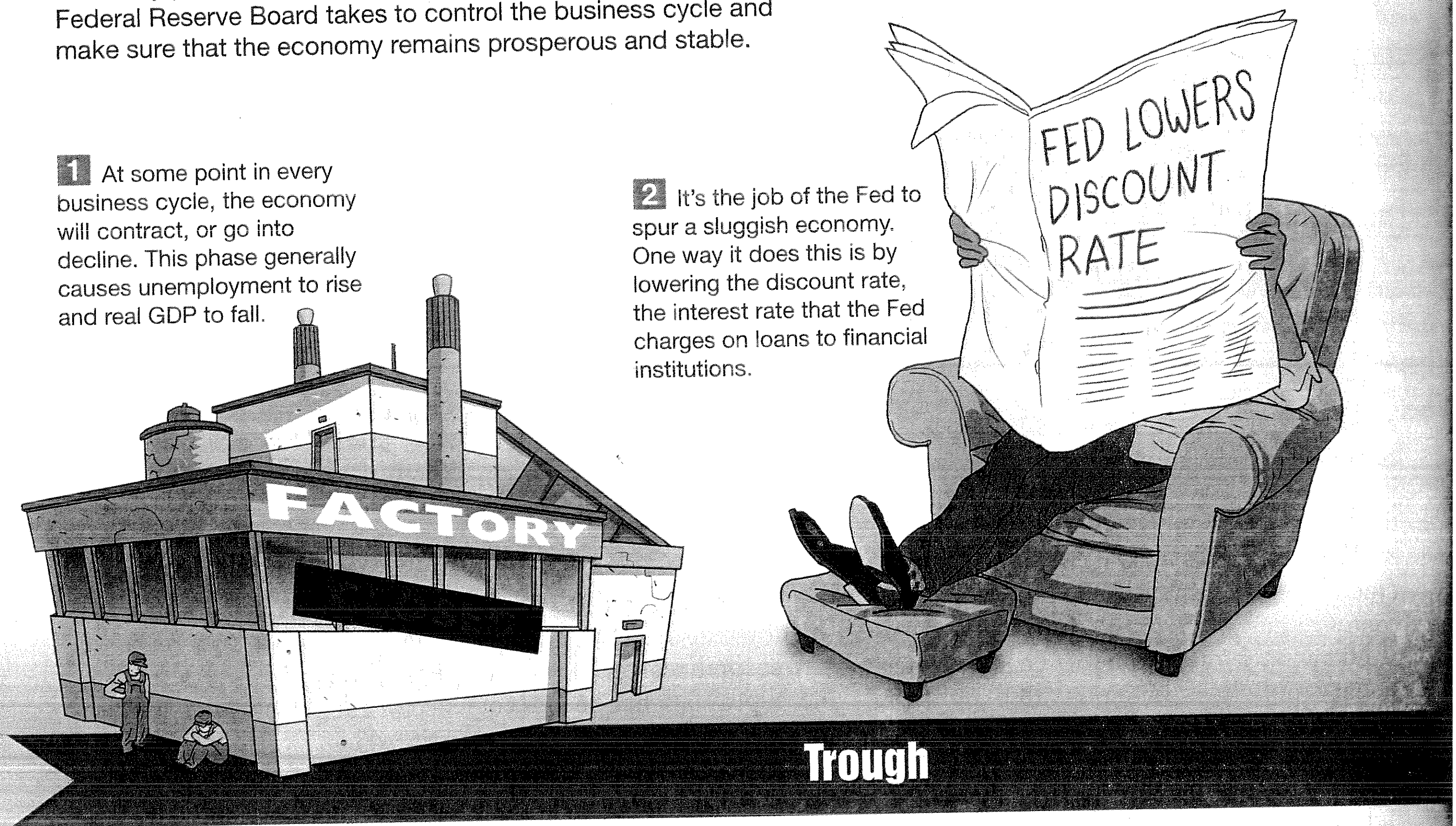
For an animated version of this graph, visit **PearsonSchool.com/PHecon**

How does the Fed make monetary policy?

Monetary policy may be explained simply as the steps the Federal Reserve Board takes to control the business cycle and make sure that the economy remains prosperous and stable.

1 At some point in every business cycle, the economy will contract, or go into decline. This phase generally causes unemployment to rise and real GDP to fall.

