



# Function

## Conducting Monetary Policy

*The Federal Open Market Committee sets U.S. monetary policy in accordance with its mandate from Congress: to promote maximum employment, stable prices, and moderate long-term interest rates in the U.S. economy.*

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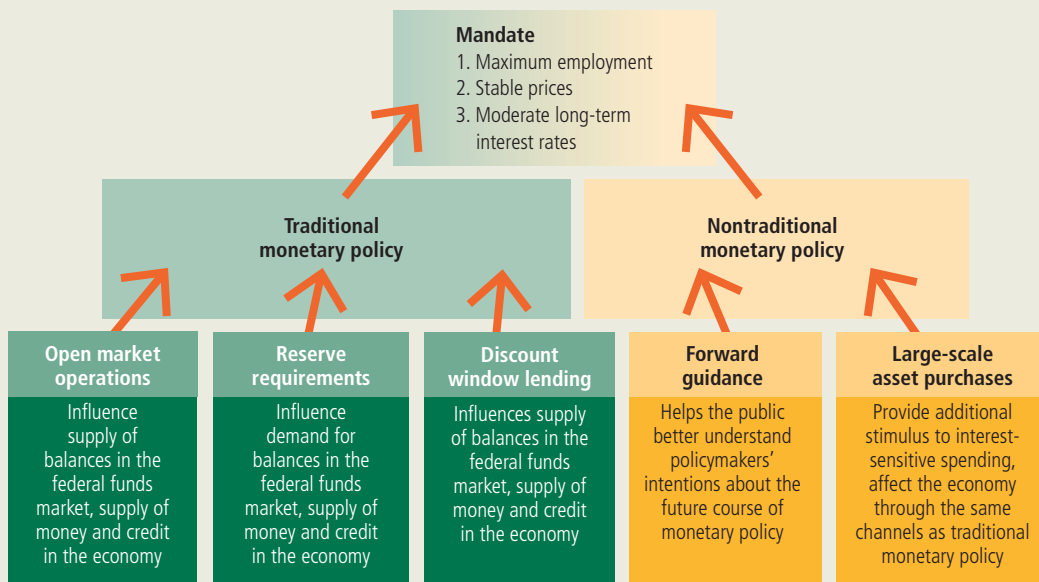
What is monetary policy? It is the Federal Reserve's actions, as a central bank, to achieve three goals specified by Congress: maximum employment, stable prices, and moderate long-term interest rates in the United States (figure 3.1).

The Federal Reserve conducts the nation's monetary policy by managing the level of short-term interest rates and influencing the availability and cost of credit in the economy. Monetary policy directly affects interest rates; it indirectly affects stock prices, wealth, and currency exchange rates. Through these channels, monetary policy influences spending, investment, production, employment, and inflation in the United States. Effective monetary policy complements fiscal policy to support economic growth.

While the Federal Reserve's monetary policy goals have not changed for many years, its tools and approach to implementing policy have evolved

**Figure 3.1. The Federal Reserve's statutory mandate**

The Federal Reserve conducts monetary policy in pursuit of three goals set for it by Congress. The three mandated goals are considered essential to a well-functioning economy for consumers and businesses.



*“Congress has entrusted the Federal Reserve with great responsibilities. Its decisions affect the well-being of every American and the strength and prosperity of our nation. That prosperity depends most, of course, on the productivity and enterprise of the American people, but the Federal Reserve plays a role too, promoting conditions that foster maximum employment, low and stable inflation, and a safe and sound financial system.”*

— Chair Janet Yellen, Nov. 14, 2013

over time. Prior to the financial crisis that began in 2007, the Federal Reserve bought or sold securities issued or backed by the U.S. government in the open market on most business days in order to keep a key short-term money market interest rate, called the federal funds rate, at or near a target set by the Federal Open Market Committee, or FOMC (figure 3.2). (The FOMC is the monetary policymaking arm of the Federal Reserve.) Changes in that target, and in investors’ expectations of what that target would be in the future, generated changes in a wide range of interest rates paid by borrowers and earned by savers.

To support the economy during the financial crisis that began in 2007 and during the ensuing recession, the FOMC lowered its target for the federal funds rate to near zero at the end of 2008. It then began to use less traditional approaches to implementing policy, including buying very large amounts of longer-term government securities to apply downward pressure on longer-term interest rates. In addition, the Federal Reserve’s communication of its assessment of the outlook for the economy and its intentions regarding the federal funds rate became a more important policy tool. In the fall of 2014, with the economy having made substantial progress toward maximum employment, the FOMC announced key elements of its plans for normalizing monetary policy when appropriate. In December 2015, the FOMC decided that economic conditions and the economic outlook warranted starting the process of policy normalization and voted to raise its target for the federal funds rate.

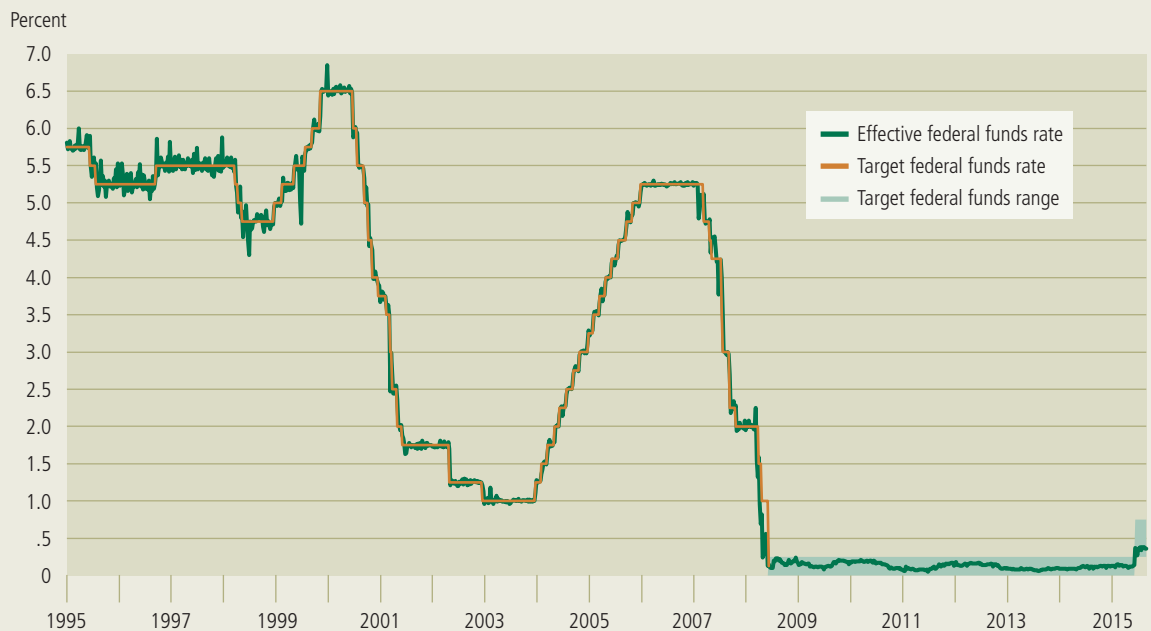
## The Federal Reserve's Monetary Policy Mandate and Why It Matters

The Federal Reserve was created by Congress in 1913 to provide the nation with a safer, more flexible, and more stable monetary and financial system. The Federal Reserve Act states that the Board of Governors and the FOMC should conduct monetary policy “so as to promote effectively the goals of maximum employment, stable prices, and moderate long-term interest rates.” This statutory mandate ties monetary policy to the broader goal of fostering a productive and stable U.S. economy.

The statutory mandate is achieved when most people looking for work are gainfully employed, and when prices for goods and services are, on average, relatively stable. Stable prices for goods

**Figure 3.2. The federal funds rate over time**

The effective federal funds rate is the interest rate at which depository institutions—banks, savings institutions (thrifts), and credit unions—and government-sponsored enterprises borrow from and lend to each other overnight to meet short-term business needs. The target for the federal funds rate—which is set by the Federal Open Market Committee—has varied widely over the years in response to prevailing economic conditions.



and services contribute importantly to achieving three economic outcomes: (1) maximum sustainable economic growth, (2) maximum sustainable employment, and (3) moderate long-term interest rates.

When the average of prices of a broad collection of goods and services is stable and believed likely to remain so, changes in the prices of individual goods and services serve as clear guides for efficient resource allocation in the U.S. economy. This then contributes to higher standards of living for U.S. citizens.

Moreover, stable prices encourage saving and capital formation because when the risks of erosion of asset values resulting from inflation—and the need to guard against such losses—are minimized, households are encouraged to save more and businesses are encouraged to invest more.

The Federal Reserve’s other responsibilities—promoting financial system stability ([section 4](#)), supervising and regulating financial institutions and activities ([section 5](#)), fostering payment and settlement system safety and efficiency ([section 6](#)), and promoting consumer protection and community development ([section 7](#))—contribute to the nation’s economic well-being by supporting a smoothly functioning financial system.

