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## Central Banks and the Federal Reserve System



### Preview

**A**mong the most important players in financial markets throughout the world are central banks, the government authorities in charge of monetary policy. Central banks' actions affect interest rates, the amount of credit, and the money supply, all of which have direct impacts not only on financial markets, but also on aggregate output and inflation. To understand the role that central banks play in financial markets and the overall economy, we need to understand how these organizations work. Who controls central banks and determines their actions? What motivates their behavior? Who holds the reins of power?

In this chapter, we look at the goals and institutional structure of major central banks, and focus particularly on the Federal Reserve System, one of the most important central banks in the world. We start by examining what central banks are trying to do, and then focus on the elements of the Fed's institutional structure that determine where the true power within the Federal Reserve System lies. By understanding who makes the decisions, we will have a better idea of how they are made. We then look at several other major central banks, particularly the European Central Bank, and their organization. Finally, we examine what explains central bank behavior and whether it is a good idea to make central banks independent by insulating them from politicians. With this context in place, we will be prepared to comprehend the actual conduct of monetary policy described in the following chapters.

### THE PRICE STABILITY GOAL AND THE NOMINAL ANCHOR

Over the past few decades, policymakers throughout the world have become increasingly aware of the social and economic costs of inflation and more concerned with maintaining a stable price level as a goal of economic policy. Indeed, **price stability**, which central bankers define as low and stable inflation, is increasingly viewed as the most important goal of monetary policy. Price stability is desirable because a rising price level (inflation) creates uncertainty in the economy, and that uncertainty might hamper economic growth. For example, when the overall level of prices is changing, the information conveyed by the prices of goods and services is harder to interpret, which complicates decision making for consumers, businesses, and government, thereby leading to a less efficient financial system.

Not only do public opinion surveys indicate that the public is hostile to inflation, but a growing body of evidence also suggests that inflation leads to lower economic

growth.<sup>1</sup> The most extreme example of unstable prices is hyperinflation, such as Argentina, Brazil, and Russia have experienced in the recent past. Hyperinflation has proved to be very damaging to the workings of the economy.

Inflation also makes it difficult to plan for the future. For example, it is more difficult to decide how much to put aside to provide for a child's college education in an inflationary environment. Furthermore, inflation can strain a country's social fabric: Conflict might result, because each group in the society may compete with other groups to make sure that its income keeps up with the rising level of prices.

## The Role of a Nominal Anchor

Because price stability is so crucial to the long-run health of an economy, a central element in successful monetary policy is the use of a **nominal anchor**, a nominal variable such as the inflation rate or the money supply, which ties down the price level to achieve price stability. Adherence to a nominal anchor that keeps the nominal variable within a narrow range promotes price stability by directly promoting low and stable inflation expectations. A more subtle reason for a nominal anchor's importance is that it can limit the **time-inconsistency problem**, in which monetary policy conducted on a discretionary, day-by-day basis leads to poor long-run outcomes.<sup>2</sup>

## The Time-Inconsistency Problem

The time-inconsistency problem is something we deal with continually in everyday life. We often have a plan that we know will produce a good outcome in the long run, but when tomorrow comes, we just can't help ourselves and we renege on our plan because doing so has short-run gains. For example, we make a New Year's resolution to go on a diet, but soon thereafter we can't resist having one more bite of that rocky road ice cream—and then another bite, and then another bite—and the weight begins to pile back on. In other words, we find ourselves unable to *consistently* follow a good plan over time; the good plan is said to be *time-inconsistent* and will soon be abandoned.

Monetary policymakers also face the time-inconsistency problem. They are always tempted to pursue a discretionary monetary policy that is more expansionary than firms or people expect because such a policy would boost economic output (or lower unemployment) in the short run. The best policy, however, is *not* to pursue expansionary policy, because decisions about wages and prices reflect workers' and firms' expectations about policy; when they see a central bank pursuing expansionary policy, workers and firms will raise their expectations about inflation, driving wages and prices up. The rise in wages and prices will lead to higher inflation, but will not result in higher output on average. (We examine this issue more formally in Chapter 25.)

<sup>1</sup>For example, see Stanley Fischer, "The Role of Macroeconomic Factors in Growth," *Journal of Monetary Economics* 32 (1993): 485–512.

<sup>2</sup>The time-inconsistency problem was first outlined in papers by Nobel Prize winners Finn Kydland and Edward Prescott, "Rules Rather Than Discretion: The Inconsistency of Optimal Plans," *Journal of Political Economy* 85 (1977): 473–491; Guillermo Calvo, "On the Time Consistency of Optimal Policy in the Monetary Economy," *Econometrica* 46 (November 1978): 1411–1428; and Robert J. Barro and David Gordon, "A Positive Theory of Monetary Policy in a Natural Rate Model," *Journal of Political Economy* 91 (August 1983): 589–610.

A central bank will have better inflation performance in the long run if it does not try to surprise people with an unexpectedly expansionary policy, but instead keeps inflation under control. However, even if a central bank recognizes that discretionary policy will lead to a poor outcome (high inflation with no gains in output), it still may not be able to pursue the better policy of inflation control, because politicians are likely to apply pressure on the central bank to try to boost output with overly expansionary monetary policy.

A clue as to how we should deal with the time-inconsistency problem comes from how-to books on parenting. Parents know that giving in to a child to keep him from acting up will produce a very spoiled child. Nevertheless, when a child throws a tantrum, many parents give him what he wants just to shut him up. Because parents don't stick to their "do not give in" plan, the child expects that he will get what he wants if he behaves badly, so he will throw tantrums over and over again. Parenting books suggest a solution to the time-inconsistency problem (although they don't call it that): Parents should set behavior rules for their children and stick to them.

A nominal anchor is like a behavior rule. Just as rules help to prevent the time-inconsistency problem in parenting by helping the adults to resist pursuing the discretionary policy of giving in, a nominal anchor can help prevent the time-inconsistency problem in monetary policy by providing an expected constraint on discretionary policy.

## OTHER GOALS OF MONETARY POLICY

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While price stability is the primary goal of most central banks, five other goals are continually mentioned by central bank officials when they discuss the objectives of monetary policy: (1) high employment, (2) economic growth, (3) stability of financial markets, (4) interest-rate stability, and (5) stability in foreign exchange markets.

### High Employment

High employment is a worthy goal for two main reasons: (1) the alternative situation—high unemployment—causes much human misery, and (2) when unemployment is high, the economy has both idle workers and idle resources (closed factories and unused equipment), resulting in a loss of output (lower GDP).

Although it is clear that high employment is desirable, how high should it be? At what point can we say that the economy is at full employment? At first, it might seem that full employment is the point at which no worker is out of a job—that is, when unemployment is zero. But this definition ignores the fact that some unemployment, called *frictional unemployment*, which involves searches by workers and firms to find suitable matchups, is beneficial to the economy. For example, a worker who decides to look for a better job might be unemployed for a while during the job search. Workers often decide to leave work temporarily to pursue other activities (raising a family, travel, returning to school), and when they decide to reenter the job market, it may take some time for them to find the right job.

Another reason that unemployment is not zero when the economy is at full employment is *structural unemployment*, a mismatch between job requirements and the skills or availability of local workers. Clearly, this kind of unemployment is undesirable. Nonetheless, it is something that monetary policy can do little about.

This goal for high employment is not an unemployment level of zero but a level above zero consistent with full employment at which the demand for labor equals the supply of labor. This level is called the **natural rate of unemployment**.

Although this definition sounds neat and authoritative, it leaves a troublesome question unanswered: What unemployment rate is consistent with full employment? In some cases, it is obvious that the unemployment rate is too high: The unemployment rate in excess of 20% during the Great Depression, for example, was clearly far too high. In the early 1960s, on the other hand, policymakers thought that a reasonable goal was 4%, a level that was probably too low, because it led to accelerating inflation. Current estimates of the natural rate of unemployment place it between  $4\frac{1}{2}$  and 6%, but even this estimate is subject to much uncertainty and disagreement. It is possible, for example, that appropriate government policy, such as the provision of better information about job vacancies or job training programs, might decrease the natural rate of unemployment.

## Economic Growth

The goal of steady economic growth is closely related to the high-employment goal because businesses are more likely to invest in capital equipment to increase productivity and economic growth when unemployment is low. Conversely, if unemployment is high and factories are idle, it does not pay for a firm to invest in additional plants and equipment. Although the two goals are closely related, policies can be specifically aimed at promoting economic growth by directly encouraging firms to invest or by encouraging people to save, which provides more funds for firms to invest. In fact, this is the stated purpose of *supply-side economics* policies, which are intended to spur economic growth by providing tax incentives for businesses to invest in facilities and equipment and for taxpayers to save more. There is also an active debate over what role monetary policy can play in boosting growth.

## Stability of Financial Markets

As our analysis in Chapter 9 showed, financial crises can interfere with the ability of financial markets to channel funds to people with productive investment opportunities and lead to a sharp contraction in economic activity. The promotion of a more stable financial system in which financial crises are avoided is thus an important goal for a central bank. Indeed, as we will discuss in this chapter, the Federal Reserve System was created in response to the bank panic of 1907 to promote financial stability.

