**How the Fed Works**

by [Lee Ann Obringer](http://money.howstuffworks.com/about-author.htm#obringer)

Sometimes, in order to understand why you need something, it helps to find out what it was like before that "something" was created. Before the Federal Reserve was created in 1913, there were over **30,000 different currencies** floating around in the United States. Currency could be issued by almost anyone -- even drug stores issued their own notes. There were many problems that stemmed from this, including the fact that some currencies were worth more than others. Some currencies were backed by silver or gold, and others by government bonds. There were even times when banks didn't have enough money to honor withdrawals by customers. Imagine going to the bank to withdraw money from your savings account and being told you couldn't because they didn't have your money! Before the Fed was created, banks were collapsing and the economy swung wildly from one extreme to the next. The faith Americans had in the banking system was not very strong. This is why the Fed was created.

The Fed's original job was to organize, standardize and stabilize the monetary system in the United States. It had to set up a method that could create "**liquidity**" in the money supply -- in other words, make sure banks could honor withdrawals for customers. It also needed to come up with a way to create an "**elastic currency**," meaning it had to control inflation by making sure prices didn't climb too quickly, *and* it needed a way of increasing or decreasing the country's supply of currency in order to prevent inflation and [recession](http://money.howstuffworks.com/recession.htm). In the next two sections, we'll discuss these inflation and recession.

**Why do we need the Fed?**

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## Inflation

Inflation is not a good thing because it slows down economic growth.

For example, when inflation is high, things cost more and people spend less. They also do less long-term planning that involves spending money, such as [building houses](http://home.howstuffworks.com/home-improvement/repair/house.htm) and [investing](http://money.howstuffworks.com/personal-finance/financial-planning/stocks.htm). Businesses are affected in the same ways. When inflation is high, it tends to fluctuate quite a bit. This uncertainty makes people wary of spending money for fear that inflation will increase even more and they won't be able to pay their bills.

High inflation also adds additional costs to long-term interest rates. These costs are to offset the risk associated with inflation. The additional costs make borrowing money less attractive. When people don't buy things (when demand is down), then the supply of goods gets too high, production has to decrease, and unemployment increases -- in other words, recession hits.

When prices are stable (when inflation is low), consumers make more purchases, investments, etc., production output is maintained and employment remains high.

## Recession

## http://s.hswstatic.com/gif/recession.gifWhen [recession](http://money.howstuffworks.com/recession.htm) hits, the Fed can ****lower interest rates**** in order to encourage people to borrow money and make purchases. This works in the short run, but it has to be handled carefully so that inflation isn't impacted in the long run.

The Fed has to carefully balance the short term goals of increasing output and employment with the long term goals of maintaining low inflation.

Maximum Employment

Maximum employment doesn't necessarily mean that everyone is working. Economists have a "natural rate" of unemployment that is ultimately the goal. If the unemployment rate is pushed too low -- below 5% or so -- inflation rises because more money is in the economy, and that goes against the long-term Fed goal of stable prices.

## Fed Tasks

The Fed regulates financial institutions, acts as the U.S. government's bank, acts as a bank's bank, and is responsible for managing the nation's money. The Fed has two divisions: One group, the **Board of Governors**, is responsible for setting monetary policy and managing the nation's money; the other group, the 12 **regional Reserve Banks**, acts as the service division that carries out the policy and oversees financial institutions. The regional Reserve Banks represent the private sector. Both of these groups have the same goals.

In its role as **money manager**, the Fed has two primary goals:

* Maintain stable prices (control inflation)
* Ensure maximum employment and production output

It achieves these goals indirectly by raising or lowering short-term interest rates. Although these are two separate goals, the outcome of each is the same -- a stable economy. In the following sections, we'll discuss the goals and the way the Fed goes about achieving them.

## Fed Tasks: Monetary Policyhttp://s.hswstatic.com/gif/interest-rate-connection.gif

Monetary policy refers to the actions the Fed takes to influence financial conditions in order to achieve its goals.

The Fed's primary control is in the raising and lowering of short-term interest rates. In doing this, the Fed can **indirectly** influence demand, which then influences the economy. For example, if interest rates are lowered, borrowing money to make purchases becomes less expensive, and people are more motivated to spend money because they can get a better deal on the loan. Spending money, in turn, stimulates economic growth, which is what the Fed is trying to do in that instance. If there is too much money in the economy, however, people spend more money and demand increases at a faster rate than supply can match. Prices rise too quickly because of the shortage of products, and inflation results. If there is too little money in the economy, people don't have excess spending money, and there is little economic growth.