2 It's the job of the Fed to spur a sluggish economy. One way it does this is by lowering the discount rate, the interest rate that the Fed charges on loans to financial institutions.



which includes changes in government spending and taxation, requires actions by Congress and the President. Since Congress must debate new plans and get the approval of the President, it takes time to get a new policy enacted.

The enactment of monetary policy, on the other hand, is streamlined. The Federal Open Market Committee meets eight times per year to discuss monetary policy—more often if necessary. Once it has decided that changes are called for, the FOMC can almost immediately enact policy through open market operations or discount rate changes.

Outside Lags

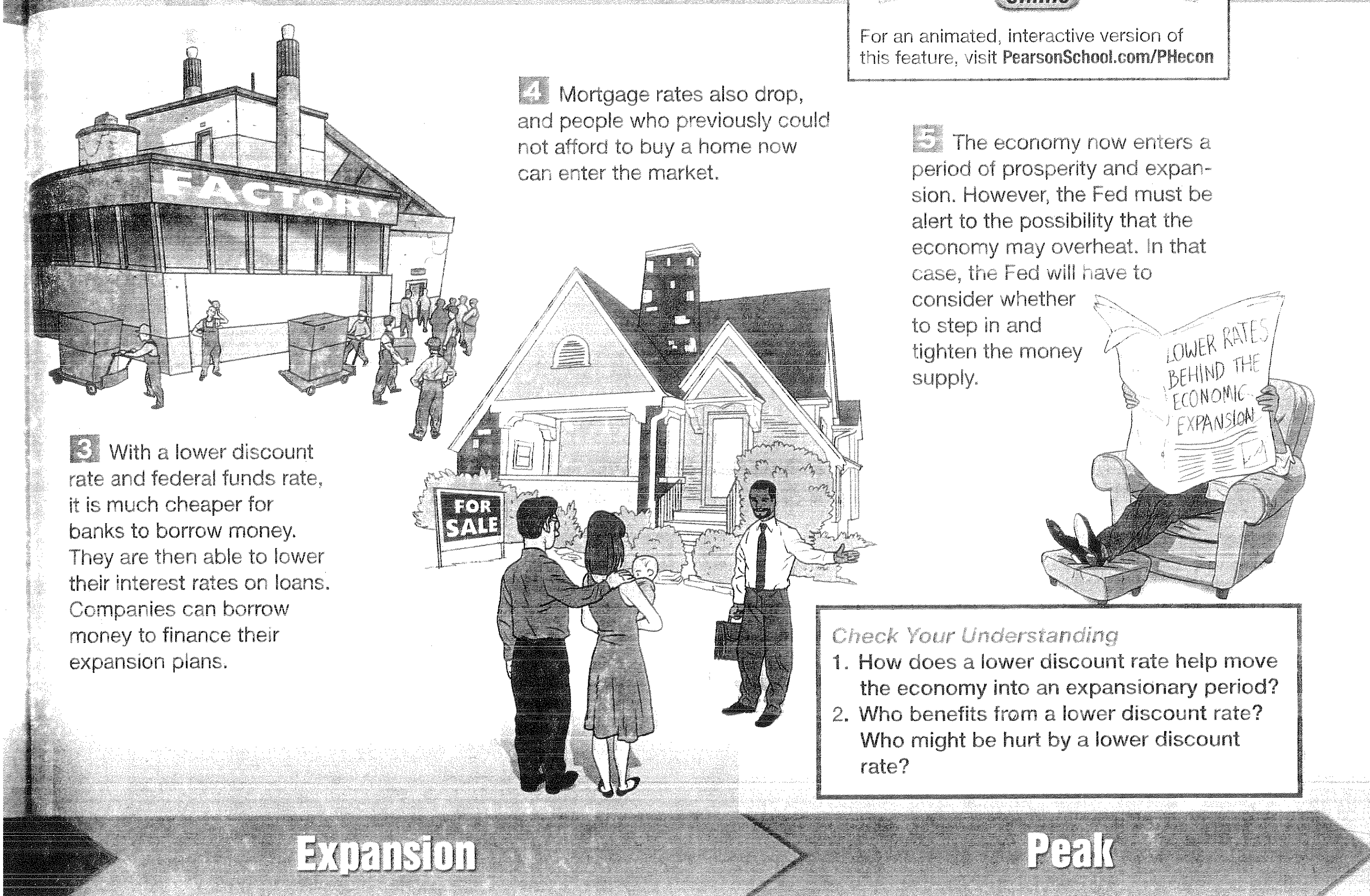
Once a new policy is determined, it takes time to become effective. This time period, known as the **outside lag,** also differs for monetary and fiscal policy. For fiscal policy, the outside lag lasts as long as is required for new government spending or tax policies to take effect and begin to affect real GDP and the inflation rate. This time period can be relatively short, as with a tax rebate that returns government revenues to households eager for spending money. One statistical model concluded that an increase in government spending would increase GDP after just six months.