## Interest-Rate Stability

Interest-rate stability is desirable because fluctuations in interest rates can create uncertainty in the economy and make it harder to plan for the future. Fluctuations in interest rates that affect consumers' willingness to buy houses, for example, make it more difficult for consumers to decide when to purchase a house and for construction firms to plan how many houses to build. A central bank may also want to reduce upward movements in interest rates for the reasons we will discuss in this chapter: Upward movements in interest rates generate hostility toward central banks and lead to demands that their power be curtailed.

The stability of financial markets is also fostered by interest-rate stability, because fluctuations in interest rates create great uncertainty for financial institutions. An

increase in interest rates produces large capital losses on long-term bonds and mortgages, losses that can cause the failure of the financial institutions holding them. In recent years, more pronounced interest-rate fluctuations have been a particularly severe problem for savings and loan associations and mutual savings banks, many of which got into serious financial trouble in the 1980s and early 1990s.



### Stability in Foreign Exchange Markets

With the increasing importance of international trade to the U.S. economy, the value of the dollar relative to other currencies has become a major consideration for the Fed. A rise in the value of the dollar makes American industries less competitive with those abroad, and declines in the value of the dollar stimulate inflation in the United States. In addition, preventing large changes in the value of the dollar makes it easier for firms and individuals purchasing or selling goods abroad to plan ahead. Stabilizing extreme movements in the value of the dollar in foreign exchange markets is thus an important goal of monetary policy. In other countries, which are even more dependent on foreign trade, stability in foreign exchange markets takes on even greater importance.

## SHOULD PRICE STABILITY BE THE PRIMARY GOAL OF MONETARY POLICY?

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In the long run, there is no inconsistency between the price stability goal and the other goals mentioned earlier. The natural rate of unemployment is not lowered by high inflation, so higher inflation cannot produce lower unemployment or more employment in the long run. In other words, there is no long-run trade-off between inflation and employment. In the long run, price stability promotes economic growth as well as financial and interest-rate stability. Although price stability is consistent with the other goals in the long run, in the short run price stability often conflicts with the goals of high employment and interest-rate stability. For example, when the economy is expanding and unemployment is falling, the economy may become overheated, leading to a rise in inflation. To pursue the price stability goal, a central bank would prevent this overheating by raising interest rates, an action that would initially lower employment and increase interest-rate instability. How should a central bank resolve this conflict among goals?



### Hierarchical Versus Dual Mandates

Because price stability is crucial to the long-run health of the economy, many countries have decided that price stability should be the primary, long-run goal for central banks. For example, the Maastricht Treaty, which created the European Central Bank, states, "The primary objective of the European System of Central Banks [ESCB] shall be to maintain price stability. Without prejudice to the objective of price stability, the ESCB shall support the general economic policies in the Community," which include objectives such as "a high level of employment" and "sustainable and non-inflationary growth." Mandates of this type, which put the goal of price stability first, and then say that as long as it is achieved other goals can be pursued, are known as **hierarchical mandates**. They are the directives governing the behavior of central banks such as the Bank of England, the Bank of Canada, and the Reserve Bank of New Zealand, as well as for the European Central Bank.

In contrast, the legislation defining the mission of the Federal Reserve states, “The Board of Governors of the Federal Reserve System and the Federal Open Market Committee shall maintain long-run growth of the monetary and credit aggregates commensurate with the economy's long-run potential to increase production, so as to promote effectively the goals of maximum employment, stable prices, and moderate long-term interest rates.” Because, as we learned in Chapter 5, long-term interest rates will be very high if there is high inflation, this statement in practice is a **dual mandate** to achieve two co-equal objectives: price stability and maximum employment.

Is it better for an economy to operate under a hierarchical mandate or a dual mandate?

### Price Stability as the Primary, Long-Run Goal of Monetary Policy

Because there is no inconsistency between achieving price stability in the long run and the natural rate of unemployment, these two types of mandates are not very different if maximum employment is defined as the natural rate of employment. In practice, however, there could be a substantial difference between these two mandates, because the public and politicians may believe that a hierarchical mandate puts too much emphasis on inflation control and not enough on reducing business-cycle fluctuations.

Because low and stable inflation rates promote economic growth, central bankers have come to realize that price stability should be the primary, long-run goal of monetary policy. Nevertheless, because output fluctuations should also be a concern of monetary policy, the goal of price stability should be seen as the primary goal only in the long run. Attempts to keep inflation at the same level in the short run no matter what would likely lead to excessive output fluctuations.

As long as price stability is a long-run goal, but not a short-run goal, central banks can focus on reducing output fluctuations by allowing inflation to deviate from the long-run goal for short periods of time and, therefore, can operate under a dual mandate. However, if a dual mandate leads a central bank to pursue short-run expansionary policies that increase output and employment without worrying about the long-run consequences for inflation, the time-inconsistency problem may recur. Concerns that a dual mandate might lead to overly expansionary policy is a key reason why central bankers often favor hierarchical mandates in which the pursuit of price stability takes precedence. Hierarchical mandates can also be a problem if they lead to a central bank behaving as what the Governor of the Bank of England, Mervyn King, has referred to as an “inflation nutter”—that is, a central bank that focuses solely on inflation control, even in the short run, and so undertakes policies that lead to large output fluctuations. The choice of which type of mandate is better for a central bank ultimately depends on the subtleties of how it will work in practice. Either type of mandate is acceptable as long as it operates to make price stability the primary goal in the long run, but not the short run.

## ORIGINS OF THE FEDERAL RESERVE SYSTEM

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Of all the central banks in the world, the Federal Reserve System probably has the most unusual structure. To understand why this structure arose, we must go back to before 1913, when the Federal Reserve System was created.

Before the twentieth century, a major characteristic of American politics was the fear of centralized power, as seen in the checks and balances of the Constitution and the



## Inside the Fed

### The Political Genius of the Founders of the Federal Reserve System

The history of the United States has been one of public hostility to banks and especially to a central bank. How were the politicians who founded the Federal Reserve able to design a system that has become one of the most prestigious institutions in the United States?

The answer is that the founders recognized that if power was too concentrated in either Washington, DC, or New York, cities that Americans often love to hate, an American central bank might not have enough public support to operate effectively. They thus decided to set up a decentralized system with twelve Federal Reserve banks spread throughout the

country to make sure that all regions of the country were represented in monetary policy deliberations. In addition, they made the Federal Reserve banks quasi-private institutions overseen by directors from the private sector living in each district who represent views from their region and are in close contact with the president of their Federal Reserve bank. The unusual structure of the Federal Reserve System has promoted a concern in the Fed with regional issues as is evident in Federal Reserve bank publications. Without this unusual structure, the Federal Reserve System might have been far less popular with the public, making the institution far less effective.

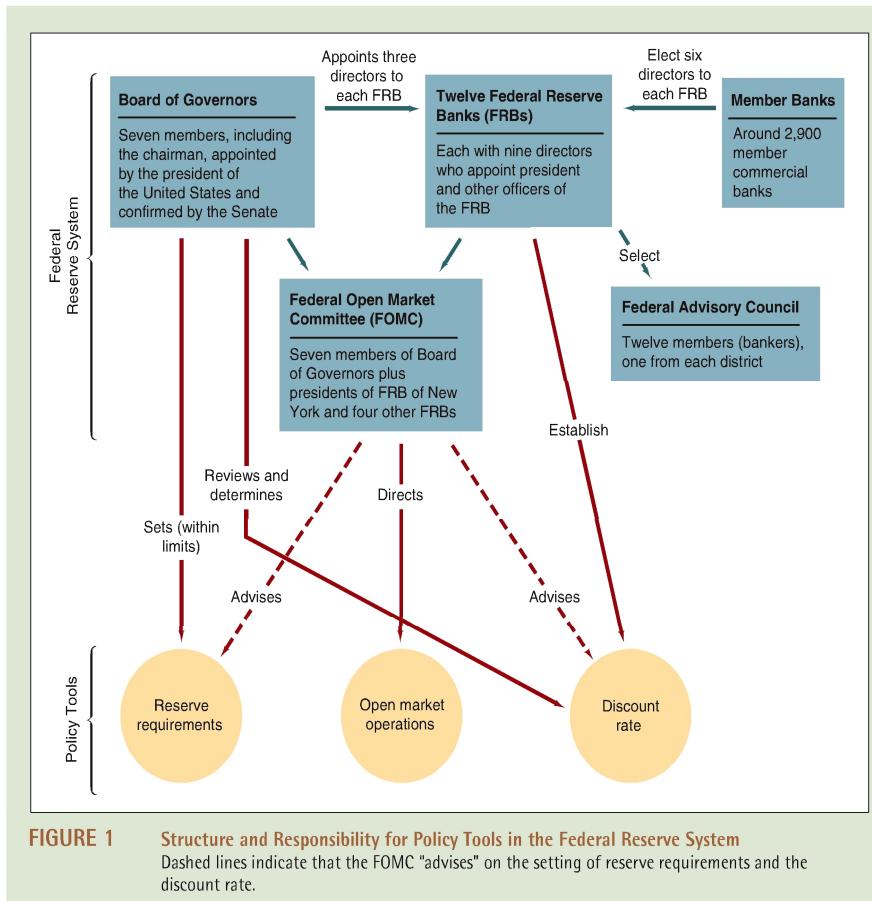
preservation of states' rights. This fear of centralized power was one source of the American resistance to the establishment of a central bank (see Chapter 12). Another source was the traditional American distrust of moneyed interests, the most prominent symbol of which was a central bank. The open hostility of the American public to the existence of a central bank resulted in the demise of the first two experiments in central banking, whose function was to police the banking system: The First Bank of the United States was disbanded in 1811, and the national charter of the Second Bank of the United States expired in 1836 after its renewal was vetoed in 1832 by President Andrew Jackson.