To promote public understanding of how the Federal Reserve interprets its statutory mandate, the FOMC released its “Statement on Longer-Run Goals and Monetary Policy Strategy” in January 2012. This statement explains the FOMC’s longer-run goals and its strategy for setting monetary policy to achieve them. In the statement, the FOMC also established a numerical longer-run goal for inflation: In the Committee’s judgment, an annual rate of increase of 2 percent in the price index for personal consumption expenditures—an important price measure for consumer spending on goods and services—is most consistent, over the longer run, with meeting the Federal Reserve’s statutory mandate to promote both maximum employment and price stability. The FOMC reaffirms its goals statement at its January meeting each year.

**Low and stable inflation.** Because the nation’s inflation rate over the longer run is primarily determined by monetary policy, the Federal Reserve can work directly to ensure that the U.S. economy benefits from low and stable inflation. Low and stable inflation helps the economy operate efficiently. When inflation is low and stable, individuals can hold money without having to worry that high inflation will rapidly erode its purchasing power. Moreover, households and businesses can make more accurate longer-run financial decisions about borrowing and lending and about saving and investment. Longer-term interest rates are also more likely to be moderate when inflation is low and stable.

In contrast, deflation—which occurs when the prices of goods and services are falling, on average—would increase the burden of household and business debts after adjusting for the decline in prices. Moreover, if inflation persisted near zero, short-term interest rates would likely also be quite low and monetary policymakers might not be able to reduce interest rates enough to support the economy when it is at risk of sliding into recession. (Note that the terms “policymakers,” “monetary policymakers,” and “FOMC policymakers” are used interchangeably in this section.) As a result, monetary policy that aims to keep inflation at 2 percent over the longer run helps to maintain a productive and well-functioning economy, leading to increases in employment and to higher standards of living for U.S. citizens. In this way, the goal of achieving maximum employment in the economy is closely linked with the goal of 2 percent inflation.

**Maximum employment.** The goal of maximum employment stands on an equal footing with price stability as an objective of monetary policy. However, policymakers recognize that factors other than monetary policy largely determine the maximum level of employment that can be sustained without leading to higher inflation. These factors include trends in the size and makeup of the population, changes in the types of jobs and skills needed in the workforce, and other policies such as those affecting education and training. Consequently, it would not be appropriate for the FOMC to specify a fixed goal for employment.

Policymakers consider a range of indicators in making their assessments of labor market conditions consistent with maximum employment, recognizing that those assessments are necessarily uncertain and may change. All FOMC participants present their views on the longer-run outlook for economic activity and unemployment four times each year, in their Summary of Economic Projections. In those projections, participants report the unemployment rate they expect over the longer run. For example, in the projections released in March 2016, FOMC participants' estimates of the longer-run normal unemployment rate ranged from 4.7 to 5.8 percent, with a median estimate of 4.8 percent.

The Federal Reserve's goals for maximum employment and 2 percent inflation are generally complementary. For example, when inflation is below 2 percent and the FOMC judges that conditions in the labor market are not as strong as those that the Committee views as consistent with maximum employment, the FOMC can keep interest rates temporarily low to promote higher employment and return inflation to 2 percent. Of course, the FOMC may, at times, face situations in which its goals are not complementary; for example, inflation might be above 2 percent even as employment is below its maximum level. The FOMC has indicated in its "Statement on Longer-Run Goals and Monetary Policy Strategy" that, in such a situation, it would follow a balanced approach to achieving its goals, taking into account how close or far employment is from its maximum level and how close or far inflation is from 2 percent. (The "Statement on Longer-Run Goals and Monetary Policy Strategy" is available on the Federal Reserve Board's website at [www.federalreserve.gov/monetarypolicy/](http://www.federalreserve.gov/monetarypolicy/).)

Because monetary policy actions influence inflation and employment with a lag, the FOMC's decisions are based on its assessments of the medium-term outlook for the economy and the potentially different time horizons over which employment and inflation could be expected to return to levels consistent with the Committee's mandate. In addition, the FOMC considers any risks associated with the economic outlook, including risks to the financial system that could impede attaining the Committee's goals.

#### Longer-run views aid monetary policy

FOMC participants present their views on the longer-run outlook for economic activity and unemployment four times each year in their Summary of Economic Projections, available on the Federal Reserve Board's website at

[www.federalreserve.gov/monetarypolicy/fomccalendars.htm](http://www.federalreserve.gov/monetarypolicy/fomccalendars.htm).



## How Monetary Policy Affects the Economy

### Monetary policy: Easing and tightening defined

The FOMC changes monetary policy primarily by raising or lowering its target for the federal funds rate, the interest rate for overnight borrowing between banks. Lowering the target rate represents an “easing” of monetary policy, while increasing the target rate is a “tightening” of policy.

FOMC policymakers set monetary policy to foster financial conditions they judge to be consistent with achieving the Federal Reserve’s statutory mandate of maximum employment, stable prices, and moderate long-term interest rates. Monetary policy affects the U.S. economy—and the achievement of the statutory mandate—primarily through its influence on the availability and cost of money and credit in the economy.

As conditions in the economy change, the Committee adjusts monetary policy accordingly, typically by raising or lowering its target for the federal funds rate. A change in the target for the federal funds rate normally will be accompanied by changes in other interest rates and in financial conditions more broadly; those changes will then affect the spending decisions of households and businesses and thus will have implications for economic growth, employment, and inflation.

### Effect of Changes in Federal Funds Rate Target on Financial Markets and Spending

**Short-term interest rates.** Short-term interest rates—for example, the rate of return paid to holders of U.S. Treasury bills or commercial paper (a short-term debt security) issued by private companies—are affected by changes in the level of the federal funds rate.

Short-term interest rates would likely decline if the FOMC reduced its target for the federal funds rate, or if unfolding events or Federal Reserve communications led the public to think that the FOMC would soon reduce the federal funds rate to a level lower than previously expected. Conversely, short-term interest rates would likely rise if the FOMC increased the funds rate target, or if unfolding events or Federal Reserve communications prompted the public to believe that the funds rate would soon be moved to a higher level than had been anticipated.



These changes in short-term market interest rates resulting from a change in the FOMC's target for the federal funds rate typically are transmitted to medium- and longer-term interest rates, such as those on Treasury notes and bonds, corporate bonds, fixed-rate mortgages, and auto and other consumer loans. Medium- and longer-term interest rates are also affected by how people expect the federal funds rate to change in the future. For example, if borrowers and lenders think, today, that the FOMC is likely to raise its target for the federal funds rate substantially over the next several years, then medium-term interest rates today will be appreciably higher than short-term interest rates.

Generally speaking, the effect on short-term interest rates of a single change in the FOMC's target for the federal funds rate will be somewhat larger than the effect on longer-term rates because long-term rates typically reflect the expected course of short-term rates over a long period. However, the influence of a change in the FOMC's target for the federal funds rate on longer-term interest rates can also be substantial if it has clear implications for the expected course of short-term rates over a considerable period.

**Longer-term interest rates and stock prices.** Changes in longer-term interest rates usually also affect stock prices, and because many individuals hold some stocks either directly or indirectly (through a mutual fund or as part of a pension plan), the change in stock prices will have implications for personal wealth. For example, if longer-term interest rates decline, then investors may decide to purchase stocks, thus bidding up stock prices. Moreover, lower interest rates may lead investors to anticipate that the economy will be stronger and profits will be higher in the future, and this expectation may add further to the demand for stocks.

**Dollar exchange rates and international trade.** Changes in monetary policy can also affect the value of the U.S. dollar in international currency markets. For example, if monetary policy causes interest rates to fall in the United States, yields on U.S. dollar assets will look less favorable to international investors. With U.S. dollar assets less attrac-

#### Open market purchases of longer-term securities

Prior to the 2007–09 financial crisis, the Federal Reserve's Open Market Desk typically bought Treasury securities with an average maturity of about three years. Since 2008, the Desk purchased securities with longer remaining maturities in order to increase the effects of the purchases on longer-term interest rates, and purchased mortgage-backed securities to reduce the cost and increase the availability of credit for the purchase of homes.

### What is dollar depreciation?

On August 15, 2008, \$1 could be exchanged for 110.48 Japanese yen (¥). Over the next several months, the U.S. dollar depreciated against the yen—a period when the FOMC was reducing its target for the federal funds rate. By mid-December 2008, \$1 would purchase only ¥90.68.

tive, international investors may invest less in dollar-denominated assets, lowering the value of the dollar in foreign exchange markets. A fall in the value of the dollar will tend to boost U.S. exports because it reduces the price that residents of other countries would need to pay in their own currencies for U.S. goods and services. Moreover, a dollar depreciation means that U.S. residents' purchases of imported products become more expensive, giving U.S. consumers and firms an incentive to purchase domestically produced goods and services instead of foreign ones.

