

From:

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impact on the banks' reserve position, its ease and efficiency make it the Fed's preferred tool of monetary policy.

The use of these tools of monetary policy has several significant advantages for policy makers. As you have seen, the Fed was able to respond to the 9/11 crisis within minutes of the attacks on the World Trade Center and the Pentagon. In the normal course of business, the Fed is able to respond quickly to changing economic circumstances. Unexpected changes in employment, real GDP, or inflation can be addressed very quickly. The intended direction of monetary policy can switch from expansionary to contractionary in very short order. These monetary tools allow the Fed to conduct policies of both large and small scale with relative ease.

Limitations of Monetary Policy

Monetary policy can be nimble and responsive in the hands of policy makers. However, monetary policy might not work effectively in some circumstances. Although the Fed's goal is to manipulate the money supply in the public interest, it does not directly control the money supply. The Fed depends on the behavior of the banking system and the public to transmit the impact of monetary policy to the economy.

To illustrate, imagine that the Fed sees signs of weakness in the economy and implement an expansionary monetary policy to overcome this weakness. The Fed supplies more excess reserves to the banking system in the hope of reducing interest rates and stimulating aggregate demand. For this policy to succeed, the banking system must use these new excess reserves as the basis of additional lending. What if the banks, seeing the weakness in the economy, became reluctant to make new loans? The public, wary of the economic future, might decide to hold on to more currency. The amount of new money created would be curtailed as banks held more excess reserves and the public more currency. Both of these actions would weaken the money creation process. Even though the Fed might undertake the correct monetary policy, the transmission of that expansionary policy to the economy through the public and banking system might be disrupted.

One example of such a disruption was the recession of 1990–1991. The Fed lowered the discount rate 10 times in 1991. Yet borrowers found it difficult to obtain loans from banks, and loans that were made had high nominal interest rates. Many banks held any new reserves provided by the Fed's expansionary monetary policy to gain more safety in difficult economic times. The problems of the savings and loan associations in the 1980s had made many other depository institutions very cautious about granting loans. The stock market crash of 1987, coupled with declining real estate prices, had further reduced the banks' willingness to lend. In spite of the significant reduction in the discount rate and the increase in bank reserves, the money supply in 1990 and 1991 grew very slowly. The banks received the fuel for money creation but did not use that fuel to facilitate money creation. As a result, the Fed's correct monetary policy was unable to prevent the economy from sliding into a recession.

▶ The Federal Funds Market

Federal funds market

The market in which banks can lend reserves to other banks.

To illustrate the impact of the Fed's monetary policy more concretely, we must explore an important financial market. The **federal funds market** is the market in which banks lend reserves to other banks. This market captures the influence of the Fed's monetary policy on the availability and cost of reserves. In our simple money creation example, we assumed that the banks that possessed excess reserves could

earn no interest on them. In reality, if a bank has excess reserves, it can lend them for very short periods (usually overnight) to other banks. In this section, we examine this market for reserves and the Fed's procedure for announcing its monetary policy through the behavior of this market. Although monetary policy is usually described as changing the money supply, the most immediate impact of monetary policy is usually transmitted through changing interest rates. The Fed uses the interest rate in the federal funds market to signal and transmit its monetary policy decisions.

The Federal Funds Rate

Federal funds rate

The interest rate charged on reserves borrowed in the federal funds market.

The demand for excess reserves is inversely related to the interest rate charged on reserves borrowed in the federal funds market, which is the **federal funds rate**. The supply of reserves by other banks is directly related to the federal funds rate.

Operation of the Federal Funds Market. Each business day, borrowing and lending banks notify a brokerage house in New York of their willingness to supply or demand reserves. The brokerage house matches those offers, announces the equilibrium federal funds rate, and notifies successful borrowers and lenders of these federal funds.