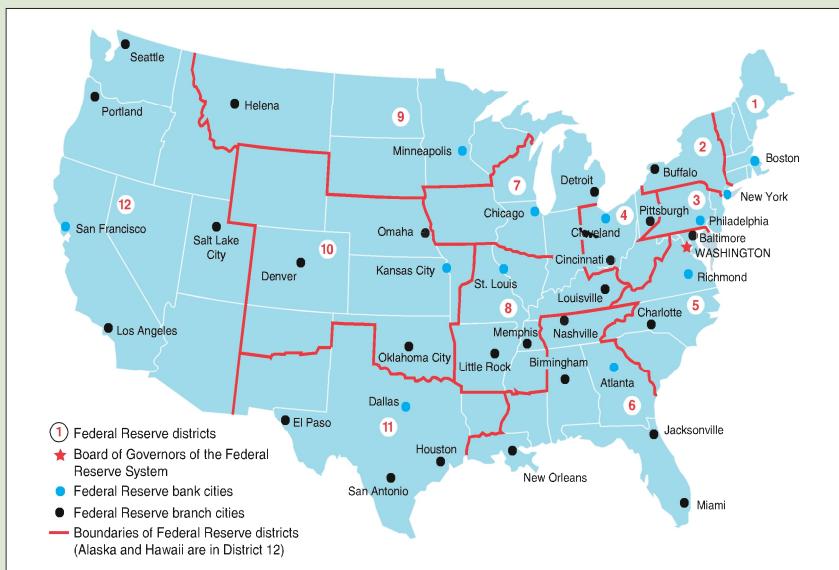
The termination of the Second Bank's national charter in 1836 created a severe problem for American financial markets, because there was no lender of last resort that could provide reserves to the banking system to avert a bank panic. Hence, in the nineteenth and early twentieth centuries, nationwide bank panics became a regular event, occurring every twenty years or so, culminating in the panic of 1907. The 1907 panic resulted in such widespread bank failures and such substantial losses to depositors that the public was finally convinced that a central bank was needed to prevent future panics.

The hostility of the American public to banks and centralized authority created great opposition to the establishment of a single central bank like the Bank of England. Fear was rampant that the moneyed interests on Wall Street (including the largest corporations and banks) would be able to manipulate such an institution to gain control over the economy and that federal operation of the central bank might result in too much government intervention in the affairs of private banks. Serious disagreements existed over whether the central bank should be a private bank or a government institution. Because of the heated debates on these issues, a compromise was struck. In the great American tradition, Congress wrote an elaborate system of checks and balances into the Federal Reserve Act of 1913, which created the Federal Reserve System with its twelve regional Federal Reserve banks (see the Inside the Fed box, "The Political Genius of the Founders of the Federal Reserve System").

## STRUCTURE OF THE FEDERAL RESERVE SYSTEM

The writers of the Federal Reserve Act wanted to diffuse power along regional lines, between the private sector and the government, and among bankers, business people, and the public. This initial diffusion of power has resulted in the evolution of the Federal Reserve System to include the following entities: the **Federal Reserve banks**, the **Board of Governors of the Federal Reserve System**, the **Federal Open Market Committee (FOMC)**, the **Federal Advisory Council**, and around 2,900 member commercial banks. Figure 1 outlines the relationships of these entities to one another and to the





**FIGURE 2** Federal Reserve System

Source: *Federal Reserve Bulletin*.

three policy tools of the Fed (open market operations, the discount rate, and reserve requirements) discussed in Chapters 14 and 15.

## Federal Reserve Banks

Each of the twelve Federal Reserve districts has one main Federal Reserve bank, which may have branches in other cities in the district. The locations of these districts, the Federal Reserve banks, and their branches are shown in Figure 2. The three largest Federal Reserve banks in terms of assets are those of New York, Chicago, and San Francisco—combined they hold more than 50% of the assets (discount loans, securities, and other holdings) of the Federal Reserve System. The New York bank, with around one-quarter of the assets, is the most important of the Federal Reserve banks (see Inside the Fed box, “The Special Role of the Federal Reserve Bank of New York”).

Each of the Federal Reserve banks is a quasi-public (part private, part government) institution owned by the private commercial banks in the district that are members of the Federal Reserve System. These member banks have purchased stock in their district Federal Reserve bank (a requirement of membership), and the dividends paid by that stock are limited by law to 6% annually. The member banks elect six directors for each

district bank; three more are appointed by the Board of Governors. Together, these nine directors appoint the president of the bank (subject to the approval of the Board of Governors).

The directors of a district bank are classified into three categories: A, B, and C. The three A directors (elected by the member banks) are professional bankers, and the three B directors (also elected by the member banks) are prominent leaders from industry, labor, agriculture, or the consumer sector. The three C directors, who are appointed by the Board of Governors to represent the public interest, are not allowed to be officers, employees, or stockholders of banks. This design for choosing directors was intended by the framers of the Federal Reserve Act to ensure



## Inside the Fed The Special Role of the Federal Reserve Bank of New York

The Federal Reserve Bank of New York plays a special role in the Federal Reserve System for several reasons. First, its district contains many of the largest commercial banks in the United States, the safety and soundness of which are paramount to the health of the U.S. financial system. The Federal Reserve Bank of New York conducts examinations of bank holding companies and state-chartered member banks in its district, making it the supervisor of some of the most important financial institutions in our financial system. Not surprisingly, given this responsibility, the bank supervision group is one of the largest units of the New York Fed and is by far the largest bank supervision group in the Federal Reserve System.

The second reason for the New York Fed's special role is its active involvement in the bond and foreign exchange markets. The New York Fed houses the open market desk, which conducts open market operations—the purchase and sale of bonds—that determine the amount of reserves in the banking system. Because of this involvement in the Treasury securities market, as well as its walking-distance location near the New York Stock Exchanges, the officials at the Federal Reserve Bank of New York are in constant contact with the major domestic financial markets in the United States. In addition, the Federal Reserve Bank of New York houses the foreign exchange desk, which conducts foreign exchange interventions on behalf of the Federal Reserve System and the U.S. Treasury. Its involvement in these financial markets

means that the New York Fed is an important source of information on what is happening in domestic and foreign financial markets, particularly during crisis periods such as the recent subprime meltdown, as well as a liaison between officials in the Federal Reserve System and private participants in the markets.

The third reason for the Federal Reserve Bank of New York's prominence is that it is the only Federal Reserve bank to be a member of the Bank for International Settlements (BIS). Thus the president of the New York Fed, along with the chairman of the Board of Governors, represents the Federal Reserve System in its regular monthly meetings with other major central bankers at the BIS. This close contact with foreign central bankers and interaction with foreign exchange markets means that the New York Fed has a special role in international relations, both with other central bankers and with private market participants. Adding to its prominence in international circles, the New York Fed is the repository for more than \$100 billion of the world's gold, an amount greater than the gold at Fort Knox.

Finally, the president of the Federal Reserve Bank of New York is the only permanent voting member of the FOMC among the Federal Reserve bank presidents, serving as the vice-chairman of the committee. Thus he and the chairman and vice-chairman of the Board of Governors are the three most important officials in the Federal Reserve System.

that the directors of each Federal Reserve bank would reflect all constituencies of the American public.

The twelve Federal Reserve banks perform the following functions:

- Clear checks
- Issue new currency
- Withdraw damaged currency from circulation
- Administer and make discount loans to banks in their districts
- Evaluate proposed mergers and applications for banks to expand their activities
- Act as liaisons between the business community and the Federal Reserve System
- Examine bank holding companies and state-chartered member banks
- Collect data on local business conditions
- Use their staffs of professional economists to research topics related to the conduct of monetary policy

The twelve Federal Reserve banks are involved in monetary policy in several ways:

1. Their directors “establish” the discount rate (although the discount rate in each district is reviewed and determined by the Board of Governors).
2. They decide which banks, member and nonmember alike, can obtain discount loans from the Federal Reserve bank.
3. Their directors select one commercial banker from each bank’s district to serve on the Federal Advisory Council, which consults with the Board of Governors and provides information that helps in the conduct of monetary policy.
4. Five of the twelve bank presidents each have a vote on the Federal Open Market Committee, which directs **open market operations** (the purchase and sale of government securities that affect both interest rates and the amount of reserves in the banking system). As explained in the Inside the Fed box, “The Special Role of the Federal Reserve Bank of New York,” because the president of the New York Fed is a permanent member of the FOMC, he or she always has a vote on the FOMC, making it the most important of the banks; the other four votes allocated to the district banks rotate annually among the remaining eleven presidents.

## Member Banks

All *national* banks (commercial banks chartered by the Office of the Comptroller of the Currency) are required to be members of the Federal Reserve System. Commercial banks chartered by the states are not required to be members, but they can choose to join. Currently, 38% of the commercial banks in the United States are members of the Federal Reserve System, having declined from a peak figure of 49% in 1947.