Outside lags can be much longer for monetary policy, since they primarily affect business investment plans. Firms may require months or even years to make large investment plans, especially those involving new physical capital, such as a new factory. Thus, a change in interest rates may not have its full effect on investment spending for several years. This conclusion is supported by several studies that suggest that more than two years may pass before the maximum impact of monetary policy is felt.

outside lag the time it takes for monetary policy to have an effect

How the Economy Works online

For an animated, interactive version of this feature, visit **PearsonSchool.com/PHecon**



3 With a lower discount rate and federal funds rate, it is much cheaper for banks to borrow money. They are then able to lower their interest rates on loans. Companies can borrow money to finance their expansion plans.

4 Mortgage rates also drop, and people who previously could not afford to buy a home now can enter the market.

5 The economy now enters a period of prosperity and expansion. However, the Fed must be alert to the possibility that the economy may overheat. In that case, the Fed will have to consider whether to step in and tighten the money supply.

Check Your Understanding

1. How does a lower discount rate help move the economy into an expansionary period?
2. Who benefits from a lower discount rate? Who might be hurt by a lower discount rate?

Given the longer inside lag for fiscal policy and the longer outside lag for monetary policy, it is difficult to know which policy has the shorter total lag. In practice, partisan politics and budgetary pressures often prevent the President and Congress from agreeing on fiscal policy. Because of the political difficulties of implementing fiscal policy, we rely to a greater extent on the Fed to use monetary policy to soften the business cycle.

CHECKPOINT ***What problem can result from expansionary monetary policy that takes effect after the economy has already emerged from recession?***

Predicting Business Cycles

The Federal Reserve must not only react to current trends. It must also anticipate changes in the economy. How should policymakers decide when to intervene in the economy?

Monetary Policy and Inflation

You have already read that expansionary policy, if enacted at the wrong time, may push an economy into high inflation, thus reducing any beneficial impact. This is the chief danger of using an easy money policy to get the economy out of a recession.

An inflationary economy can be tamed by a tight money policy, but the timing is again crucial. If the policy takes effect as the economy is already cooling off on its own, the tight money could turn a mild contraction into a full-blown recession.

The decision of whether to use monetary policy, then, must be based partly on our expectations of the business cycle. Some recessions are short-run phenomena that will, in the long run, disappear. Some inflationary peaks may also be expected to last for the short run and end in the long run. Given the timing problems of monetary policy, in some cases it may be wiser to allow the business cycle to correct itself rather than run the risk of an ill-timed policy change.

If a recession is expected to turn into an expansion in a short time, the best course of action may be to let the economy correct itself. On the other hand, if we expect a recession to last several years, then most economists would recommend an active policy. So the question is this: How long will a recessionary or inflationary period last?

How Quickly Does the Economy Self-Correct?

Economists disagree on the answer to this question. Their estimates for the U.S. economy range from two to six years. Since the economy may take quite a long time to recover on its own from an inflationary peak or a recessionary trough, there is time for policymakers to guide the economy back to stable levels of output and prices.

CHECKPOINT ***How would the Fed most likely respond if it predicted that a recession would soon turn into an expansion?***

Approaches to Monetary Policy

In practice, the lags discussed here make monetary and fiscal policy difficult to apply. Interventionist policy, a policy encouraging action, is likely to make the business cycle worse if the economy self-adjusts quickly. Laissez-faire economists who believe that the economy will self-adjust quickly will recommend against enacting new policies. Economists who believe that economies emerge slowly from recessions, however, will usually recommend enacting fiscal and monetary policies to move the process along.

The rate of adjustment may also vary over time, making policy decisions even more difficult. This debate over which approach to take with monetary policy will probably never be settled to the satisfaction of all economists.

CHECKPOINT ***How do the two approaches to monetary policy differ from each other?***

Essential Questions Journal To continue to build a response to the Essential Question, go to your **Essential Questions Journal.**

SECTION 4 ASSESSMENT

Guiding Question

1. Use your completed concept web to answer this question: How does monetary policy affect economic stability?
2. **Extension** Suppose you asked for an advance on your salary or allowance and were told that you would have to pay interest on it. Would you still want the advance? Would you want the interest to come out of future paychecks or be deducted up front from your advance? This kind of example is a part of your personal monetary policy.