The Fed watches economic indicators closely to determine in which the direction the economy is going. By forecasting increases in inflation or slow-downs in the economy, the Fed knows whether to increase or decrease the supply of money.

## Fed Tasks: Financial Institution Regulator

As a regulator for financial institutions, the Fed establishes the rules of conduct that these institutions must follow. The regional Reserve Banks then carry out the supervision and enforcement of these regulations. These regional banks monitor the activities of banks within their regions and ensure that they are operating appropriately.

The Federal Reserve also watches out for the public interest by monitoring banks that are seeking to merge with other banks or holding companies. The Fed rules on these requests according to the impact the merger will have on the local community and general public interest.

Fed Tasks: A Bank's Bank

Just as banks serve their customers, the Fed acts as a bank for banks. The Fed keeps the pipeline of transactions flowing. It [processes and clears](http://money.howstuffworks.com/personal-finance/budgeting/check-processing.htm) one-third of all the checks processed in the country -- that's about 20 billion checks per year. The regional Reserve Banks provide these services to the banks within their regions. The transactions are done on a fee basis, which is part of how the Federal Reserve supports itself. Banks are not required to use the Reserve Banks; they can choose to use a private competitor. This helps to ensure that the processing fees being charged are kept under control.

Influencing inflation takes a long time and has to be looked at as a long-term goal. Influencing employment and output, however, can be done more quickly and therefore is a short-term goal. Finding the balance between the two is key. The lags in the effects that monetary policy has on the economy are significant. This is why the Fed has to make forecasts of inflation prior to it actually happening -- one, two or even three years in advance. If the Fed waited until inflation were apparent, then it We'll talk about the economic indicators shortly.

## Fed Tasks: The Government's Bank

would be extremely difficult to catch up and get it back under control.

The Fed maintains the checking account of the [U.S. Treasury](http://www.treas.gov/). As the largest bank customer in the country, the U.S. government does quite a bit of business and performs a lot of financial transactions, all of which are handled by the Fed. These transactions amount to trillions of dollars and include all of the tax deposits and withdrawals for U.S. citizens. It also includes securities such as savings bonds, Treasury bills, notes, and bonds that are bought by and for the U.S. government.

Coin and paper currency produced by the U.S. Treasury's [Bureau of the Mint](http://www.usmint.gov/index.cfm) and [Bureau of Engraving and Printing](http://www.bep.treas.gov/) is distributed to financial institutions by the Fed as part of its role as the government's bank.

The Fed also monitors the condition of currency and either sends it back into circulation or has it destroyed. Because there are times during the year when people need more cash, currency is stored at Reserve Banks so that banks can order more paper money as they need it. These "orders" are paid for with funds from the bank's **reserve account balance** held with the Fed.

**The Fed Tool Box: The Reserve Requirement**

The most important job the Fed has is to manage the nation's money and the overall economy. Controlling the inflation rate and maintaining employment and production aren't easy tasks. The Fed has to have some pretty hefty tools up its sleeve in order to influence the economy of an entire country -- especially one the size of the United States. The Fed has to be able to affect the rate at which consumer banks and financial institutions create "checkbook" money for customers through the loans they grant and investments they offer. They do this by influencing short-term interest rates and the amount of money in circulation.

But how does it do that? The Fed uses three tools:

* **The reserve requirement**
* **The discount rate**
* **Open market operations**

The Reserve Requirement

In order to combat the problems of insufficient cash reserves (and the inability to pay depositors) that were faced before the creation of the Federal Reserve System, banks now have to set aside a certain amount of cash in "reserve." The reserve balance that banks must maintain is typically a percentage of their total interest-bearing and non-interest-bearing checking account deposits (currently 3% to 10%). In other words, the amount of a bank's required reserves will fluctuate depending on their account totals. The reserve is very important because it helps to ensure that the bank will always be able to give you your money when you ask for it.

This percentage of required reserves directly affects how much money they can "create" in their local economies through loans and investments. It is this connection between the required reserve amount and the amount of money a bank can lend that allows the Fed to influence the economy. If the reserve requirement is raised, then banks have less money to loan and this will have a restraining effect on the money supply. If the reserve requirement is lowered, then banks have more money to loan.