Figure 16.6 illustrates the operation of the federal funds market. The banks that want excess reserves are the demanders in this market. As the federal funds rate falls, they increase the quantity of federal funds demanded. The suppliers of federal

FIGURE 16.6

The Federal Funds Market

In panel (a), demanders for federal funds want to borrow more reserves as the federal funds rate falls. Lenders will supply more reserves as federal funds rate rises. The equilibrium federal funds rate is 3 percent and the equilibrium quantity of federal funds borrowed and lent is \$50 billion. In panel (b), the federal funds market is initially in equilibrium at E_1 with a federal funds rate of 3 percent and an equilibrium quantity of federal funds of \$50 billion. If the Fed conducts an expansionary monetary policy, the demand for federal funds decreases from D_1 to D_2 . The new equilibrium federal funds rate is 2.5 percent and fewer federal funds are borrowed (\$45 billion).

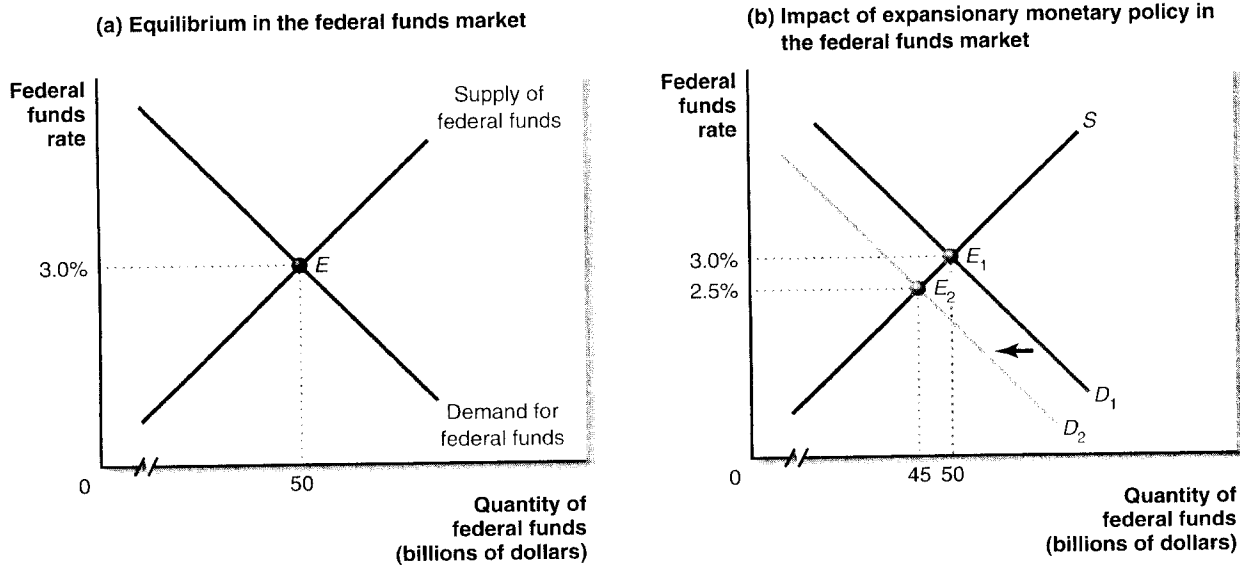


TABLE 16.3**The Fed's Monetary Policy**

Type of Monetary Policy	Intended Impact on Money Supply	Intended Impact on the Federal Funds Rate	Open Market Operations	Change in the Discount Rate	Change in the Reserve Requirement
Expansionary	Increased growth rate	Lower	Fed buys U.S. government securities	Fed lowers	Fed lowers
Contractionary	Decreased growth rate	Raise	Fed sells U.S. government securities	Fed raises	Fed raises

funds are banks that have reserves to lend. As the federal fund rate increases, they increase the quantity of federal funds supplied. The equilibrium federal funds rate equates the quantity demanded of reserves to the quantity supplied. In Figure 16.6(a), the equilibrium federal funds rate is three percent and the quantity of federal funds borrowed and lent equals \$50 billion.

The Fed's Role in the Federal Funds Market. The Fed plays the determining role in the federal funds market. With the three tools of monetary policy, the Fed can exert significant control over the total amount of reserves in the banking system. When the FOMC meets, it sets a target for the federal funds rate. The Fed then uses its tools of monetary policy to add or subtract excess reserves to meet that target. Figure 16.6(b) shows the impact of an expansionary monetary policy by the Fed. Typically, an expansionary monetary policy means that the Fed buys U.S. government securities. These Fed purchases increase the amount of excess reserves in the banking system. As a result, banks have more reserves and will want to borrow fewer reserves at every federal funds rate. The demand for federal funds will decrease. As a result, the amount of federal funds borrowed falls from \$50 billion to \$45 billion and the equilibrium federal funds rate decreases from 3.0 percent to 2.5 percent.