Key Terms and Main Ideas

3. What is **monetarism**?
4. Why would the Federal Reserve enact an **easy money policy**?
5. Why would it enact a **tight money policy**?
6. What are **inside lags,** and why do they occur?
7. Why does monetary policy have such long **outside lags**?

Critical Thinking

8. **Explain** What is the relationship between aggregate demand and GDP?
9. **Evaluate (a)** Why do business cycles make monetary policy difficult to time? **(b)** What could happen if monetary policy is enacted at the wrong time?
10. **Compare and Contrast (a)** How are inside and outside lags similar? **(b)** How are they different?

Quick Write

11. With a partner, prepare a debate on monetary policy. One of you should write an argument for an interventionist approach, encouraging action. The other should write an argument for a laissez-faire approach, discouraging action. Use information from your textbook to help develop your argument.

QUICK STUDY GUIDE

QUICK STUDY GUIDE

Chapter 16: The Federal Reserve and Monetary Policy

Section 1 How is the Federal Reserve System organized?

Section 2 What does the Federal Reserve do?

Section 3 How does the Federal Reserve control the amount of money in use?

Section 4 How does monetary policy affect economic stability?

Essential Question, Chapter 16
How effective is monetary policy as an economic tool?

Responsibilities of the Federal Reserve Board

Responsibilities That Serve Government	Maintain checking account for the Treasury Department
	Serve as financial agent for the Treasury Department
	Issue currency
Responsibilities That Serve the Banking System	Maintain check clearing system
	Monitor bank reserves
	Approve or disapprove proposed bank mergers
	Lend money to banks
Regulating Banks	Regulate the banking system
Regulating the Money Supply	Regulate the money supply to stabilize the economy
	Alter the discount rate
	Alter the federal funds rate
	Buy or sell government securities on the open market

Economic Dictionary

- monetary policy, *p. 419*
- reserves, *p. 421*
- reserve requirements, *p. 421*
- check clearing, *p. 426*
- bank holding company, *p. 426*
- federal funds rate, *p. 427*
- discount rate, *p. 427*
- money creation, *p. 429*
- required reserve ratio, *p. 430*
- money multiplier formula, *p. 430*
- excess reserves, *p. 431*
- prime rate, *p. 433*
- open market operations, *p. 433*
- monetarism, *p. 435*
- easy money policy, *p. 436*
- tight money policy, *p. 436*
- inside lag, *p. 437*
- outside lag, *p. 438*

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CHAPTER 16 ASSESSMENT

Self-Test online To test your understanding of key terms and main ideas, visit **PearsonSchool.com/PHecon**

Key Terms and Main Ideas

To make sure you understand the key terms and main ideas of this chapter, review the Checkpoint and Section Assessment questions and look at the Quick Study Guide on the preceding page.

Critical Thinking

1. **Conclude (a)** List three services the Federal Reserve offers banks and three regulations it places on banks. **(b)** Which service or regulation do you think is most important to the American banking system?
2. **Analyze (a)** Why are open market operations the most commonly used actions taken by the Fed? **(b)** What advantages do open market operations have over other monetary policy tools?
3. **Infer (a)** What effect would a reduction in the required reserve rate (RRR) have on banks? **(b)** What action of the Fed would cause a contraction of the money supply?
4. **Compare (a)** Describe the action of open market operations. **(b)** How do open market operations differ from other monetary policy tools?
5. **Analyze (a)** If the Federal Reserve Board were to implement an easy money policy, what actions would it take? **(b)** What would be the expected results of this policy? **(c)** What conditions could lead the Fed to take such actions?

Applying Your Math Skills

Calculating Money Creation

Pete received $3,000 from his grandparents as a graduation present to help him pay college tuition. He placed the money in Brighton Bank, whose reserve requirement ratio is 15 percent.

6. How much of Pete's deposit must Brighton Bank keep in reserve before it is able to lend money to someone else?
7. The bank loans the remaining amount to Sandra so that she can pay for extensive car repairs. How much does the bank lend Sandra?
8. Upon receiving Sandra's car repair payment, the repair shop deposits it in the Brighton Bank. How much of this money must the bank hold in reserve? How much can it lend to Roy?
9. What would be the total increase in the money supply based upon the initial cash deposit of $3,000 and the two loans?