**Effects on wealth and spending.** Regardless of whether they result from an actual or expected change in monetary policy, the changes in longer-term interest rates, stock prices, and the foreign exchange value of the dollar will affect a wide range of spending decisions made by households and businesses. For example, when the FOMC eases monetary policy (that is, reduces its target for the federal funds rate), lower interest rates on consumer loans will elicit greater spending on durable goods (long-lasting manufactured goods) such as televisions and automobiles. Lower mortgage rates will make buying a house more affordable and lead to more home purchases. In addition, lower mortgage rates will encourage homeowners to refinance their mortgages, freeing up some cash for other purchases. For individuals holding stocks either directly, through mutual funds, or as part of a retirement plan, higher stock prices will add to wealth, helping to spur more spending. Investment projects that businesses previously believed would be only marginally unprofitable will become attractive because of reduced financing costs, particularly if businesses expect their sales to rise.

### *Degree of Slack or Overheating*

FOMC policymakers, in determining the appropriate position or “stance” of monetary policy, must assess the current and likely future degree of slack or overheating in the economy. Because measuring the maximum sustainable level of employment or the potential output of the national economy is a complex undertaking, and inherent uncertainties surround any particular estimate, policymakers consider a wide range of indicators of resource utilization when thinking about appropriate monetary policy.

If resources are underused—for example, employment is below what policymakers judge to be its maximum sustainable level and seems likely to remain below—then they have scope for easing monetary policy to move the economy to its full employment level. Conversely, if resource utilization appears likely to remain above the level associated with maximum employment, then policymakers may judge that a tighter monetary policy is necessary to prevent inflation from rising above 2 percent.

### ***Other Factors Affecting Monetary Policy***

**Monetary policy affects the economy with a lag.** Although the channels through which the FOMC’s monetary policy decisions are transmitted to financial conditions and the economy are reasonably straightforward, monetary policy affects the economy with a lag. This means that an FOMC policy decision will not change consumer or business spending immediately. When the FOMC adjusts monetary policy, it expects that the adjustment will affect economic conditions *in the future*, and that those economic conditions will differ from what they would have been in the absence of the policy adjustment. Thus, in setting monetary policy, policymakers must not only evaluate current economic conditions, they must also forecast how the economy is likely to evolve over the next few years.

**Anticipated factors.** Monetary policy is not the only influence on the economy. Many other factors can affect spending, output, employment, and inflation.

Some of these factors can be anticipated and factored into the FOMC’s policymaking. For example, the government influences demand in the economy through changes in taxes and spending programs, which are often anticipated. Indeed, the economic effects of a tax cut may precede its actual implementation if businesses and households increase their spending in anticipation of lower taxes. In addition, forward-looking financial markets may build anticipated fiscal events into the level and structure of interest rates.

**Demand shocks.** Other factors that affect spending on goods and services can come as a surprise and can influence the economy in unforeseen ways. Examples of these “demand shocks” include shifts in consumer and business confidence or unexpected changes in the credit standards that banks and other lenders apply when they consider making loans. Once a demand shock is identified, monetary policy can be used to address it.

For instance, if consumer and business confidence falter and spending slows, the FOMC can ease monetary policy, lowering interest rates to help move spending back up. But because data and other information on the state of the economy are not available immediately, it can take time before a demand shock is identified and, given that policy actions operate with a lag, an even longer time before it is countered. Thus, demand shocks—even ones that can be addressed by monetary policy—can push the economy away from the Federal Reserve’s goals of maximum employment and price stability for a time.

**Supply shocks.** Other shocks can affect the production of goods and services and their prices by affecting the costs associated with production or the technology used in production.

Examples of such “supply shocks” include crop losses due to extreme weather and slowdowns in productivity growth relative to what would have occurred otherwise—these sorts of adverse supply shocks tend to raise prices and reduce output (and also employment). A disruption in the oil market that reduces the supply of oil and increases its price substantially can also raise other prices and reduce output because oil is an input to the production of many products. In the face of these adverse supply shocks, FOMC policymakers can attempt to counter the loss of output by easing monetary policy and making financial conditions more conducive to spending; alternatively, policymakers can attempt to counter the rise in prices by tightening policy.

As discussed, the FOMC has indicated in its “Statement on Longer-Run Goals and Monetary Policy Strategy” that, in such a situation, it would follow a balanced approach to achieving its goals, taking into account how close or far employment is from its maximum level and how close or far inflation is from 2 percent. Of course, the economy can also experience beneficial supply shocks, such as technological breakthroughs or reductions in the cost of important raw materials, and these beneficial supply shocks can both lower prices and boost output.

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## Monetary Policy in Practice

How are monetary policy decisions made? The members of the Board of Governors and the presidents of the 12 Federal Reserve Banks gather at the Board’s office in Washington, D.C., for eight regularly scheduled meetings of the FOMC each year to discuss economic and financial conditions and deliberate on monetary policy. If necessary, FOMC participants may also meet by video conference at other times. The Federal Reserve Bank of New York carries out the policy decisions made at FOMC meetings primarily by buying and selling securities as authorized by the FOMC.

### Federal Open Market Committee Meetings

At its meetings, the FOMC considers three key questions: How is the U.S. economy likely to evolve in the near and medium term, what is the appropriate monetary policy setting to help move the economy over the medium term to the FOMC’s goals of 2 percent inflation and maximum employment, and how can the FOMC effectively communicate its expectations for the economy and its policy decisions to the public? For a closer look at FOMC meeting deliberations and open market operations, see [box 3.1](#) and [figure 3.3](#), respectively.

### *Keeping Policy in Step with Evolving Economic Conditions*

As discussed, the FOMC’s overall approach to its decisionmaking is described in its statement on its longer-run goals and its strategy for

#### Overview of the Federal Reserve System and the FOMC

See [section 1](#) for an overview of the Federal Reserve System and the FOMC.

### Box 3.1. What Happens at an FOMC Meeting

*In preparation for each FOMC meeting, policymakers analyze economic and financial developments and update their forecasts of economic activity, employment, and inflation over the near and medium term. The materials that they and their staffs review include a wide range of U.S. and international economic and financial data, statistical and judgmental economic forecasts, and analyses of alternative policy approaches. Participants also consult business, consumer, and financial industry contacts to hear their perspectives on economic and financial conditions and the outlook.*

The staff of the Federal Reserve Banks collect and summarize information on current economic conditions in their Districts. An overall summary, commonly known as the Beige Book, is released to the public one week before the FOMC meeting. (The Beige Book is available at [www.federalreserve.gov/monetarypolicy/beigebook/default.htm](http://www.federalreserve.gov/monetarypolicy/beigebook/default.htm).) At about the same time, the staff of the Federal Reserve Board distributes to all FOMC participants its analysis of the economy, its economic forecasts, and an analysis of several policy options that span the range of plausible monetary policy responses to the current and expected economic situation. Economic research groups at the Reserve Banks separately brief their Bank presidents on relevant economic developments and policy choices. Using these materials, FOMC participants formulate their preliminary views on the

economic outlook and the appropriate policy response in preparation for their meeting in Washington.

During the first part of the meeting, the Federal Reserve governors and Reserve Bank presidents receive briefings that review the operations of the System Open Market Desk at the Federal Reserve Bank of New York and recent economic and financial developments in the United States and abroad. Each Bank president around the table then takes a turn presenting his or her views on economic conditions in his or her District, and both the presidents and governors offer their assessments of recent developments and the outlook.

After a staff presentation on options for monetary policy, participants again share their individual judgments of how policy should be conducted over the

period prior to the next FOMC meeting, how they expect policy to evolve over the medium run, and how the Committee's policy intentions should be communicated to the public. While all participants are included in the discussions, the policy decision rests with the voting members of the FOMC—the members of the Board of Governors, the president of the Federal Reserve Bank of New York, and four of the Bank presidents (on a rotating basis).

For more information on the FOMC and other key Federal Reserve entities, see [section 2](#). For an in-depth look at what happens at an FOMC meeting, see the speech that former Federal Reserve Governor Elizabeth A. Duke delivered in October 2010, “Come with Me to the FOMC,” available at [www.federalreserve.gov/newsevents/speech/duke20101019a.htm](http://www.federalreserve.gov/newsevents/speech/duke20101019a.htm).

setting monetary policy to achieve them. In practice, however, selecting policy tools to implement the FOMC's policy strategy is not clear cut. The U.S. and global economies are complex and evolving, and changes in monetary policy take time to affect economic activity, employment, and inflation.

Moreover, monetary policy is just one of the factors determining the pace of domestic economic activity, employment, and inflation. Accordingly, in making their assessment of how the economy is likely to evolve

in the near and medium term, policymakers take into account a range of other influences on the economy. Some can readily be built into economic forecasts. For example, federal, state, and local tax and spending policies have important and relatively predictable effects on household and business spending and are typically budgeted in advance. Even so, the range of uncertainty about the effects of some predictable factors may be wide.

And, of course, some economic developments—such as shifts in consumer and business confidence, changes in the terms under which banks extend loans, or disruptions to oil or agricultural supplies—can occur suddenly and with little warning. Finally, the actions of other central banks and fiscal authorities abroad also play a role through the effects on international trade and global financial flows and exchange rates.