Before 1980, only member banks were required to keep reserves as deposits at the Federal Reserve banks. Nonmember banks were subject to reserve requirements determined by their states, which typically allowed them to hold much of their reserves in interest-bearing securities. Because at the time no interest was paid on reserves deposited at the Federal Reserve banks, it was costly to be a member of the system, and as interest rates rose, the relative cost of membership rose, and more and more banks left the system.

This decline in Fed membership was a major concern of the Board of Governors: one reason was that it lessened the Fed’s control over the money supply, making it more

difficult for the Fed to conduct monetary policy. The chairman of the Board of Governors repeatedly called for new legislation requiring all commercial banks to be members of the Federal Reserve System. One result of the Fed's pressure on Congress was a provision in the Depository Institutions Deregulation and Monetary Control Act of 1980: All depository institutions became subject (by 1987) to the same requirements to keep deposits at the Fed, so member and nonmember banks would be on an equal footing in terms of reserve requirements. In addition, all depository institutions were given access to the Federal Reserve facilities, such as the discount window (discussed in Chapter 15) and Fed check clearing, on an equal basis. These provisions ended the decline in Fed membership and reduced the distinction between member and non-member banks.

### **Board of Governors of the Federal Reserve System**

At the head of the Federal Reserve System is the seven-member Board of Governors, headquartered in Washington, DC. Each governor is appointed by the president of the United States and confirmed by the Senate. To limit the president's control over the Fed and insulate the Fed from other political pressures, the governors can serve one full nonrenewable fourteen-year term plus part of another term, with one governor's term expiring every other January.<sup>3</sup> The governors (many are professional economists) are required to come from different Federal Reserve districts to prevent the interests of one region of the country from being overrepresented. The chairman of the Board of Governors is chosen from among the seven governors and serves a four-year, renewable term. It is expected that once a new chairman is chosen, the old chairman resigns from the Board of Governors, even if there are many years left to his or her term as a governor.

The Board of Governors is actively involved in decisions concerning the conduct of monetary policy. All seven governors are members of the FOMC and vote on the conduct of open market operations. Because there are only twelve voting members on this committee (seven governors and five presidents of the district banks), the Board has the majority of the votes. The Board also sets reserve requirements (within limits imposed by legislation) and effectively controls the discount rate by the "review and determination" process, whereby it approves or disapproves the discount rate "established" by the Federal Reserve banks. The chairman of the Board advises the president of the United States on economic policy, testifies in Congress, and speaks for the Federal Reserve System to the media. The chairman and other governors may also represent the United States in negotiations with foreign governments on economic matters. The Board has a staff of professional economists (larger than those of individual Federal Reserve banks), which provides economic analysis that the board uses in making its decisions (see the Inside the Fed box, "The Role of the Research Staff").

Through legislation, the Board of Governors has often been given duties not directly related to the conduct of monetary policy. In the past, for example, the Board set the maximum interest rates payable on certain types of deposits under Regulation Q.

<sup>3</sup>Although technically the governor's term is nonrenewable, a governor can resign just before the term expires and then be reappointed by the president. This explains how one governor, William McChesney Martin, Jr., served for 28 years. Since Martin, the chairman from 1951 to 1970, retired from the board in 1970, the practice of allowing a governor to in effect serve a second full term has not been done and this is why Alan Greenspan had to retire from the Board after his fourteen-year term expired in 2006.



## Inside the Fed The Role of the Research Staff

The Federal Reserve System is the largest employer of economists not just in the United States, but in the world. The system's research staff has around 1,000 people, about half of whom are economists. Of these 500 economists, approximately 250 are at the Board of Governors, 100 are at the Federal Reserve Bank of New York, and the remainder are at the other Federal Reserve banks. What do all these economists do?

The most important task of the Fed's economists is to follow the incoming data from government agencies and private sector organizations on the economy and provide guidance to the policymakers on where the economy may be heading and what the impact of monetary policy actions on the economy might be. Before each FOMC meeting, the research staff at each Federal Reserve bank briefs its president and the senior management of the bank on its forecast for the U.S. economy and the issues that are likely to be discussed at the meeting. The research staff also provides briefing materials or a formal briefing on the economic outlook for the bank's region, something that each president discusses at the FOMC meeting. Meanwhile, at the Board of Governors, economists maintain a large econometric model (a model whose equations are estimated with statistical procedures) that helps them produce their forecasts of the national economy, and they, too, brief the governors on the national economic outlook.

The research staffers at the banks and the board also provide support for the bank supervisory staff, tracking developments in the banking sector and other financial markets and institutions and providing bank examiners with technical advice that they might need in the course of their examinations. Because the Board of Governors

has to decide on whether to approve bank mergers, the research staff at both the board and the bank in whose district the merger is to take place prepare information on what effect the proposed merger might have on the competitive environment. To assure compliance with the Community Reinvestment Act, economists also analyze a bank's performance in its lending activities in different communities.

Because of the increased influence of developments in foreign countries on the U.S. economy, the members of the research staff, particularly at the New York Fed and the Board, produce reports on the major foreign economies. They also conduct research on developments in the foreign exchange market because of its growing importance in the monetary policy process and to support the activities of the foreign exchange desk. Economists help support the operation of the open market desk by projecting reserve growth and the growth of the monetary aggregates.

Staff economists also engage in basic research on the effects of monetary policy on output and inflation, developments in the labor markets, international trade, international capital markets, banking and other financial institutions, financial markets, and the regional economy, among other topics. This research is published widely in academic journals and in Reserve Bank publications. (Federal Reserve bank reviews are a good source of supplemental material for money and banking students.)

Another important activity of the research staff primarily at the Reserve Banks is in the public education area. Staff economists are called on frequently to make presentations to the board of directors at their banks or to make speeches to the public in their district.

(After 1986, ceilings on time deposits were eliminated, but there is still a restriction on paying any interest on business demand deposits.) Under the Credit Control Act of 1969 (which expired in 1982), the Board had the ability to regulate and control credit once the president of the United States approved. The Board of Governors also sets margin requirements, the fraction of the purchase price of securities that has to be paid for with cash rather than borrowed funds. It also sets the salary of the president and all officers of each Federal Reserve bank and reviews each bank's budget. Finally, the Board has substantial bank regulatory functions: It approves bank mergers and applications

for new activities, specifies the permissible activities of bank holding companies, and supervises the activities of foreign banks in the United States.

## Federal Open Market Committee (FOMC)

The FOMC usually meets eight times a year (about every six weeks) and makes decisions regarding the conduct of open market operations, which influence the money supply and interest rates. Indeed, the FOMC is often referred to as the “Fed” in the press: For example, when the media say that the Fed is meeting, they actually mean that the FOMC is meeting. The committee consists of the seven members of the Board of Governors, the president of the Federal Reserve Bank of New York, and the presidents of four other Federal Reserve banks. The chairman of the Board of Governors also presides as the chairman of the FOMC. Even though only the presidents of five of the Federal Reserve banks are voting members of the FOMC, the other seven presidents of the district banks attend FOMC meetings and participate in discussions. Hence they have some input into the committee’s decisions.

Because open market operations are the most important policy tool that the Fed has for controlling the money supply, the FOMC is necessarily the focal point for policy-making in the Federal Reserve System. Although reserve requirements and the discount rate are not actually set by the FOMC, decisions in regard to these policy tools are effectively made there, and this is why Figure 1 has dashed lines indicating that the FOMC “advises” on the setting of reserve requirements and the discount rate. The FOMC does not actually carry out securities purchases or sales. Instead, it issues directives to the trading desk at the Federal Reserve Bank of New York, where the manager for domestic open market operations supervises a roomful of people who execute the purchases and sales of the government or agency securities. The manager communicates daily with the FOMC members and their staffs concerning the activities of the trading desk.

## The FOMC Meeting

The FOMC meeting takes place in the boardroom on the second floor of the main building of the Board of Governors in Washington, DC. The seven governors and the twelve Reserve Bank presidents, along with the secretary of the FOMC, the Board’s director of the Research and Statistics Division and his deputy, and the directors of the Monetary Affairs and International Finance Divisions, sit around a massive conference table. Although only five of the Reserve Bank presidents have voting rights on the FOMC at any given time, all actively participate in the deliberations. Seated around the sides of the room are the directors of research at each of the Reserve Banks and other senior board and Reserve Bank officials, who, by tradition, do not speak at the meeting.

The meeting starts with a quick approval of the minutes of the previous meeting of the FOMC. The first substantive agenda item is the report by the manager of system open market operations on foreign currency and domestic open market operations and other issues related to these topics. After the governors and Reserve Bank presidents finish asking questions and discussing these reports, a vote is taken to ratify them.