**Reserve money** is used to process check and electronic payments through the Federal Reserve and to meet unexpected cash outflows. These reserves can be held as "cash on hand," as a reserve balance at a regional Reserve Bank, or both.

Although the Fed has the power to do so, changing the amount of reserve cash a bank has to have can have dramatic effects on the economy; for this reason, this tool is rarely used. The Fed more often alters the supply of reserves available by buying and selling securities. When the Fed sells securities, it reduces the banks' supply of reserves. This makes interest rates go up. When the Fed buys securities, it increases the banks' supply of reserves. This makes interest rates go down.

All of this buying and selling is referred to as **open market operations** (discussed below).

In the event that a bank's money supply drops below the required reserve amount, that bank can borrow either from another bank or from a Reserve Bank. If it borrows from another bank's excess reserves, then the loan takes place in a private financial market called the **federal funds market**. The federal funds market interest rate, called the **funds rate**, adjusts according to the supply of and demand for reserves.

If a bank chooses to borrow emergency reserve funds from a Reserve Bank, then it pays an interest rate called the **discount rate**.

How do loans "create" money?

When banks loan money, that money is spent on goods or services. These goods or services create income for the people providing them, which they in turn spend on other good and services. When lots of loans are made, even more spending is done and more money is pumping through the economy.

When the Fed sees that too much money is going through the economy and prices are rising too quickly (inflation), they put the brakes on by selling securities. This reduces the amount of reserves available to banks, causing interest rates to rise, and banks will not make as many loans because it costs more for consumers to borrow. Ultimately, the economy slows down and inflation slows down with it.

**The Fed Tool Box: The Discount Rate**

The "discount rate" is the interest rate that a regional Reserve Bank charges banks and financial institutions when they borrow funds on a short-term basis. The Fed discourages banks from borrowing except for occasional, short-term emergency needs.

The discount rate often plays a larger role in the overall monetary policy than would be expected because it is a visible announcement of change in the Fed's monetary policy. Typically, higher discount rates indicate that more restrictive monetary policies are in store, while a lower rate might signal a less restrictive move.

Changes in the discount rate can affect:

* Lending rates (by making it either more or less expensive for banks to get money to lend or hold in reserve)
* Other open market interest rates in the economy (because of its "announcement effect")

## The Fed Tool Box: Open Market Operations

The most effective tool the Fed has, and the one it uses most often, is the buying and selling of government securities in its open market operations. Government securities include treasury bonds, notes, and bills. The Fed **buys securities** when it wants to increase the flow of money and credit, and **sells securities** when it wants to reduce the flow.

Here's how it works. The Fed purchases securities from a bank (or securities dealer) and pays for the securities by adding a credit to the bank's reserve (or to the dealer's account) for the amount purchased. The bank has to keep a percentage of these new funds in reserve, but can lend the excess money to another bank in the federal funds market. This increases the amount of money in the banking system and lowers the federal funds rate. This ultimately stimulates the economy by increasing business and consumer spending because banks have more money to lend and interest rates are lowered.

When the Fed wants to decrease the money supply, it sells securities. That transaction deducts the purchase amount from the bank's reserve (or the dealer's account). This reduces the amount of money the bank has to lend in the federal funds market and increases the federal funds rate. This move ultimately slows the economy down by decreasing the amount of money banks have to loan, which increases interest rates and typically reduces consumer and business spending.

 These decisions are made by the **Federal Open Market Committee** (FOMC), which consists of the seven members of the Board of Governors, the president of the Federal Reserve Bank of New York, and four rotating members from the other eleven Reserve Banks. This committee has eight meetings per year to discuss and direct the monetary policy. Additional emergency meetings are called when needed. The FOMC specifies either a quantity of reserves to be purchased or sold or a specific change in the federal funds rate. (The federal funds rate is the interest rate at which banks lend reserves to other banks.)

## The Fed Setup: Decentralization & Board of Governors

The Federal Reserve System was established in 1913 when Congress passed the **Federal Reserve Act**. Although the Fed is independent of the government, it is ultimately accountable to Congress because Congress can amend the Federal Reserve Act at any time. Its actions, however, do not require any kind of approval from the government.

The Fed is called a "**decentralized**" central bank, which in itself seems to be a contradiction. It works, however, because the Fed is uniquely structured to eliminate government control but still remains accountable to both the government and the public. The Board represents the interests on the government side, and the regional Reserve Banks (whose boards of directors consist of local citizens) represent the interests of the private side. In order to operate independently of the government, the Fed **finances its own operations**.