### *How the FOMC Determines Its Monetary Policy Stance*

FOMC policymakers use a broad range of information to assess trends in the U.S. economy and to judge the appropriate stance of monetary policy. They analyze the most up-to-date economic data and review reports and surveys from business and financial market contacts. In addition, they use various tools for forecasting economic developments and evaluating the effects of monetary policy decisions. Statistical models can help analyze how changes in economic conditions may affect the outlook for economic activity, employment, and inflation, and how the level of the target federal funds rate might respond to those changes. Simulations of these models, including results using a variety of policy rules that relate the setting of the target federal funds rate to the objectives of monetary policy, can provide some indication of how monetary policy is likely to affect the economy over the longer run.

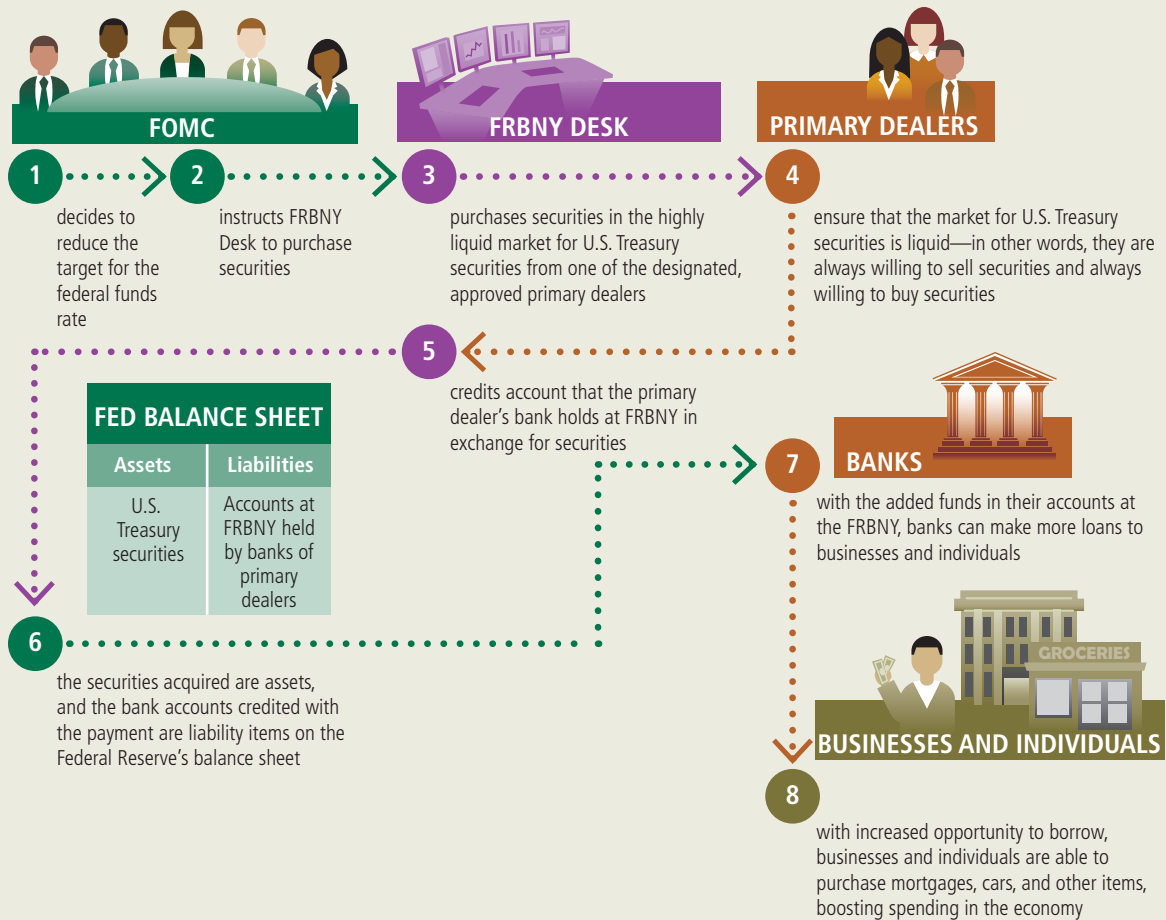
Because policy actions take time to affect the economy and inflation, policymakers may assess the effects of their policies by looking at various indicators that are likely to respond more quickly to changes in the federal funds rate. Over the years, policymakers have at times monitored indicators such as the monetary aggregates (measures of the

#### **Using statistical models in monetary policy analysis**

Federal Reserve staff use statistical economic models to help the FOMC forecast economic developments and evaluate the effects of monetary policy decisions. For more detail on these models, see “The FRB/US Model: A Tool for Macroeconomic Policy Analysis” at [www.federalreserve.gov/econresdata/notes/feds-notes/2014/a-tool-for-macro-economic-policy-analysis.html](http://www.federalreserve.gov/econresdata/notes/feds-notes/2014/a-tool-for-macro-economic-policy-analysis.html).

### Figure 3.3. How the Federal Reserve conducts open market operations

When the Federal Open Market Committee (FOMC) sets monetary policy that, for example, requires adding liquidity to the banking system to spur economic activity, it instructs the Federal Reserve Bank of New York's (FRBNY) Open Market Desk to purchase U.S. Treasury securities in the open market.



Note: A more detailed explanation of open market operations, including information on the Open Market Desk's purchases and sales of securities, is available on the website of the Federal Reserve Bank of New York, [www.newyorkfed.org/markets/](http://www.newyorkfed.org/markets/).

stock of money), changes in Treasury yields and private-sector interest rates and the levels of those rates for securities that mature at different times in the future, and exchange rates. Importantly, to be valuable to policymakers, these and other possible policy guides must have a close, predictable relationship with the ultimate goals of monetary policy, but this has not always been the case.



## *Forward Guidance Signals the FOMC's Policy Intentions*

In addition to adjusting the target for the federal funds rate, the FOMC also can influence financial conditions by communicating how it intends to adjust policy in the future. Since March 2009, when the federal funds rate was effectively at its lower bound, this form of communication, called “forward guidance,” has been an important signal to the public of the FOMC’s policy intentions. For example, when the FOMC said in its March 2009 postmeeting statement that it intended to keep the target for the federal funds rate “exceptionally low” for “an extended period,” its goal was to cause financial market participants to adjust their expectations to assume a longer period of lower short-term interest rates than they had previously expected and, thus, put downward pressure on long-term interest rates to provide more support for the economic recovery.

Between 2009 and 2014, the FOMC revised its forward guidance several times, strengthening its intent to put downward pressure on interest rates when the economy appeared to be operating at a lower level than desirable and, more recently, revising it to clarify how, when the time was appropriate, the Committee would make the decision to raise the target federal funds rate.

## **What Monetary Policymakers Say to the Public**

While the use of forward guidance as a policy tool is relatively new, the Federal Reserve has had a long-standing commitment to communicate regularly with the public and Congress concerning its monetary policy activities and the pursuit of its mandate. While some communications are required by statute, most represent an effort by the Federal Reserve to increase the transparency of its policy decisions and operations.

**Statements after FOMC meetings.** Since 1994, the Federal Reserve has issued statements announcing FOMC decisions. In recent years, those statements have summarized the Committee’s judgment about the appropriate conduct of monetary policy over the intermeeting

### **FOMC postmeeting statements**

The release of postmeeting communications often provides the broader context for FOMC policy decisions. See the FOMC’s most recent postmeeting statement at [www.federalreserve.gov/monetarypolicy/fomccalendars.htm](http://www.federalreserve.gov/monetarypolicy/fomccalendars.htm). For more detailed information on the history of FOMC communications, see “A Modern History of FOMC Communication: 1975–2002” at [www.federalreserve.gov/monetarypolicy/files/FOMC20030624memo01.pdf](http://www.federalreserve.gov/monetarypolicy/files/FOMC20030624memo01.pdf).

period and provided guidance about the factors that the FOMC will consider in setting policy as economic and financial developments evolve. The postmeeting statements also indicate which FOMC members voted for an action, and which members, if any, dissented from it. At times, the FOMC also issues broader statements that represent the consensus of almost all participants. An example of a consensus statement is the “Statement on Longer-Run Goals and Monetary Policy Strategy” that was discussed earlier in this section.

**Meeting minutes.** Detailed minutes of FOMC meetings are released three weeks after each meeting. The minutes cover all policy-related topics that receive a significant amount of attention during the meeting. They describe the views expressed by the participants, the risks and uncertainties attending the outlook, and the reasons for the Committee’s decisions. The minutes can help the public interpret economic and financial developments and better understand the Committee’s decisions. As an official record of the meeting, the minutes identify all attendees and include votes on all authorized policy operations.

**Summary of Economic Projections.** Beginning in late 2007, Federal Reserve policymakers began to publish economic projections, the “Summary of Economic Projections,” four times each year. Those projections, published along with the FOMC postmeeting statement, now provide participants’ assessments of the most likely outcomes for real gross domestic product growth, the unemployment rate, inflation, and the federal funds rate over the medium term and over the longer run. Each participant bases his or her projection on his or her assessment of appropriate monetary policy and assumptions about the factors likely to affect economic outcomes. In April 2011, the Federal Reserve Chair began to hold press briefings following each of the four FOMC meetings per year at which participants provide their projections. At the press conferences, the Chair discusses current and prospective monetary policy and presents a summary of the participants’ projections.