Visit PearsonSchool.com/PHecon for additional math help.

Essential Question Activity

Essential Questions Journal To respond to the chapter Essential Question, go to your **Essential Questions Journal.**

10. Complete this activity to answer the Essential Question **How effective is monetary policy as an economic tool?** Work in groups to gather information about the use of monetary policy to stimulate, downsize, or otherwise stabilize economies. Using the worksheet in your Essential Questions Journal or the electronic worksheet available at **PearsonSchool.com/PHecon,** gather the following information:
    - **(a)** What steps did the United States take in order to prevent a recurrence of the Panic of 1907?
    - **(b)** How did the Federal Reserve Board attempt to deal with the Great Depression? How successful was it?
    - **(c)** How effective was the Federal Reserve Board in controlling the double-digit inflation of the late 1970s?
    - **(d)** How did the Fed under Alan Greenspan attempt to steer the U.S. economy between recession and inflation? How effective was it?
    - **(e)** What would happen to monetary policy if the United States abolished the Fed and returned to the gold standard?
11. **Modify** You are members of the Federal Reserve Board who have just heard the above reports prepared by your research committees. Based on this history of government attempts to use monetary policy to control the economy, what advice would you give the Chairman of the Board for his testimony next week before the Senate Finance Committee?
    - **(a)** Decide which is more likely today, inflation or recession.
    - **(b)** Describe the political pressures on the Fed in determining monetary policy.
    - **(c)** Come up with a plan for Fed action in the next four quarters.
    - **(d)** Describe the pitfalls the Fed faces in creating monetary policy.

DOCUMENT-BASED ASSESSMENT

Do bank mergers benefit or hurt the public?

Today, there are fewer than half as many banks in existence as there were 30 years ago. While bank mergers are profitable for bank shareholders, many worry that the trend might be less beneficial to consumers.

Document A

"Since 1988, there have been more than 13,500 applications for the formation, acquisition, or merger of bank holding companies or state-member banks reviewed by the Federal Reserve Board. Over this time, 25 of these applications have been denied, with eight of those failing to obtain Board approval involving unsatisfactory consumer protection and community needs issues. The low incidence of applications that have not received regulatory approval may be due to the fact that institutions seeking to expand their operations are typically in sound financial and managerial condition.... Maintaining robust and competitive banking markets is a critical objective in the Federal Reserve's review of banking applications."

—Sandra Braunstein, Federal Reserve Director of Consumer and Community Affairs, testimony before Congress, May 21, 2007

Document B

VIGELAND: "I remember back in the mid-90's there were a whole lot of bank takeovers and I wonder if there was any research done on whether consumers profit when a smaller bank is taken over by a bigger one."

D'ARISTA: "Well, they may profit in terms of convenience. The larger bank may have more branches and more ATMs and things of this sort. My concern at this point is concentration. It makes it a lot easier for a bank to set terms that are really at variance with the needs of a community when they are the only large or dominant institution in an area."

—Tess Vigeland and Jane D'Arista, "What Bank Mergers Mean For You," Marketplace Morning Report, January 18, 2008

Document C

"There's been a big bank merger, sir, so you now have a joint checking account with a Mr. Slavomir Bezparyadok of Zagreb."

SOURCE: www.cartoonstock.com

ANALYZING DOCUMENTS

Use your knowledge of opportunity costs and Documents A, B, and C to answer questions 1–3.

1. **Which of the following conclusions does Document A best support?**
   - **A.** The Federal Reserve has significantly limited the number of bank mergers.
   - **B.** Bank mergers generally do not affect the level of service customers receive.
   - **C.** Bank mergers benefit banks but do not benefit local communities.
   - **D.** The Federal Reserve has a definite set of standards for approving bank mergers.

2. **According to Document B, one major concern about bank mergers is the**
   - **A.** increased possibility of fraud.
   - **B.** reduced banking services.
   - **C.** higher bank fees.
   - **D.** possibility of monopoly.

3. **How would you describe the reaction of the bank customer in the cartoon?**
   - **A.** Worried that the bank merger will affect the quality of the service he receives
   - **B.** Confused because he does not know where Zagreb is
   - **C.** Angry because he is opposed to bank mergers
   - **D.** Upset that the bank has a new name

WRITING ABOUT ECONOMICS

People disagree about whether the Federal Reserve has done enough to control bank mergers. Use the documents on this page and on the Web site below to answer the question: ***Do bank mergers benefit or hurt the public?*** Use the sources to support your opinion.

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