The Board of Governors

The Fed has a seven-member Board of Governors and 12 regional Reserve Banks. The U.S. president appoints (and the Senate confirms) the seven Governors, whose 14-year terms are staggered to prevent a single president from being able to appoint too many governors. The chairman of the Federal Reserve, who serves a four-year term, is also appointed by the president.

Member Banks

Any national bank that is chartered by the federal government is automatically a member of the Federal Reserve System. State banks have to meet specific standards that the Board of Governors sets in order to become members.

Member banks are required to buy [stock](http://money.howstuffworks.com/stock.htm) in their regional Reserve Banks. This stock doesn't give the bank any kind of voting privileges and cannot be sold or used as collateral for loans. What the banks do get is a six percent dividend on the stock and the ability to vote for the Class A and Class B directors of the Reserve Bank.

## The Fed Setup: Directors, Regionals, FOMC

District Directors

Each of the 12 Reserve Banks has nine directors on its board. The directors are responsible for the overall operations of their banks and report to the Board of Governors. The directors are divided into three groups that represent a cross-section of ideas and interests for the region. These groups are called Class A, Class B and Class C. Class A represents commercial banks that are members of the Federal Reserve System. These member banks elect both the Class A and Class B directors. Class B and C directors do not come from the banking industry. They represent the economic interests of the local district, including agriculture, manufacturing, labor, consumers and nonprofits, and are elected by the Board of Governors. This allows both the private sector and the government/public sector to have representation.

Regional Reserve Banks

Each regional Reserve Bank president is appointed to a five-year term by the bank's Board of Directors, but the Board of Governors gets the final say-so in the appointment.

FOMC

The Federal Open Market Committee (FOMC) consists of the seven members of the Board of Governors, the president of the Federal Reserve Bank of New York, who acts as vice chairman, and four members from the other eleven Reserve Banks that rotate at the end of each year.

Money Supply Measures

The Fed categorizes money based on its liquidity. It is divided into three categories:

* **M1** - The actual cash money supply, spending money, checking accounts and currency
* **M2** - A larger category that includes M1, small savings accounts and time deposits at banks, and money market mutual funds
* **M3** - Larger and less liquid, including corporate CDs, etc.

**Economic Indicators**

In order to develop the nation's monetary policy, the FOMC looks at many economic indicators. This gives the FOMC a feel for what the economy is doing and what direction it may be taking. It also looks to the **The Beige Book**, which is a report that summarizes comments received from businesses and other contacts outside of the Federal Reserve. This, in addition to economic indicators, forms the basis for the FOMC's monetary policy.

The Federal Reserve chairman accesses data about the economy every half hour or so when things in the economy are calm, and every 15 minutes when things aren't. This is simply to make sure nothing is happening in the economy that the chairman doesn't know about. The chairman can also tap into a network of business contacts that provide insight into a wide range of businesses, revealing who is buying what and in what amounts. By staying on top of where the economy is right now and where it is going, the Fed can project future changes and act accordingly.

Here are the economic indicators examined by the Fed:

* **Consumer Price Index** (CPI) - This indicates the change in price for a fixed set of merchandise and services intended to represent what a typical consumer might purchase over a given period. It is compiled monthly by the U.S. Department of Labor's Bureau of Labor Statistics. By keeping track of the rate of change in the CPI, the Fed can get an accurate measure of inflation.
* **Real Gross Domestic Product** (GDP) - The GDP is the total of all of the goods produced in the United States, regardless of who owns them or the nationality of the producers. The measurement is produced quarterly and accurately represents national output, meaning it uses real terms so inflation doesn't distort the numbers. It is used as an indicator of the performance and growth of the economy.
* **Housing Starts** - Because housing is very sensitive to interest rates, this indicator is tells the FOMC how financial changes are affecting consumers. Housing starts are an estimate of the number of housing units that started construction in a given period. The report is produced monthly.
* **Nonfarm Payroll Employment** - This measurement includes the total number of payroll jobs that are not in the farming business. It is produced each month by the U.S. Department of Labor's Bureau of Labor Statistics and also includes information about the total number of hours worked and hourly wages earned by workers. It is helpful to the FOMC as an economic indicator because it indicates the pace (or changes in the pace) of economic growth. The average hourly earnings number also shows trends in supply and demand.
* **S&P Stock Index** - The Standard & Poor Index shows the FOMC the changes in price in a very wide variety of stock. S&P compiles the index daily. The value of watching this index as an indicator of the economy is that it often indicates the confidence consumers and businesses have in the economy. If the market is rising, then investments and spending will rise; if the market is low or falling, then investments and spending will also slow down.
* **Industrial Production/Capacity Utilization** - This measures industrial output both by product and by industry. It is compiled by the Board of Governors each month and is useful because it tells the FOMC about the current growth of the Gross Domestic Product. By understanding the level of capacity utilization, the FOMC can understand how well resources are being utilized. All of this can indicate future changes in the rate of inflation.
* **Retail Sales** - This is a total of all merchandise sold by retail merchants in the United States. The numbers are presented in dollar amounts, and are adjusted for seasonality but not for inflation. The U.S Department of Commerce produces this report each month. This measurement tells the FOMC how much consumers are buying. This is called the **personal consumption expenditure** and indicates future growth or lags in the economy.
* **Business Sales and Inventories** - This is a measurement of the total sales and inventories for the manufacturing, wholesale, and retail sectors. This report is compiled monthly by the U.S. Department of Commerce and can be a good indicator of growth or slow downs in the economy because it shows the level of inventory and whether it is moving or not. Inventory that isn't moving indicates a future slow down; inventory that is moving may indicate an increase in future production.
* **Light-Weight Vehicle Sales** - Because changes in car sales can account for a large portion of the change in the GDP from quarter to quarter, this measurement has to be taken into account. The report is compiled by Ward's Automotive Reports and the American Automobile Manufacturer's Association, and seasonally adjusted numbers are generated by the U.S. Department of Commerce and the Bureau of Economic Affairs.
* **Yield on 10-year Treasury Bond** - This is simply the current market rate for U.S. Treasury bonds that will be maturing in 10 years. This is good as an indicator because mortgage rates tend to follow it. Changes in mortgage rates, in turn, indicate future changes in the housing industry.
* **M2** - Because there is often a link between the supply of money and the growth of the GDP, this measurement is yet another indicator that the FOMC looks to when making decisions about monetary policy. The report is produced by the Board of Governors weekly and monthly.

**Economic Indicators: Leading, Coincident, Lagging**

Economic indicators are categorized as leading, coincident, or lagging. **Leading** indicators anticipate the direction in which the economy is going. **Coincident** indicators tell the Fed about the economy's current status. **Lagging** indicators help the Fed determine how long a downturn or upturn in the economy will last because these indicators are affected months after an upturn or downturn has begun.

By studying the indicators as they fall into these categories, the Fed can determine the phase of the business cycle that the economy is in at the time. The four phases of the business cycle are:

1. **Expansion or recovery**
2. **Peak**
3. **Contraction or recession**
4. **Trough**

The categories of "leading," "coincident," and "lagging" indicate the turning points of the economy relative to the business cycle. As the economy moves from one phase to the next, these indicators change.

**How does the Fed support itself?**

In order to remain independent of the U.S. government, the Federal Reserve totally supports itself. It generates its income for the most part from **interest**. This interest comes from many sources, including:

* Government securities that it acquires through open market operations
* Foreign currency investments
* Bank/depository institution loans that the Fed makes using the discount rate

The Fed is also paid **fees** for services it provides such as funds transfers (Fedwire), [check processing](http://money.howstuffworks.com/personal-finance/budgeting/check-processing.htm), and automated clearinghouse (ACH) operations. (ACH options are electronic alternatives to the paper-based check system. Examples include automatic payroll deposits and electronic bill paying.)

Any money the Fed has left over after it pays all of its expenses are sent to the U.S. Treasury. Since the Federal Reserve System began in 1914, about 95 percent of the Reserve Banks' net earnings have ended up being paid into the Treasury.

## Checks and Balances

The structure of the Federal Reserve was carefully laid out to incorporate a strong system of checks and balances. Its decentralized status and broad range of participants eliminates the chances of any one group having too much control.

Each of the Fed's tools is under the authority of a different group within the system. For example, the Board of Governors has the authority to change bank reserve requirements; the boards of directors for the individual Reserve Banks can initiate changes to the discount rate (which then has to be approved by the Board of Governors); and the open market operations (the most important tool) is controlled by the FOMC, which represents both groups.

These checks and balances, along with the overall structure of the Federal Reserve, make sure that partisan interests don't have too much control and ensure that the Fed's decisions represent the broad interests and needs of the entire United States.

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