#### **FOMC postmeeting press conferences**

In April 2011, the Federal Reserve Chair began to hold press briefings following each of the four FOMC meetings per year at which participants provide their economic projections. For more information, see [www.federalreserve.gov/monetarypolicy/fomccalendars.htm](http://www.federalreserve.gov/monetarypolicy/fomccalendars.htm).

**Testimonies to Congress, speeches, and transcripts.** The FOMC’s communication of its policy actions and intentions extends well beyond

the postmeeting statements and minutes. By statute, the Federal Reserve Chair testifies twice each year on economic developments and monetary policy before the congressional committees that oversee the Federal Reserve. At those times, the Board of Governors delivers the semiannual *Monetary Policy Report* to Congress that discusses the conduct of monetary policy and economic developments and prospects for the future. In addition, the Chair and other Board members appear frequently before Congress to report and answer questions on economic and financial market developments and on monetary and regulatory policy. Many Federal Reserve policymakers regularly give public speeches. And a wide range of documents, including transcripts of the FOMC meetings, is made available after a five-year lag.

**Communicating with other organizations.** Federal Reserve officials also maintain regular channels of communication with officials of other U.S. and foreign government agencies, international organizations, and foreign central banks on subjects of mutual concern.

Although the Federal Reserve’s policy objectives are limited to economic outcomes in the United States, it is mutually beneficial for macroeconomic and financial policymakers in the United States and in other countries to maintain a continuous dialogue. This dialogue enables the Federal Reserve to better understand and anticipate influences on the U.S. economy that emanate from abroad. It also helps the Federal Reserve and other central banks work together to address common economic challenges and threats to the global financial system.

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## Monetary Policy Implementation

### The Federal Funds Market

At the end of any business day, a depository institution may need to borrow funds overnight to make payments on its own behalf or on behalf of its customers, to cover a shortfall in its balances held at the

#### What is a depository institution?

Depository institutions (also referred to as banks interchangeably here) include commercial banks, savings institutions, credit unions, and U.S. branches and agencies of foreign banks. In early 2016, there were more than 12,500 depository institutions in the United States with accounts at the Federal Reserve.

### Box 3.2. Banks Must Meet Reserve Requirements Set by the Federal Reserve Board

*The Federal Reserve Board, by law, sets reserve requirements on all depository institutions: They are required to hold cash in their vaults or reserve balances at the Federal Reserve (or a combination of the two) in an amount equal to a certain fraction of their deposits.*

Since the early 1990s, these requirements have been applied only to the transaction deposits held at banks—that is, accounts such as checking accounts or interest-bearing accounts that offer unlimited checking privileges. The Board sets a required reserve ratio within limits prescribed by the Federal Reserve Act, and that ratio determines the fraction of deposits that a bank must hold as vault cash or reserve balances. The Federal Reserve infrequently adjusts the required reserve ratio.

A bank may choose to hold reserve balances in excess of the requirement as a means of protecting against an overdraft in its Federal Reserve account or to reduce the risk of failing to hold enough balances to satisfy its reserve requirement. More generally, a bank's desired level of reserve balances is likely to depend upon the volume of, and uncertainty about, payments flowing through its Federal Reserve account.

To read more about reserve requirements, see the Federal Reserve Board's

website at [www.federalreserve.gov/monetarypolicy/reservereq.htm](http://www.federalreserve.gov/monetarypolicy/reservereq.htm). Additional discussion about the evolution of reserve requirements can be found in the Federal Reserve Bulletin reports "Open Market Operations in the 1990s," [www.federalreserve.gov/pubs/bulletin/1997/199711lead.pdf](http://www.federalreserve.gov/pubs/bulletin/1997/199711lead.pdf) and "Reserve Requirements: History, Current Practice, and Potential Reform," [www.federalreserve.gov/monetarypolicy/0693lead.pdf](http://www.federalreserve.gov/monetarypolicy/0693lead.pdf).

Federal Reserve, or to meet reserve requirements imposed by the Federal Reserve Board (see [box 3.2](#)). An institution that finds itself with excess funds on hand at the end of the business day can arrange to lend those funds overnight to another depository institution in the federal funds market. When banks borrow and lend in the federal funds market, the exchange of funds is reflected in the accounts they hold at the Federal Reserve—funds banks hold in these accounts are known as reserve balances. Since late 2008, the Federal Reserve has paid interest on banks' reserve balances (for a discussion, see [box 3.3](#)).

In many ways, this process is analogous to what happens when an individual makes a private loan to another individual. When one person borrows from another, balances from the checking account of the lender are transferred to the checking account of the borrower. Similarly, when a depository institution lends funds to another depository institution in the federal funds market, reserve balances in the lender's "checking account" at the Federal Reserve are transferred to the Federal Reserve account of the borrower.

To be more precise, only depository institutions (banks, savings institutions, credit unions, and U.S. branches of foreign banks) and selected other institutions (the Federal Home Loan Banks and other government-sponsored enterprises) are permitted to hold accounts at the Federal Reserve. Banks use these accounts to make and receive payments in much the same way that a customer would use his or her checking account at a commercial bank. The interest rate on federal funds transactions is called the federal funds rate. For many years before the 2007–09 financial crisis, the FOMC carried out monetary policy by setting a target for the federal funds rate.

## Monetary Policy before the 2007–09 Financial Crisis

**Open market operations.** Over the years, the Federal Reserve has relied upon open market operations to manage conditions in the federal funds market and to keep the federal funds rate at the target level set by the FOMC. The Open Market Desk (the Desk) at the Federal Reserve Bank of New York conducts open market operations by buying or selling securities issued or guaranteed by the U.S. Treasury or U.S. government agencies (figure 3.4).

### Box 3.3. The Federal Reserve Pays Interest on Required Reserve Balances and Excess Balances

*In 2006, Congress authorized the Federal Reserve to pay interest on reserve balances beginning in 2011. However, the Emergency Economic Stabilization Act of 2008 accelerated this authority, and the Federal Reserve began paying interest on reserve balances in October 2008. The Federal Reserve also pays interest on balances held in excess of the reserve requirement. The interest rates on reserve balances and on excess balances are both set by the Board of Governors.*

The payment of interest on balances maintained to satisfy reserve balance requirements is intended to eliminate or reduce the implicit tax that reserve requirements impose on depository institutions. The interest rate paid on excess balances gives the Federal Reserve an additional tool for the

conduct of monetary policy. By raising or lowering the interest rate paid on excess reserves (the IOER rate), the Federal Reserve can change the attractiveness of holding excess balances and thus affect the federal funds rate and other short-term market interest rates.

More detailed information on the interest on required reserve balances and excess reserve balances is available on the Federal Reserve Board's website at [www.federalreserve.gov/monetarypolicy/reqresbalances.htm](http://www.federalreserve.gov/monetarypolicy/reqresbalances.htm).

The Federal Reserve Act requires that the Desk conduct its purchases and sales in the open market. To do so, the Desk has established relationships with securities dealers known as primary dealers that are active in the market for U.S. government securities. For example, in an open market purchase, the Desk would buy eligible securities from primary dealers (at prices determined in a competitive auction). The Federal Reserve would pay for those securities by crediting the reserve accounts that the banks used by the primary dealers maintain at the Federal Reserve. (The banks, in turn, would credit the dealers' bank accounts.) In this way, the open market purchase leads to an increase in reserve balances. A greater supply of reserve balances would tend to put downward pressure on the federal funds rate, as banks would be willing to lend their excess funds at somewhat lower interest rates. In contrast, an open market sale would reduce reserve balances and put upward pressure on the federal funds rate. Each business day, the

**Figure 3.4. Traditional monetary policy: Tools for achieving the targeted federal funds rate**

Tool	What is it?	How does it work?	Who uses it?
<b>Reserve requirements</b>	The percentage of deposits that commercial banks and other depository institutions must hold as reserves.	Reserve requirements create a stable demand for reserves. The Federal Reserve then adjusts the supply of reserves through open market operations to keep the level of the federal funds rate close to the target rate established by the Federal Open Market Committee (FOMC).	Determined by the Board of Governors (within ranges specified by the Federal Reserve Act).
<b>Open market operations</b>	Purchases or sales—temporary or permanent—of U.S. government and agency securities in the open market.	Each purchase or sale of securities directly affects the volume of reserves in the banking system and thus the level of the federal funds rate.	Directed by the FOMC; conducted by the Federal Reserve Bank of New York (in competitive operations with primary dealers).
<b>Discount window lending</b>	Depository institutions can borrow from a Federal Reserve Bank.	Credit provided by the Federal Reserve's discount window supplies balances and can help address pressures in the federal funds market.	Reserve Banks lend to depository institutions; interest rate charged is determined by the Board of Governors.