The next stage in the meeting is a presentation of the Board staff’s national economic forecast, referred to as the “green book” forecast (see the Inside the Fed box, “Green, Blue, and Beige”), by the director of the Research and Statistics Division at the Board. After the governors and Reserve Bank presidents have queried the division director about the forecast, the go-round occurs: Each bank president presents an overview



## Inside the Fed Green, Blue, and Beige: What Do These Colors Mean at the Fed?

Three research documents play an important role in the monetary policy process and at Federal Open Market Committee meetings. A detailed national forecast for the next three years, generated by the Federal Reserve Board of Governors' Research and Statistics Division, is placed between green covers and is thus known as the "green book." It is provided to all who attend the FOMC meeting. The "blue book," in blue covers, also provided to all participants at the FOMC meeting, contains the projections for the monetary aggregates prepared by the

Monetary Affairs Division at the Board of Governors and typically presents three alternative scenarios for the stance of monetary policy (labeled A, B, and C). The "beige book," with beige covers, is produced by the Reserve Banks and details evidence gleaned either from surveys or from talks with key businesses and financial institutions on the state of the economy in each of the Federal Reserve districts. This is the only one of the three books that is distributed publicly, and it often receives a lot of attention in the press.

of economic conditions in his or her district and the bank's assessment of the national outlook, and each governor, including the chairman, gives a view of the national outlook. By tradition, remarks avoid the topic of monetary policy at this time.

The agenda then turns to current monetary policy and the domestic policy directive. The Board's director of the Monetary Affairs Division leads off the discussion by outlining the different scenarios for monetary policy actions outlined in the "blue book" (see the aforementioned Inside the Fed box) and may describe an issue relating to how monetary policy should be conducted. After a question-and-answer period, each of the FOMC members, as well as the nonvoting bank presidents, expresses his or her views on monetary policy, and on the monetary policy statement. The chairman then summarizes the discussion and proposes specific wording for the directive on the federal funds rate target transmitted to the open market desk and the monetary policy statement. The secretary of the FOMC formally reads the proposed statement and the members of the FOMC vote.<sup>4</sup>

Then there is an informal buffet lunch, and while eating, the participants hear a presentation on the latest developments in Congress on banking legislation and other legislation relevant to the Federal Reserve. Around 2:15 p.m., the meeting breaks up and a public announcement is made about the outcome of the meeting: whether the federal funds rate target and discount rate have been raised, lowered, or left unchanged, and an assessment of the "balance of risks" in the future, whether toward higher inflation or toward a weaker economy.<sup>5</sup> The postmeeting announcement is an innovation initiated in 1994. Before then, no such announcement was made, and the markets had to guess what policy action was taken. The decision to announce this information was a step in the direction of greater openness by the Fed.

<sup>4</sup>The decisions expressed in the directive may not be unanimous, and the dissenting views are made public. However, except in rare cases, the chairman's vote is always on the winning side.

<sup>5</sup>Half of the meetings have a somewhat different format. Rather than starting Tuesday morning at 9:00 a.m. like the other meetings, they start in the afternoon on Tuesday and go over to Wednesday, with the usual announcement around 2:15 p.m. These longer meetings in addition consider the longer-term economic outlook and special topics.

## Why the Chairman of the Board of Governors Really Runs the Show

At first glance, the chairman of the Board of Governors is just one of twelve voting members of the FOMC and has no legal authority to exercise control over this body. So why does the media pay so much attention to every word the chairman speaks? Does the chairman really call the shots at the Fed? And if so, why does the chairman have so much power?

The chairman does indeed run the show. He is the spokesperson for the Fed and negotiates with Congress and the president of the United States. He also exercises control by setting the agenda of Board and FOMC meetings. The chairman also influences the Board through the force of stature and personality. Chairmen of the Board of Governors (including Marriner S. Eccles, William McChesney Martin, Jr., Arthur Burns, Paul A. Volcker, Alan Greenspan, and Ben Bernanke), have typically had strong personalities and have wielded great power.

The chairman also exercises power by supervising the Board's staff of professional economists and advisers. Because the staff gathers information for the Board and conducts the analyses that the Board uses in its decisions, it has some influence over monetary policy. In addition, in the past, several appointments to the Board itself have come from within the ranks of its professional staff, making the chairman's influence even farther-reaching and longer-lasting than a four-year term. The chairman's style also matters, as the Inside the Fed box, "How Bernanke's Style Differs from Greenspan's," suggests.

## HOW INDEPENDENT IS THE FED?

When we look, in the next three chapters, at how the Federal Reserve conducts monetary policy, we will want to know why it decides to take certain policy actions but not others. To understand its actions, we must understand the incentives that motivate the Fed's behavior. How free is the Fed from presidential and congressional pressures? Do economic, bureaucratic, or political considerations guide it? Is the Fed truly independent of outside pressures?

Stanley Fischer, who was a professor at MIT and is now governor of the Bank of Israel, has defined two different types of independence of central banks: **instrument independence**, the ability of the central bank to set monetary policy instruments, and **goal independence**, the ability of the central bank to set the goals of monetary policy. The Federal Reserve has both types of independence and is remarkably free of the political pressures that influence other government agencies. Not only are the members of the Board of Governors appointed for a fourteen-year term (and so cannot be ousted from office), but also the term is technically not renewable, eliminating some of the incentive for the governors to curry favor with the president and Congress.

Probably even more important to its independence from the whims of Congress is the Fed's independent and substantial source of revenue from its holdings of securities and, to a lesser extent, from its loans to banks. In recent years, for example, the Fed has had net earnings after expenses of around \$40 billion per year—not a bad living if you can find it! Because it returns the bulk of these earnings to the Treasury, it does not get rich from its activities, but this income gives the Fed an important advantage over other



## Inside the Fed How Bernanke's Style Differs from Greenspan's

Every Federal Reserve chairman has a different style that affects how policy decisions are made at the Fed. There has been much discussion of how the current chairman of the Fed, Ben Bernanke, differs from Alan Greenspan, who was the chairman of the Federal Reserve Board for nineteen years from 1987 until 2006.

Alan Greenspan dominated the Fed like no other prior Federal Reserve chairman. His background was very different from that of Bernanke, who spent most of his professional life in academia at Princeton University. Greenspan, a disciple of Ayn Rand, is a strong advocate for laissez-faire capitalism and headed a very successful economic consulting firm, Townsend-Greenspan.\* Greenspan has never been an economic theorist, but is rather famous for immersing himself in the data—literally so, because he is known to have done this in his bath tub at the beginning of the day—and often focused on rather obscure data series to come up with his forecasts. As a result, Greenspan did not rely exclusively on the Federal Reserve Board staff's forecast in making his policy decisions. A prominent example occurred during 1997, when the Board staff was forecasting a surge in inflation, which would have required a tightening of monetary policy. Yet Greenspan believed that inflation would not rise and convinced the FOMC not to tighten monetary policy. Greenspan proved to be right and was dubbed the “maestro” by the media.

Bernanke, on the other hand, before going to Washington as a governor of the Fed in 2002, and then as the chairman of the Council of Economic Advisors in 2005, and finally back to the Fed as chairman in 2006, spent his entire career as a professor, first at Stanford University's Graduate School of Business, and then in the Economics Department at Princeton University, where he became chairman. Because Bernanke did not make his name as an economic forecaster, the Board staff's forecast now plays a much greater role in decision making at the FOMC. In contrast to Greenspan, Bernanke's background as a top academic economist has meant that he focuses on analytics in making his decisions. The result is a much greater use of model simulations in guiding policy discussions.

The style of policy discussions has also changed with the new chairman. Greenspan exercised extensive control of the discussion at the FOMC. During the Greenspan era, the discussion was formal, with each participant speaking after being put on a list by the secretary of the FOMC. Under Bernanke, there is more give and take. Bernanke has encouraged so-called two-handed interventions. When a participant wants to go out of turn to ask a question or make a point about something that one of the other participants has just said, they raise two hands and are then acknowledged by chairman Bernanke and called on to speak.

The order of the discussion at the FOMC has also changed in a very subtle, but extremely important way. Under Greenspan, after the other FOMC participants had expressed their views on the economy, Greenspan would present his views on the state of the economy and then would make a recommendation for what monetary policy action should be taken. This required that the other participants would then just agree or disagree with the chairman's recommendation in the following round of discussion about monetary policy. In contrast, Bernanke usually does not make a recommendation for monetary policy immediately after other FOMC participants have expressed their views on the economy. Instead, he summarizes what he has heard from the other participants, makes some comments of his own, and then waits until after he has heard the views of all the other participants about monetary policy before making his policy recommendation. The process under Greenspan meant that the chairman was pretty much making the decision about policy, while Bernanke's procedure is more democratic and enables participants to have greater influence over the chairman's vote.

Another big difference in style is in terms of transparency. Greenspan was famous for being obscure, and even quipped at a Congressional hearing, “I guess I should warn you, if I turn out to be particularly clear, you've probably misunderstood what I've said.” Bernanke is known for being a particularly clear speaker. Although there were advances in

(continued)

\*For biographical information on Alan Greenspan, see his autobiography, *The Age of Turbulence: Adventures in a New World* (New York: Penguin Press, 2007).

### How Bernanke's Style Differs from Greenspan's (*continued*)

transparency under Greenspan, he adopted more transparent communication reluctantly. Bernanke has been a much stronger supporter of transparency, having advocated that the Fed announce its inflation objective (see Chapter 16), and having launched a

major initiative in 2006 to study Federal Reserve communications that resulted in substantial increases in Fed transparency in November 2007 (as discussed in the Inside the Fed box on the evolution of the Fed's communication strategy on page 338).

government agencies: It is not subject to the appropriations process usually controlled by Congress. Indeed, the General Accounting Office, the auditing agency of the federal government, cannot audit the monetary policy or foreign exchange market functions of the Federal Reserve. Because the power to control the purse strings is usually synonymous with the power of overall control, this feature of the Federal Reserve System contributes to its independence more than any other factor.