What if the Fed conducts a contractionary monetary policy? There is more demand for reserves and upward pressure on the federal funds rate. As a result, the federal funds rate increases and the quantity of federal funds borrowed is greater.

The Fed's 9/11 Response. On September 17, 2001, the Fed held an emergency meeting to lower the targeted federal funds rate from 3.5 percent to 3.0 percent. However, the Fed also announced that it would push the actual federal funds rate below this target rate if circumstances warranted. By September 19, the federal funds rate had fallen to 1.9 percent. For the next six days, the actual federal funds rate was well below its target rate, as the Fed flooded the banking system with excess reserves.

We summarize the impact of the Fed's monetary policy on the economy in Table 16.3. The Fed's monetary policy comes in two basic versions: expansionary and contractionary. Expansionary monetary policy happens when the Fed steps on the monetary gas pedal, increasing the growth rate of the money supply and lowering the federal funds rate. The Fed accomplishes this acceleration in monetary growth and reduction in the federal funds rate by providing more

reserves to the banking system and the federal funds market. To do so, it buys U.S. government securities, lowers the discount rate so that banks are encouraged to borrow more reserves, and/or reduces the reserve requirement to create more excess reserves.

A contractionary monetary policy is designed to reduce the amount of reserves in the banking system. The Fed accomplishes this goal by selling U.S. government securities, raising the discount rate, and/or raising the reserve requirement. This contractionary impact involves the Fed stepping on the monetary brakes, slowing the growth of the money supply and raising the federal funds rate.

The FOMC Directive and the Conduct of Monetary Policy

Every six to eight weeks, business reporters breathlessly report that the FOMC is meeting to decide upon the future of interest rates. Unexpected changes announced by the FOMC in the direction or magnitude of change in interest rates can be disconcerting to the financial community and cause brief but powerful changes in financial markets.

Why do reporters focus their attention on these periodic meetings of FOMC, when open market operations take place every business day? The answer is that the FOMC meets eight times a year to decide whether to change its intentions for the magnitude of its open market operations and the direction of interest rates. After each meeting, the FOMC issues a press release summarizing the Fed's monetary policy decisions made that day and why the decisions were made. This announcement is called the **FOMC Directive**, a document that gives the New York Fed officials directions about how to conduct monetary policy while providing the public with insight into the Fed's view of future monetary policy. After the Directive is issued, the Federal Reserve Bank of New York engages in open market operations every business day to execute the FOMC's interest rate decision.

In this chapter, we have explored the role the Fed plays in monetary policy. We have seen how individual depository institutions actually create money by accepting deposits and making loans. Through the money multiplier process in the banking system, potentially large and disruptive changes in the money supply can occur. Using expansionary or contractionary monetary policy, the Fed seeks to provide the right amount of money and the right level of interest rates to achieve its goals of full employment, price stability, and sustainable economic growth. In the next chapter, we examine the role that the money supply and interest rates play in achieving overall macroeconomic health.

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Get Ahead of the Curve

Apply your knowledge of monetary policy to analyze a Federal Reserve decision to raise interest rates.

FOMC Directive

Document that gives the New York Fed officials directions about how to conduct monetary policy and provides the public with insight into the Fed's view of future monetary policy.

TEST + EXTEND Your Knowledge

1. TEST Banks obtain additional reserves to make new loans in the federal funds market. Would you expect the federal funds rate to be higher or lower than other interest rates? Would you expect the federal funds rate to move in the same direction as other interest rates? Why or why not?

2. EXTEND The Board of Governors of the Federal Reserve System's Web site lists a number of interest rates in the U.S. economy (www.aw-bc/leeds/ch16). Check this Web site to see whether your predictions were accurate by comparing the federal funds rate to the bank prime rate (the lowest loan rate on commercial loans) and the interest rate on mortgage loans.