### Box 3.4. Discount Window Lending as a Monetary Policy Tool

*When the Federal Reserve Act became law in 1913, the Federal Reserve was authorized to lend only to banks that were members of the Federal Reserve System. At the time, this included all nationally chartered banks and those state-chartered banks that had chosen to join the System. Today, by law, all depository institutions that offer transactions accounts subject to reserve requirements can borrow from the Federal Reserve.*

At first, the Federal Reserve lent primarily by “discounting” short-term commercial loans owned by banks. In essence, the Federal Reserve made a loan by purchasing the commercial loans for less than their face value, with the difference between the purchase price and the face value (the discount) representing interest the Federal Reserve received on its loan. Originally, these loans were made at a special lending window at each of the Reserve Banks called the discount window. For that reason, over time, Federal Reserve lending to depository institutions became known as “discount window lending.” Today, most extensions of credit by the Federal Reserve are made in the form of advances—loans backed by collateral pledged by the borrower—rather than as discounts, but the term “discount window” is still used to refer to the

facilities through which the Federal Reserve lends to depository institutions. Because a bank would be unlikely to borrow in the federal funds market at an interest rate much higher than the discount rate, the availability of discount window loans at an interest rate above the targeted federal funds rate has acted as an upper limit on the funds rate and helped to keep it close to the FOMC’s target. The volume of discount window lending and borrowing is usually relatively small.

Depository institutions have access to three types of discount window lending—primary credit, secondary credit, and seasonal credit.

**Primary credit** is available to generally sound depository institutions on a very short-term basis, typically overnight, but at times for longer periods. To

assess whether a depository institution is in sound financial condition, its Reserve Bank regularly reviews the institution’s condition, using supervisory ratings and data on the adequacy of the institution’s capital. Depository institutions are not required to seek alternative sources of funds before requesting occasional advances of primary credit, but primary credit is expected to be used as a backup source of funding rather than a routine one. Because primary credit is the Federal Reserve’s main discount window program, the Federal Reserve and others in the banking industry at times use the term “discount rate” specifically to refer to the primary credit rate.

**Secondary credit** may be available to depository institutions that are eligible to borrow from the discount window but that do not meet the criteria for  
*(continued on the next page)*

Desk would determine the quantity of open market operations necessary to keep the federal funds rate at the FOMC’s target after taking into account factors in the market for federal funds, including banks’ estimated funding needs.

**Discount window lending.** If a depository institution finds that its need for overnight funding cannot be satisfied in the federal funds market or similar markets, it can borrow from the Federal Reserve’s discount window, and the proceeds of the loan would be added to the institution’s balance in its reserve account at the Federal Reserve. Rules

primary credit. Secondary credit is extended on a very short-term basis, typically overnight. The financial condition of secondary credit borrowers is generally less sound than the financial condition of primary credit borrowers. For that reason, the rate on secondary credit has typically been 50 basis points above the primary credit rate—to compensate for the greater risk of credit loss, although the spread can vary as circumstances warrant. Secondary credit is available to help a depository institution meet backup liquidity needs when its use is consistent with the borrowing institution’s timely return to a reliance on market sources of funding or with the orderly resolution of a troubled institution’s difficulties. Secondary credit may not be used to fund an expansion of the borrower’s assets.

**Seasonal credit** is designed to help small depository institutions manage significant seasonal swings in their loans and deposits. Seasonal credit is available to depository institutions that can demonstrate a clear pattern of recurring swings in funding needs

throughout the year—these institutions are usually located in agricultural or tourist areas. Borrowing longer-term funds from the discount window during periods of seasonal need allows institutions to carry fewer liquid assets during the rest of the year and makes more funds available for local lending. The seasonal credit rate is based on market interest rates.

**Credit terms.** By law, depository institutions that have either transaction accounts or nonpersonal time deposits that are subject to reserve requirements may borrow from the discount window. U.S. branches and agencies of foreign banks with transaction accounts or nonpersonal time deposits are also eligible to borrow under the same general terms and conditions that apply to domestic depository institutions.

By law, all discount window loans must be secured to the satisfaction of the lending Reserve Bank. The Federal Reserve generally accepts as collateral for discount window loans any assets that meet regulatory standards

for sound asset quality. This category of assets includes most performing loans and most high-grade securities. Reserve Banks must be able to establish a legal right to be first in line to take possession of and, if necessary, sell all collateral that secures discount window loans in the event of default. The collateral cannot be an obligation of the pledging institution.

Assets accepted as collateral are assigned a lendable value deemed appropriate by the Reserve Bank. Lendable value is the maximum loan amount that can be backed by that asset and is calculated as the value of the asset, less a deducted amount referred to as the “haircut”—that is, the loan is limited relative to the value of the collateral to provide a cushion in case the value of the collateral falls. This haircut helps to protect the Federal Reserve from loss should the borrower fail to repay the loan.

governing access to the discount window are established by the Federal Reserve Act and by the regulations issued by the Board of Governors; after posting collateral, depository institutions can borrow from the discount window at interest rates set by the Reserve Banks, subject to review and determination by the Board.

Since early 2003, interest rates for discount window loans have been set above the target for the federal funds rate. As a result, depository institutions have generally borrowed from the discount window in significant volume only when overall market conditions have tightened enough to push the federal funds rate above the discount rate. Prior to



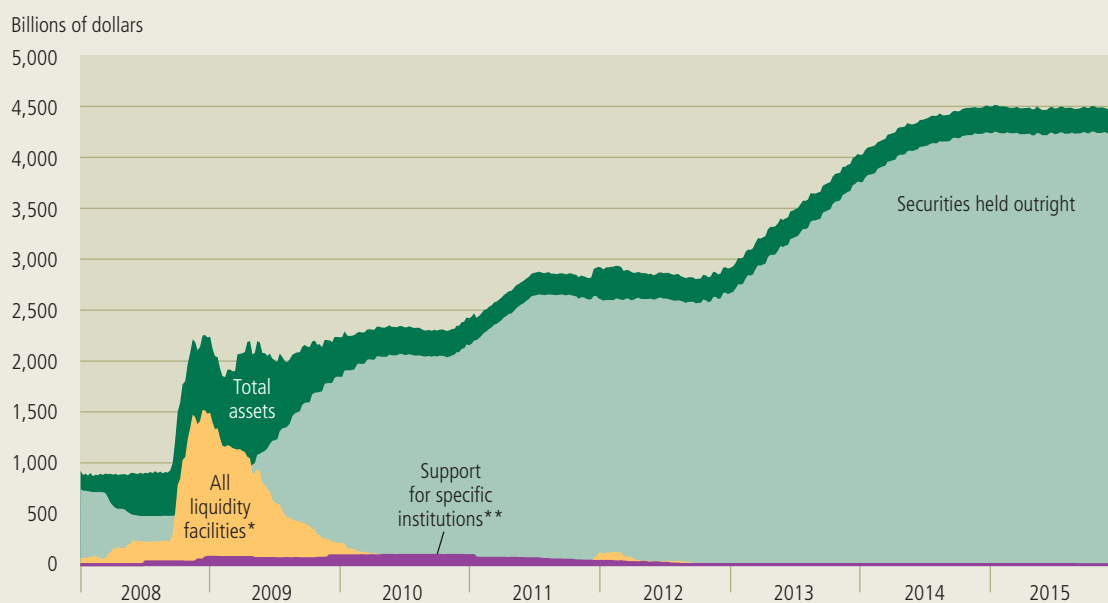
the financial crisis that began in the summer of 2007, discount window borrowing was infrequent (see [box 3.4](#) for additional detail).

## Monetary Policy during and after the 2007–09 Financial Crisis

The crisis in global financial markets that began during the summer of 2007 became particularly severe during 2008. One way that the Federal Reserve responded to the crisis was by expanding its lending through the discount window to banks that were experiencing shortages of liquidity. In addition, the Federal Reserve introduced a variety of programs, using legal authority provided by Congress in several sections

**Figure 3.5. Selected assets of the Federal Reserve, August 2007–December 2015**

As the 2007–09 crisis intensified, the Federal Reserve introduced a variety of programs—and expanded its balance sheet in the process—to address financial institutions’ need for short-term liquidity and strains in many markets.



\* “All liquidity facilities” includes term auction credit, primary credit, secondary credit, seasonal credit, Primary Dealer Credit Facility, Asset-Backed Commercial Paper Money Market Mutual Fund Liquidity Facility, Term Asset-Backed Securities Loan Facility, Commercial Paper Funding Facility, and central bank liquidity swaps.

\*\* “Support for specific institutions” includes Maiden Lane LLC, Maiden Lane II LLC, Maiden Lane III LLC, and support to American International Group (AIG).