Yet the Federal Reserve is still subject to the influence of Congress, because the legislation that structures it is written by Congress and is subject to change at any time. When legislators are upset with the Fed's conduct of monetary policy, they frequently threaten to take control of the Fed's finances and force it to submit a budget request like other government agencies. A recent example was the call by Senators Dorgan and Reid in 1996 for Congress to have budgetary authority over the nonmonetary activities of the Federal Reserve. This is a powerful club to wield, and it certainly has some effect in keeping the Fed from straying too far from congressional wishes.

Congress has also passed legislation to make the Federal Reserve more accountable for its actions. Under the Humphrey-Hawkins Act of 1978, the Federal Reserve is required to issue a *Monetary Policy Report to the Congress* semiannually, with accompanying testimony by the chairman of the Board of Governors, to explain how the conduct of monetary policy is consistent with the objectives given by the Federal Reserve Act.

The president can also influence the Federal Reserve. Because congressional legislation can affect the Fed directly or affect its ability to conduct monetary policy, the president can be a powerful ally through his influence on Congress. Second, although ostensibly a president might be able to appoint only one or two members to the Board of Governors during each presidential term, in actual practice the president appoints members far more often. One reason is that most governors do not serve out a full fourteen-year term. (Governors' salaries are substantially below what they can earn in the private sector or even at universities, thus providing an incentive for them to return to academia or take private sector jobs before their term expires.) In addition, the president is able to appoint a new chairman of the Board of Governors every four years, and a chairman who is not reappointed is expected to resign from the board so that a new member can be appointed.

The power that the president enjoys through his appointments to the Board of Governors is limited, however. Because the term of the chairman is not necessarily concurrent with that of the president, a president may have to deal with a chairman of the Board of Governors appointed by a previous administration. Alan Greenspan, for example, was appointed chairman in 1987 by President Ronald Reagan and was reappointed to another term by a Republican president, George H. W. Bush, in 1992. When Bill Clinton,

a Democrat, became president in 1993, Greenspan had several years left to his term. Clinton was put under tremendous pressure to reappoint Greenspan when his term expired and did so in 1996 and again in 2000, even though Greenspan is a Republican.<sup>6</sup> George W. Bush, a Republican, then reappointed Greenspan in 2004.

You can see that the Federal Reserve has extraordinary independence for a government agency. Nonetheless, the Fed is not free from political pressures. Indeed, to understand the Fed's behavior, we must recognize that public support for the actions of the Federal Reserve plays a very important role.<sup>7</sup>



## STRUCTURE AND INDEPENDENCE OF THE EUROPEAN CENTRAL BANK

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Until recently, the Federal Reserve had no rivals in terms of its importance in the central banking world. However, this situation changed in January 1999 with the start-up of the European Central Bank (ECB) and European System of Central Banks (ESCB), which now conduct monetary policy for countries that are members of the European Monetary Union. These countries, taken together, have a population that exceeds that of the United States and a GDP comparable to that of the United States. The Maastricht Treaty, which established the ECB and ESCB, patterned these institutions after the Federal Reserve, in that central banks for each country (referred to as *National Central Banks*, or NCBs) have a similar role to that of the Federal Reserve Banks. The European Central Bank, which is housed in Frankfurt, Germany, has an Executive Board that is similar in structure to the Board of Governors of the Federal Reserve; it is made up of the president, the vice president, and four other members, who are appointed to eight-year, nonrenewable terms. The Governing Council, which comprises the Executive Board and the presidents of the National Central Banks, is similar to the FOMC and makes the decisions on monetary policy. While the presidents of the National Central Banks are appointed by their countries' governments, the members of the Executive Board are appointed by a committee consisting of the heads of state of all the countries that are part of the European Monetary Union.

### Differences Between the European System of Central Banks and the Federal Reserve System

In the popular press, the European System of Central Banks is usually referred to as the European Central Bank (ECB), even though it would be more accurate to refer to it as the *Eurosystem*, just as it would be more accurate to refer to the Federal Reserve System rather than the Fed. Although the structure of the Eurosystem is similar to that of the

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<sup>6</sup>Similarly, William McChesney Martin, Jr., the chairman from 1951 to 1970, was appointed by President Truman (Dem.) but was reappointed by Presidents Eisenhower (Rep.), Kennedy (Dem.), Johnson (Dem.), and Nixon (Rep.). Also, Paul Volcker, the chairman from 1979 to 1987, was appointed by President Carter (Dem.) but was reappointed by President Reagan (Rep.).

<sup>7</sup>An inside view of how the Fed interacts with the public and the politicians can be found in Bob Woodward, *Maestro: Greenspan's Fed and the American Boom* (New York: Simon and Schuster, 2000).

Federal Reserve System, some important differences distinguish the two. First, the budgets of the Federal Reserve Banks are controlled by the Board of Governors, while the National Central Banks control their own budgets and the budget of the ECB in Frankfurt. The ECB in the Eurosystem therefore has less power than does the Board of Governors in the Federal Reserve System. Second, the monetary operations of the Eurosystem are conducted by the National Central Banks in each country, so monetary operations are not centralized as they are in the Federal Reserve System. Third, in contrast to the Federal Reserve, the ECB is not involved in supervision and regulation of financial institutions; these tasks are left to the individual countries in the European Monetary Union.

## Governing Council

Just as there is a focus on meetings of the FOMC in the United States, there is a similar focus in Europe on meetings of the Governing Council, which meets monthly at the ECB in Frankfurt to make decisions on monetary policy. Currently, twelve countries are members of the European Monetary Union, and the head of each of the twelve National Central Banks has one vote in the Governing Council; each of the six Executive Board Members also has one vote. In contrast to FOMC meetings, which staff from both the Board of Governors and individual Federal Reserve Banks attend, only the eighteen members of the Governing Council attend the meetings, with no staff present.

The Governing Council has decided that although its members have the legal right to vote, no formal vote will actually be taken; instead, the Council operates by consensus. One reason the Governing Council has decided not to take votes is because of worries that the casting of individual votes might lead the heads of National Central Banks to support a monetary policy that would be appropriate for their individual countries, but not necessarily for the countries in the European Monetary Union as a whole. This problem is less severe for the Federal Reserve: Although Federal Reserve Bank presidents do live in different regions of the country, all have the same nationality and are more likely to take a national view in monetary policy decisions rather than a regional view.

Just as the Federal Reserve releases the FOMC's decision on the setting of the policy interest rate (the federal funds rate) immediately after the meeting is over, the ECB does the same after the Governing Council meeting concludes (announcing the target for a similar short-term interest rate for interbank loans). However, whereas the Fed simply releases a statement about the setting of the monetary policy instruments, the ECB goes further by having a press conference in which the president and vice president of the ECB take questions from the news media. Holding such a press conference so soon after the meeting is tricky because it requires the president and vice president to be quick on their feet in dealing with the press. The first president of the ECB, Willem F. Duisenberg, put his foot in his mouth at some of these press conferences, and the ECB came under some sharp criticism. His successor, Jean-Claude Trichet, a more successful communicator, has encountered fewer problems in this regard.

Although currently only fifteen countries in the European Monetary Union have representation on the Governing Council, this situation is likely to change in the future. Three countries in the European Community already qualify for entering the European Monetary Union: the United Kingdom, Sweden, and Denmark. Seven other countries in the European Community (the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, and Slovakia), might enter the European Monetary Union once they qualify, which may not be too far in the distant future. The possible expansion of membership in the Eurosystem presents a particular dilemma. The current size of the Governing Council (twenty-one voting members) is substantially larger than the FOMC (twelve

voting members). Many commentators have wondered whether the Governing Council is already too unwieldy—a situation that would get considerably worse as more countries join the European Monetary Union. To deal with this potential problem, the Governing Council has decided on a complex system of rotation, somewhat like that for the FOMC, in which National Central Banks from the larger countries will vote more often than National Central Banks from the smaller countries.

## How Independent Is the ECB?

Although the Federal Reserve is a highly independent central bank, the Maastricht Treaty, which established the Eurosystem, has made the latter the most independent central bank in the world. Like the Board of Governors, the members of the Executive Board have long terms (eight years), while heads of National Central Banks are required to have terms at least five years long. Like the Fed, the Eurosystem determines its own budget, and the governments of the member countries are not allowed to issue instructions to the ECB. These elements of the Maastricht Treaty make the ECB highly independent.

The Maastricht Treaty specifies that the overriding, long-term goal of the ECB is price stability, which means that the goal for the Eurosystem is more clearly specified than it is for the Federal Reserve System. However, the Maastricht Treaty did not specify exactly what “price stability” means. The Eurosystem has defined the quantitative goal for monetary policy to be an inflation rate slightly less than 2%, so from this perspective, the ECB is slightly less goal-independent than the Fed. The Eurosystem is, however, much more goal-independent than the Federal Reserve System in another way: The Eurosystem’s charter cannot be changed by legislation; it can be changed only by revision of the Maastricht Treaty—a difficult process because *all* signatories to the treaty must agree to accept any proposed change.



## STRUCTURE AND INDEPENDENCE OF OTHER FOREIGN CENTRAL BANKS

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Here we examine the structure and degree of independence of three other important foreign central banks: the Bank of Canada, the Bank of England, and the Bank of Japan.