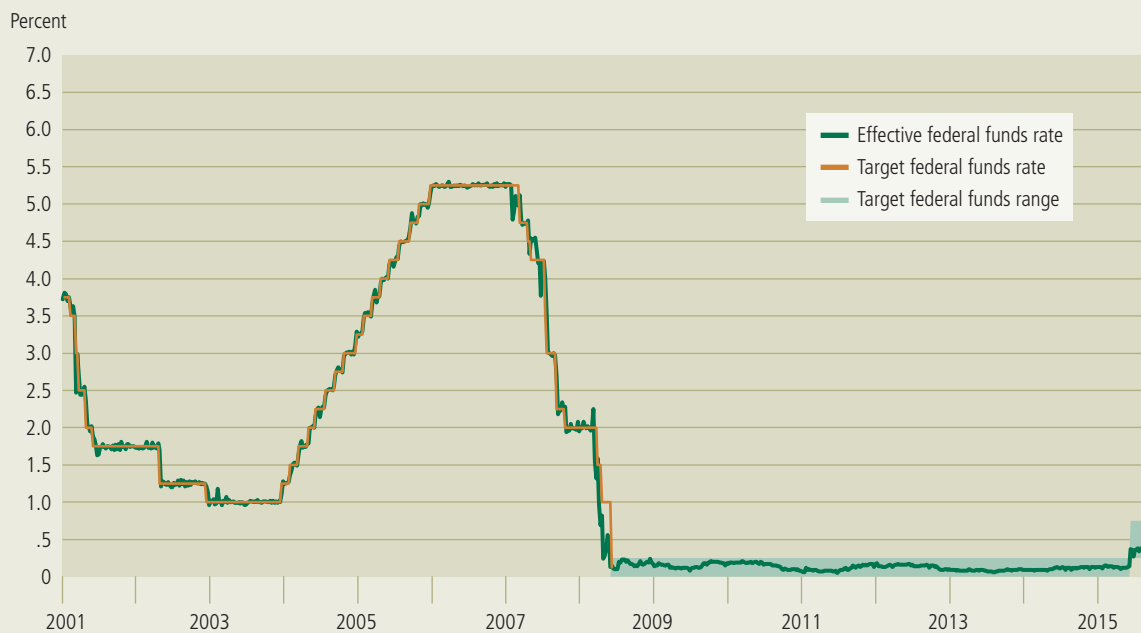
Source: Board of Governors of the Federal Reserve System, statistical release H.4.1, “Factors Affecting Reserve Balances,” [www.federalreserve.gov/releases/h41](http://www.federalreserve.gov/releases/h41).

of the Federal Reserve Act, which were designed to address financial institutions' need for short-term liquidity and strains in many markets.

The Federal Reserve also established dollar liquidity swap arrangements with several foreign central banks to address dollar funding pressures abroad. These programs are discussed in greater detail in [box 3.5](#) "Extraordinary Liquidity Provision during the 2007–09 Financial Crisis." Together, these policy initiatives greatly increased the size of the Federal Reserve's balance sheet as shown in [figure 3.5](#). (For more detail on the balance sheet, see the discussion on [page 52](#) and [box 3.6](#) on page 53 "Understanding the Federal Reserve's Balance Sheet.")

### Figure 3.6. Reaching the "zero bound"

The federal funds rate neared its "zero bound" in December 2008. Around that time, the Federal Reserve began to use nontraditional policy tools to boost economic activity.



Source: Intended federal funds rate. See the Monetary Policy section of the Board's website, [www.federalreserve.gov](http://www.federalreserve.gov). For the federal funds rate target, see [www.federalreserve.gov/monetarypolicy/openmarket.htm](http://www.federalreserve.gov/monetarypolicy/openmarket.htm). For the federal funds effective rate, see <https://apps.newyorkfed.org/markets/autorates/fed%20funds>.

### Box 3.5. Extraordinary Liquidity Provision during the 2007–09 Financial Crisis

*In response to the financial crisis, the Federal Reserve provided liquidity to firms and markets in a variety of ways. Initially, the Federal Reserve eased the terms on primary credit, the principal type of discount window credit that the Federal Reserve extends to depository institutions. As the crisis intensified, however, the Federal Reserve provided liquidity in nontraditional ways to firms and markets outside of the banking system.*

In some cases, the Federal Reserve used its regular authorities in new ways. Even after easing the terms on primary credit, banks were highly reluctant to borrow primary credit out of concern that borrowing from the Federal Reserve would indicate that the bank was experiencing financial difficulties. As a result, the eased terms on primary credit did not significantly reduce the pressures on bank funding markets. To address the banks' concerns, the

Federal Reserve conducted regular auctions of fixed quantities of discount window credit. Because the credit was extended through a market mechanism, and because funds were provided several days after the auction, banks were less concerned that borrowing would signal weakness and were less reluctant to borrow. At the same time, because dollar funding markets are global, strains in foreign dollar markets were contributing to volatility in U.S.

financial markets. To counter these strains, the Federal Reserve established foreign currency swap lines with several foreign central banks. Under the lines, the Federal Reserve provided the foreign central bank with dollars, which those central banks could lend to financial institutions in their local markets, and received foreign currency in exchange.

During the financial crisis, the Federal Reserve used its emergency lending

*(continued on the next page)*

Another way that the Federal Reserve responded to the crisis was through its traditional policy tool, the federal funds rate. Beginning in the fall of 2007, the FOMC cut its target for the federal funds rate and by the end of 2008, that target had been reduced from 5¼ percent to a range of 0 to ¼ percentage point (figure 3.6). While this monetary easing was substantial, with the federal funds rate at nearly zero, the FOMC could no longer rely on reducing that rate to provide much further support for the economy.

Although the Federal Reserve's initial responses to the crisis helped financial markets to recover and function more normally, the recession in the U.S. economy that began in December of 2007 was particularly severe and long-lasting. With the federal funds rate near zero, the FOMC turned to two less conventional policy measures—large-scale asset purchases and forward guidance.

**Large-scale asset purchases.** In late 2008, the Federal Reserve began purchasing longer-term securities through a series of large-scale asset

authority to establish broad-based lending facilities to provide liquidity to financial markets other than the interbank market that were important for the provision of credit to U.S. businesses and households. In particular, many critical financial institutions that depended on short-term funding were not depository institutions and so could not borrow from the discount window when the liquidity of short-term funding markets deteriorated. Moreover, a material fraction of business and household loans were funded through securitizations; when markets for securitized products deteriorated, the supply of credit to businesses and households declined, further weakening the economy. Federal Reserve emergency lending facilities were

established to provide liquidity to the market for repurchase agreements, or repos, the commercial paper market, and the asset-backed securities market. A facility was also established to help money market mutual funds meet the heavy withdrawals that occurred after the failure of Lehman Brothers.

Lastly, the Federal Reserve used its emergency authority to provide support to certain specific institutions in order to avert disorderly failures that could have led to even more severe dislocations and strains for the financial system as a whole and harmed the U.S. economy.

All Federal Reserve lending during the financial crisis was well collateralized

and every loan was repaid in full, on time, and with interest. In most cases, the interest rate charged on the loans was above those that prevailed in normal times. As a consequence, the lending wound down, with many borrowers even repaying their loans early, as the financial situation improved. Similarly, all dollar liquidity provided to foreign central banks via the swap lines was repaid, and the Federal Reserve earned fees for providing the service. As shown in [figure 3.5](#) on page 44, liquidity provision through broad-based facilities peaked at about \$1.5 trillion in early 2009. For detailed information on these liquidity provisions, see the Federal Reserve Board's website at [www.federalreserve.gov/monetarypolicy/bst.htm](http://www.federalreserve.gov/monetarypolicy/bst.htm).

purchase programs, thereby putting downward pressure on longer-term interest rates, easing broader financial market conditions, and thus supporting economic activity and job creation. Between December 2008 and August 2010, the Federal Reserve purchased \$175 billion in direct obligations of the government-sponsored entities Fannie Mae, Freddie Mac, and the Federal Home Loan Banks as well as \$1.25 trillion in mortgage-backed securities (MBS) guaranteed by Fannie Mae, Freddie Mac, and Ginnie Mae. These purchases were intended to help reduce the cost and increase the availability of credit for the purchase of homes.

In addition, between March 2009 and October 2009, the Federal Reserve purchased \$300 billion of longer-term Treasury securities. Later, in the face of a sluggish economic recovery, the Federal Reserve expanded its asset holdings in a second purchase program between November 2010 and June 2011, buying an additional \$600 billion of longer-term Treasury securities.

**Maturity extension program.** Between September 2011 and December 2012, the Federal Reserve undertook a “maturity extension program” or MEP. Under the MEP, the Federal Reserve bought \$667 billion of Treasury securities with remaining maturities of 6 to 30 years and sold an equivalent value of Treasury securities with remaining maturities of 3 years or less. The MEP added to the downward pressure on longer-term interest rates without affecting the size of the Federal Reserve’s balance sheet.

**Open-ended asset purchases.** Finally, with considerable slack remaining in the economy (as evidenced by an unemployment rate of more than 8 percent), in September 2012 the FOMC began making additional purchases of MBS at a pace of \$40 billion per month. In January 2013, these MBS purchases were supplemented by \$45 billion per month in purchases of longer-term Treasury securities. Unlike its first two asset purchase programs and the MEP, in which the total size of the program was announced at the time the program was undertaken, the Federal Reserve’s third asset purchase program was open-ended. The FOMC indicated that it would continue to purchase assets until the outlook for the labor market had improved substantially so long as inflation and expected inflation remained stable, and so long as the benefits of the purchases continued to outweigh their costs and risks.

In December 2013, the FOMC began to slow the pace of its asset purchases. It continued to slow the pace of purchases at its subsequent meetings, concluding its third asset purchase program in October 2014. [Box 3.6](#) illustrates the effects of the Federal Reserve’s asset purchase programs on its holdings of securities (on the asset side of the balance sheet) and the corresponding increase in deposits of depository institutions or reserve balances (on the liability side of the balance sheet).

Since the summer of 2010, the Federal Reserve has continued to reinvest the proceeds of securities that mature or prepay. Maturing Treasury securities are reinvested in Treasury securities, while principal payments on holdings of agency debt and agency MBS are reinvested in agency MBS. By reinvesting, the Federal Reserve continues to hold a large

#### Reinvestment to slow as the economy improves

The FOMC indicated in December 2015 that it expects to cease or commence phasing out reinvestments well after it begins increasing the target range for the federal funds rate. The timing of this step will depend on how economic and financial conditions and the economic outlook evolve.

amount of longer-term securities and thereby maintains downward pressure on longer-term interest rates.

**Forward guidance.** In addition to its asset purchase programs, the FOMC used “forward guidance”—that is, it provided information about its intentions for the federal funds rate—to influence expectations about the future course of monetary policy. In December 2008, when the Committee reduced the target for the federal funds rate to nearly zero, it indicated in its postmeeting statement that it expected that “weak economic conditions are likely to warrant exceptionally low levels of the federal funds rate for some time.” As the economic effects of the crisis worsened, the FOMC amended its forward guidance in order to help the public understand the Committee’s thinking about the future course of policy.

The forward guidance language in the FOMC’s postmeeting statement has taken different forms since the onset of the financial crisis. In March 2009, as the economic downturn worsened, the Committee changed the forward guidance to indicate that the federal funds rate could remain at exceptionally low levels “for an extended period.” In August 2011, the Committee began using calendar dates in its policy statement in order to indicate the period over which it expected economic conditions to warrant maintaining the federal funds rate near zero. As economic conditions did not improve in line with the Committee’s expectations, the calendar date in the forward guidance was extended.

Later, in its December 2012 statement, the FOMC replaced the date-based forward guidance with language indicating the economic conditions that the Committee expected to see before it would begin to consider raising its target for the federal funds rate. When the Committee added the economic conditionality to its statement in December 2012, it also indicated a variety of other economic factors that it would take into account before raising interest rates.

The FOMC's communications about likely future settings of its target for the federal funds rate and its other policy tools have continued to evolve. In particular, since the Committee began to normalize monetary policy by modestly raising its target for the federal funds rate in December of 2015, it has indicated that monetary policy is not on a predetermined path and that its policy decisions will depend on what incoming information tells policymakers about whether a change in policy is necessary to move the economy toward, or keep it at, maximum employment and 2 percent inflation.

## Monetary Policy Normalization

Monetary policy has been consistently accommodative in recent years as the FOMC sought to counter the economic effects of the financial crisis and support the recovery from the Great Recession. In late 2015, when the unemployment rate was at or near levels that policymakers judge consistent with maximum employment, the Federal Reserve began taking steps to “normalize” the stance of monetary policy in order to continue to foster its macroeconomic objectives. The term “normalization” refers to steps the FOMC is taking to return short-term interest rates to more-normal levels and reduce the size of the Federal Reserve's balance sheet.

In December 2015, the FOMC began the normalization process by raising its target range for the federal funds rate by  $\frac{1}{4}$  percentage point—the first change since December 2008—bringing the target range to 25 to 50 basis points. The FOMC based its decision on the considerable improvement in labor market conditions during 2015 and reasonable confidence that inflation, which had been running below the Committee's objective, would rise to 2 percent over the medium term. During normalization, the FOMC is continuing to set a target range for the federal funds rate and communicate its policy through this rate. To keep the federal funds rate in its target range, the Federal Reserve uses two administered rates, the interest rate the Federal Reserve pays on excess reserve balances (the IOER rate, discussed in [box 3.3](#) “The Federal Reserve Pays Interest on Required Reserve Balances and Excess

### What is a reverse repurchase agreement?

In a reverse repurchase agreement, or “reverse repo,” the Federal Reserve Open Market Desk sells a security to an eligible reverse repo counterparty with an agreement to purchase it back at a specified date in the future. For more detailed information on reverse repos or the Federal Reserve's overnight reverse repo facility, see [www.federalreserve.gov/monetarypolicy/overnight-reverse-repurchase-agreements.htm](http://www.federalreserve.gov/monetarypolicy/overnight-reverse-repurchase-agreements.htm).

Balances” on page 40) and the interest rate it pays on overnight reverse repurchase agreements (the ON RRP rate).

**Overnight reverse repurchases.** During normalization, the Committee is using an overnight reverse repurchase (ON RRP) facility as a supplementary tool as needed to help control the federal funds rate.

In an ON RRP operation, an eligible financial counterparty provides funds to the Federal Reserve in exchange for Treasury securities on the Federal Reserve’s balance sheet and is paid the ON RRP rate; the following day, the funds are returned to the counterparty and the securities are returned to the Federal Reserve. In general, any counterparty that is eligible to participate in ON RRP operations should be unwilling to invest funds overnight with another counterparty at a rate below the ON RRP rate. The FOMC plans to use the ON RRP facility only to the extent necessary and will phase it out when it is no longer needed to help control the funds rate.

**The Federal Reserve’s changing approach to policy implementation**

For a primer on the framework the Federal Reserve is using for monetary policy normalization, see “Monetary Policy 101: The Fed’s Changing Approach to Policy Implementation” at [www.federalreserve.gov/econresdata/feds/2015/files/2015047pap.pdf](http://www.federalreserve.gov/econresdata/feds/2015/files/2015047pap.pdf).

**Policy implementation during normalization.** By paying interest on reserves and offering ON RRPs, the Federal Reserve is providing safe, liquid investments for banking institutions and ON RRP counterparties. The Federal Reserve intends to set the IOER rate equal to the top of the FOMC’s target range for the federal funds rate and the ON RRP rate equal to the bottom of the target range. Increasing these two rates puts upward pressure on short-term market rates, including the federal funds rate, as investors are less willing to accept a lower rate elsewhere.

**Other policy tools.** Other supplementary tools, such as term deposits offered through the Federal Reserve’s Term Deposit Facility and term reverse repurchase agreements, will also be used, if needed, to put upward pressure on money market interest rates and so help to control the federal funds rate and keep it in the target range set by the FOMC. Term deposits are like interest-bearing certificates of deposit that depository institutions hold at Federal Reserve Banks for a specified length of time; the Board of Governors sets the interest rate on term deposits. Funds placed in term deposits are transferred from the reserve



balances of participating institutions into a term deposit account at the Federal Reserve for the life of the term deposit, thereby draining reserves from the banking system.

**The balance sheet.** As the policy normalization process proceeds, the Federal Reserve's securities holdings—and the supply of reserve balances—will be reduced in a gradual and predictable manner primarily by ceasing to reinvest repayments of principal on securities held in the portfolio. As of October 2016, the FOMC had not decided when to begin tapering or ceasing its reinvestments and did not anticipate selling agency MBS as part of the normalization process, although limited sales might be warranted in the longer run to reduce or eliminate residual holdings. The FOMC will announce the timing and pace of any sales in advance.

The FOMC intends that the Federal Reserve will, over the longer run, hold no more securities than necessary to implement monetary policy efficiently and effectively, and that it will hold primarily Treasury securities, thereby minimizing the effect of Federal Reserve holdings on the allocation of credit across sectors of the economy.

### Box 3.6. Understanding the Federal Reserve’s Balance Sheet

*The Federal Reserve’s balance sheet, published weekly, contains a great deal of information about the scale and scope of its operations. For decades, market participants have closely studied the evolution of the Federal Reserve’s balance sheet to understand important details about the implementation of monetary policy.*

The table below shows the major asset and liability categories on the Federal Reserve’s balance sheet. Conventional open market operations and large-scale asset purchases affect the Federal Reserve’s balance sheet in a similar fashion. For example, when the Open Market Desk at the Federal Reserve Bank of New York purchases a security in the open market, Federal Reserve assets increase by the value of the security purchased. A corresponding increase is recorded on the liability side of the Federal Reserve’s balance sheet to reflect payment for the security; the liability item “deposits of depository institutions” rises when the account that the seller’s depository institution holds at the Federal Reserve is credited.

#### Simplified view of the Federal Reserve balance sheet, as of January 20, 2016

The Federal Reserve publishes data weekly regarding its balance sheet.

Assets (millions of dollars)		Liabilities (millions of dollars)	
Treasury securities held outright	2,461,396	Federal Reserve notes in circulation	1,369,051
Agency debt and mortgage-backed securities holdings	1,750,275	Deposits of depository institutions	2,412,078
Other assets	277,169	Capital and other liabilities	707,711
<b>Total</b>	<b>4,488,840</b>	<b>Total</b>	<b>4,488,840</b>

Note: More detailed information on the balance sheet is available on the Federal Reserve Board’s website, [www.federalreserve.gov/monetarypolicy/bst.htm](http://www.federalreserve.gov/monetarypolicy/bst.htm). The H.4.1 statistical release, “Factors Affecting Reserve Balances,” is published every Thursday at [www.federalreserve.gov/releases/h41/](http://www.federalreserve.gov/releases/h41/).