### Bank of Canada

Canada was late in establishing a central bank: The Bank of Canada was founded in 1934. Its directors are appointed by the government to three-year terms, and they appoint the governor, who has a seven-year term. A governing council, consisting of the four deputy governors and the governor, is the policymaking body comparable to the FOMC that makes decisions about monetary policy.

The Bank Act was amended in 1967 to give the ultimate responsibility for monetary policy to the government. So on paper, the Bank of Canada is not as instrument-independent as the Federal Reserve. In practice, however, the Bank of Canada does essentially control monetary policy. In the event of a disagreement between the bank and the government, the minister of finance can issue a directive that the bank must follow. However, because the directive must be in writing and specific and applicable for a specified period, it is unlikely that such a directive would be issued, and none has been to date. The goal for monetary policy, a target for inflation, is set jointly by the Bank of Canada and the government, so the Bank of Canada has less goal independence than the Fed.

## Bank of England

Founded in 1694, the Bank of England is one of the oldest central banks. The Bank Act of 1946 gave the government statutory authority over the Bank of England. The Court (equivalent to a board of directors) of the Bank of England is made up of the governor and two deputy governors, who are appointed for five-year terms, and sixteen non-executive directors, who are appointed for three-year terms.

Until 1997, the Bank of England was the least independent of the central banks examined in this chapter because the decision to raise or lower interest rates resided not within the Bank of England but with the Chancellor of the Exchequer (the equivalent of the U.S. Secretary of the Treasury). All of this changed when the current Labour government came to power in May 1997. At this time, the Chancellor of the Exchequer, Gordon Brown, made a surprise announcement that the Bank of England would henceforth have the power to set interest rates. However, the Bank was not granted total instrument independence: The government can overrule the Bank and set rates “in extreme economic circumstances” and “for a limited period.” Nonetheless, as in Canada, because overruling the Bank would be so public and is supposed to occur only in highly unusual circumstances and for a limited time, it is likely to be a rare occurrence.

Because the United Kingdom is not a member of the European Monetary Union, the Bank of England makes its monetary policy decisions independently from the European Central Bank. The decision to set interest rates resides in the Monetary Policy Committee, made up of the governor, two deputy governors, two members appointed by the governor after consultation with the chancellor (normally central bank officials), plus four outside economic experts appointed by the chancellor. (Surprisingly, two of the four outside experts initially appointed to this committee were not British citizens—one was Dutch and the other American, although both were residents of the United Kingdom.) The inflation target for the Bank of England is set by the Chancellor of the Exchequer, so the Bank of England is also less goal-independent than the Fed.

## Bank of Japan

The Bank of Japan (Nippon Ginko) was founded in 1882 during the Meiji Restoration. Monetary policy is determined by the Policy Board, which is composed of the governor; two vice-governors; and six outside members appointed by the cabinet and approved by the parliament, all of whom serve for five-year terms.

Until recently, the Bank of Japan was not formally independent of the government, with the ultimate power residing with the Ministry of Finance. However, the Bank of Japan Law, which took effect in April 1998 and was the first major change in the powers of the Bank of Japan in 55 years, changed this situation. In addition to stipulating that the objective of monetary policy is to attain price stability, the law granted greater instrument and goal independence to the Bank of Japan. Before this, the government had two voting members on the Policy Board, one from the Ministry of Finance and the other from the Economic Planning Agency. Now the government may send two representatives from these agencies to board meetings, but they no longer have voting rights, although they do have the ability to request delays in monetary policy decisions. In addition, the Ministry of Finance lost its authority to oversee many of the operations of the Bank of Japan, particularly the right to dismiss senior officials. However, the Ministry of Finance continues to have control over the part of the Bank's budget that is unrelated to monetary policy, which might limit its independence to some extent.

## The Trend Toward Greater Independence

As our survey of the structure and independence of the major central banks indicates, in recent years we have been seeing a remarkable trend toward increasing independence. It used to be that the Federal Reserve was substantially more independent than almost all other central banks, with the exception of those in Germany and Switzerland. Now the newly established European Central Bank is far more independent than the Fed, and greater independence has been granted to central banks like the Bank of England and the Bank of Japan, putting them more on a par with the Fed, as well as to central banks in such diverse countries as New Zealand, Sweden, and the euro nations. Both theory and experience suggest that more independent central banks produce better monetary policy, thus providing an impetus for this trend.

## EXPLAINING CENTRAL BANK BEHAVIOR

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One view of government bureaucratic behavior is that bureaucracies serve the public interest (this is the *public interest view*). Yet some economists have developed a theory of bureaucratic behavior that suggests other factors that influence how bureaucracies operate. The *theory of bureaucratic behavior* suggests that the objective of a bureaucracy is to maximize its own welfare, just as a consumer's behavior is motivated by the maximization of personal welfare and a firm's behavior is motivated by the maximization of profits. The welfare of a bureaucracy is related to its power and prestige. Thus this theory suggests that an important factor affecting a central bank's behavior is its attempt to increase its power and prestige.

What predictions does this view of a central bank like the Fed suggest? One is that the Federal Reserve will fight vigorously to preserve its autonomy, a prediction verified time and time again as the Fed has continually counterattacked congressional attempts to control its budget. In fact, it is extraordinary how effectively the Fed has been able to mobilize a lobby of bankers and business people to preserve its independence when threatened.

Another prediction is that the Federal Reserve will try to avoid conflict with powerful groups that might threaten to curtail its power and reduce its autonomy. The Fed's behavior may take several forms. One possible factor explaining why the Fed is sometimes slow to increase interest rates and thus smooths out their fluctuations is that it wishes to avoid a conflict with the president and Congress over increases in interest rates. The desire to avoid conflict with Congress and the president may also explain why in the past the Fed has not embraced transparency (see the Inside the Fed box, "The Evolution of the Fed's Communication Strategy").

The desire of the Fed to hold as much power as possible also explains why it vigorously pursued a campaign to gain control over more banks. The campaign culminated in legislation that expanded jurisdiction of the Fed's reserve requirements to *all* banks (not just the member commercial banks) by 1987.

The theory of bureaucratic behavior seems applicable to the Federal Reserve's actions, but we must recognize that this view of the Fed as being solely concerned with its own self-interest is too extreme. Maximizing one's welfare does not rule out altruism. (You might give generously to a charity because it makes you feel good about yourself, but in the process you are helping a worthy cause.) The Fed is surely concerned that it conduct monetary policy in the public interest. However, much uncertainty and



## Inside the Fed The Evolution of the Fed's Communication Strategy

As the theory of bureaucratic behavior predicts, the Fed has incentives to hide its actions from the public and from politicians to avoid conflicts with them. In the past, this motivation led to a penchant for secrecy in the Fed, about which one former Fed official remarked that “a lot of staffers would concede that [secrecy] is designed to shield the Fed from political oversight.”<sup>\*</sup> For example, the Fed pursued an active defense of delaying its release of FOMC directives to Congress and the public. However, as we have seen, in 1994 it began to reveal the FOMC directive immediately after each FOMC meeting. In 1999, it also began to immediately announce the “bias” toward which direction monetary policy was likely to go, later expressed as the balance of risks in the economy. In 2002, the Fed started to report the roll call vote on the federal funds rate target taken at the FOMC meeting. In December 2004, it moved up the release date of the minutes of FOMC meetings to three weeks after the meeting from six weeks, its previous policy.

The Fed has increased its transparency in recent years, but has been slower to do so than many other central banks. One important trend toward greater transparency is the announcement by a central bank of a specific numerical objective for inflation, often referred to as an inflation target, which will be discussed in Chapter 16. Alan Greenspan was strongly opposed to the Fed’s moving in this direction, but Chairman Bernanke is much more favorably disposed,

having advocated the announcement of a specific numerical inflation objective in his writings and in a speech that he gave as a governor in 2004.<sup>\*\*</sup>

In November 2007, the Bernanke Fed announced major enhancements to its communication strategy. First, the forecast horizon for the FOMC’s projections under “appropriate policy” for inflation, unemployment, and GDP growth, which were mandated by the Humphrey-Hawkins legislation in 1978, was extended from two calendar years to three. Because projections for inflation given appropriate policy should converge to the desired inflation objective eventually, the longer-run projections provide more information about what individual FOMC participants think should be the objective for inflation. This change therefore moves the FOMC closer to specifying a numerical objective for inflation. Second, the Committee now publishes these projections four times a year rather than twice a year. Third, the release of the projections now includes narrative describing FOMC participants’ views of the principal forces shaping the outlook and the sources of risks to that outlook. Although these enhancements to Fed communication are major steps forward, there are strong arguments that further increases in transparency could improve the control of inflation by anchoring inflation expectations more firmly, and also help stabilize economic fluctuations.<sup>\*\*\*</sup>

<sup>\*</sup>Quoted in “Monetary Zeal: How the Federal Reserve Under Volcker Finally Slowed Down Inflation,” *Wall Street Journal*, December 7, 1984, p. 23.

<sup>\*\*</sup>Ben S. Bernanke, “Inflation Targeting,” *Federal Reserve Bank of St. Louis Review* 86, no. 4 (July/August 2004): 165–168.

<sup>\*\*\*</sup>Frederic S. Mishkin, “Whither Federal Reserve Communications,” speech at the Petersen Institute for International Economics, July 28, 2008, <http://www.federalreserve.gov/newsevents/speech/mishkin20080728a.htm>.

disagreement exist over what monetary policy should be.<sup>8</sup> When it is unclear what is in the public interest, other motives may influence the Fed’s behavior. In these situations, the theory of bureaucratic behavior may be a useful guide to predicting what motivates the Fed and other central banks.

<sup>8</sup>One example of the uncertainty over how best to conduct monetary policy was discussed in Chapter 3: Economists are not sure how to measure money. So even if economists agreed that controlling the quantity of money is the appropriate way to conduct monetary policy (a controversial position, as we will see in later chapters), the Fed cannot be sure which monetary aggregate it should control.

## SHOULD THE FED BE INDEPENDENT?

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As we have seen, the Federal Reserve is probably the most independent government agency in the United States. Every few years, the question arises in Congress whether the independence given the Fed should be curtailed. Politicians who strongly oppose a Fed policy often want to bring it under their supervision so as to impose a policy more to their liking. Should the Fed be independent, or would we be better off with a central bank under the control of the president or Congress?

### The Case for Independence

The strongest argument for an independent Federal Reserve rests on the view that subjecting the Fed to more political pressures would impart an inflationary bias to monetary policy. In the view of many observers, politicians in a democratic society are shortsighted because they are driven by the need to win their next election. With this as the primary goal, they are unlikely to focus on long-run objectives, such as promoting a stable price level. Instead, they will seek short-run solutions to problems, such as high unemployment and high interest rates, even if the short-run solutions have undesirable long-run consequences. For example, we saw in Chapter 5 that high money growth might lead initially to a drop in interest rates but might cause an increase later as inflation heats up. Would a Federal Reserve under the control of Congress or the president be more likely to pursue a policy of excessive money growth when interest rates are high, even though it would eventually lead to inflation and even higher interest rates in the future? The advocates of an independent Federal Reserve say yes. They believe that a politically insulated Fed is more likely to be concerned with long-run objectives and thus be a defender of a sound dollar and a stable price level.

A variation on the preceding argument is that the political process in America could lead to a **political business cycle**, in which just before an election, expansionary policies are pursued to lower unemployment and interest rates. After the election, the bad effects of these policies—high inflation and high interest rates—come home to roost, requiring contractionary policies that politicians hope the public will forget before the next election. There is some evidence that such a political business cycle exists in the United States, and a Federal Reserve under the control of Congress or the president might make the cycle even more pronounced.

Putting the Fed under the control of the Treasury (making it more subject to influence by the president) is also considered dangerous because the Fed can be used to facilitate Treasury financing of large budget deficits by its purchases of Treasury bonds.<sup>9</sup> Treasury pressure on the Fed to “help out” might lead to more inflation in the economy. An independent Fed is better able to resist this pressure from the Treasury.

Another argument for Fed independence is that control of monetary policy is too important to leave to politicians, a group that has repeatedly demonstrated a lack of expertise at making hard decisions on issues of great economic importance, such as reducing the budget deficit or reforming the banking system. Another way to state this argument is in terms of the principal-agent problem discussed in Chapters 8, 9, and 11.

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<sup>9</sup>The Federal Reserve Act prohibited the Fed from buying Treasury bonds directly from the Treasury (except to roll over maturing securities); instead, the Fed buys Treasury bonds on the open market. One possible reason for this prohibition is consistent with the foregoing argument: The Fed would find it harder to facilitate Treasury financing of large budget deficits.

Both the Federal Reserve and politicians are agents of the public (the principals), and as we have seen, both politicians and the Fed have incentives to act in their own interest rather than in the interest of the public. The argument supporting Federal Reserve independence is that the principal-agent problem is worse for politicians than for the Fed because politicians have fewer incentives to act in the public interest.

Indeed, some politicians may prefer to have an independent Fed, which can be used as a public “whipping boy” to take some of the heat off their backs. It is possible that a politician who in private opposes an inflationary monetary policy will be forced to support such a policy in public for fear of not being reelected. An independent Fed can pursue policies that are politically unpopular yet in the public interest.

### The Case Against Independence

Proponents of a Fed under the control of the president or Congress argue that it is undemocratic to have monetary policy (which affects almost everyone in the economy) controlled by an elite group that is responsible to no one. The current lack of accountability of the Federal Reserve has serious consequences: If the Fed performs badly, there is no provision for replacing members (as there is with politicians). True, the Fed needs to pursue long-run objectives, but elected officials of Congress vote on long-run issues also (foreign policy, for example). If we push the argument further that policy is always performed better by elite groups like the Fed, we end up with such conclusions as the Joint Chiefs of Staff should determine military budgets or the IRS should set tax policies with no oversight from the president or Congress. Would you advocate this degree of independence for the Joint Chiefs or the IRS?

The public holds the president and Congress responsible for the economic well-being of the country, yet they lack control over the government agency that may well be the most important factor in determining the health of the economy. In addition, to achieve a cohesive program that will promote economic stability, monetary policy must be coordinated with fiscal policy (management of government spending and taxation). Only by placing monetary policy under the control of the politicians who also control fiscal policy can these two policies be prevented from working at cross-purposes.

Another argument against Federal Reserve independence is that an independent Fed has not always used its freedom successfully. The Fed failed miserably in its stated role as lender of last resort during the Great Depression, and its independence certainly didn't prevent it from pursuing an overly expansionary monetary policy in the 1960s and 1970s that contributed to rapid inflation in this period.

Our earlier discussion also suggests that the Federal Reserve is not immune from political pressures.<sup>10</sup> Its independence may encourage it to pursue a course of narrow self-interest rather than the public interest.

There is yet no consensus on whether Federal Reserve independence is a good thing, although public support for independence of the central bank seems to have been growing in both the United States and abroad. As you might expect, people who like the Fed's policies are more likely to support its independence, while those who dislike its policies advocate a less independent Fed.

<sup>10</sup>For evidence on this issue, see Robert E. Weintraub, “Congressional Supervision of Monetary Policy,” *Journal of Monetary Economics* 4 (1978): 341–362. Some economists suggest that lessening the independence of the Fed might even reduce the incentive for politically motivated monetary policy; see Milton Friedman, “Monetary Policy: Theory and Practice,” *Journal of Money, Credit and Banking* 14 (1982): 98–118.



## Central Bank Independence and Macroeconomic Performance Throughout the World

We have seen that advocates of an independent central bank believe that macroeconomic performance will be improved by making the central bank more independent. Recent research seems to support this conjecture: When central banks are ranked from least independent to most independent, inflation performance is found to be the best for countries with the most independent central banks.<sup>11</sup> Although a more independent central bank appears to lead to a lower inflation rate, this is not achieved at the expense of poorer real economic performance. Countries with independent central banks are no more likely to have high unemployment or greater output fluctuations than countries with less independent central banks.

<sup>11</sup>Alberto Alesina and Lawrence H. Summers, "Central Bank Independence and Macroeconomic Performance: Some Comparative Evidence," *Journal of Money, Credit and Banking* 25 (1993): 151–162. However, Adam Posen, "Central Bank Independence and Disinflationary Credibility: A Missing Link," Federal Reserve Bank of New York Staff Report No. 1, May 1995, has cast some doubt on whether the causality runs from central bank independence to improved inflation performance.

## SUMMARY

1. The six basic goals of monetary policy are price stability (the primary goal), high employment, economic growth, stability of financial markets, interest-rate stability, and stability in foreign exchange markets.
2. Having a strong nominal anchor is a key element in successful monetary policy. It helps promote price stability by tying down inflation expectations and limiting the time-inconsistency problem, in which monetary policymakers conduct monetary policy in a discretionary way that focuses on short-run objectives but produces poor long-run outcomes.
3. The Federal Reserve System was created in 1913 to lessen the frequency of bank panics. Because of public hostility to central banks and the centralization of power, the Federal Reserve System was created with many checks and balances to diffuse power.
4. The structure of the Federal Reserve System consists of twelve regional Federal Reserve banks, around 2,900 member commercial banks, the Board of Governors of the Federal Reserve System, the Federal Open Market Committee (FOMC), and the Federal Advisory Council. Although on paper the Federal Reserve System appears to be decentralized, in practice it has come to function as a unified central bank controlled by the Board of Governors, especially the board's chairman.
5. The Federal Reserve is more independent than most agencies of the U.S. government, but it is still subject to political pressures because the legislation that structures the Fed is written by Congress and can be changed at any time.
6. The European System of Central Banks has a similar structure to the Federal Reserve System, with each member country having a National Central Bank, and an Executive Board of the European Central Bank being located in Frankfurt, Germany. The Governing Council, which is made up of the six members of the Executive Board (which includes the president of the European Central Bank) and the presidents of the National Central Banks, makes the decisions on monetary policy. The Eurosystem, which was established under the terms of the Maastricht Treaty, is even more independent than the Federal Reserve System because its charter cannot be changed by legislation. Indeed, it is the most independent central bank in the world.
7. There has been a remarkable trend toward increasing independence of central banks throughout the world. Greater independence has been granted to central banks such as the Bank of England and the Bank of Japan in recent years, as well as to other central banks in such diverse countries as New Zealand and Sweden. Both theory and experience suggest that more independent central banks produce better monetary policy.
8. The theory of bureaucratic behavior suggest that one factor driving central banks' behavior might be an