

## What is THE Interest Rate?

We often read and/or hear new stories about the Fed increasing THE interest rate. As consumers we are faced with several interest rates. We have credit cards, mortgages, personal loans, auto loans, student loans, savings accounts, money market accounts, CDs, and many other financial products. All of these products have various interest rates so what is THE interest rate and how does the Fed “change” it?

The interest rate that is manipulated by the Fed is the federal funds rate. (Notice the use of the word manipulate and not the word change.) The federal funds rate is the rate that commercial banks charge each other to borrow money. Since we often hear that the Fed is “changing” the interest rate, many of us assume that the Fed tells the banks what the federal funds rate should be. That’s actually not true. What the Fed actually does is set a target for the federal funds rate and use available tools to reach that target. Banks are free to charge each other a “fair” interest rate. For the purpose of this paper, a “fair” interest rate is any interest rate the lender offers and the borrower agrees to pay. So, if the banks agree to a fair interest rate, what’s the Fed’s role?

First, remember that banks make money by making loans to consumers and businesses. However, banks cannot use all of the money at their disposal to make these loans. Banks have to balance the fact that it wants to loan the depositor’s (your) money to someone else and the fact that the depositor (you) may need that money soon. So they loan a portion and keep a portion. Because the bank has many depositors and doesn’t expect everyone to need their money at once, the bank is confident that they will have money for any given depositor when he or she needs it. However, banks are not left to decide how much to keep and how much to loan. The Fed decides the required reserve ratio, which is the percentage of all deposits that the banks must have on hand. This is a minimum and banks can always choose to hold more money in reserves than required by the Fed.

Many of us have seen movies with the huge bank vaults with all the cash and dreamed about how we would spend all that money. Well banks, like most of us, don’t keep nearly as much cash as they used too. Much of the bank’s reserves are held in an account with the Fed. They debit and credit the account when they need money with little actual cash changing hands, similar to how we manage our bank accounts. But back to the main question. How does the Fed manipulate the rate that banks charge each other to borrow money (the federal funds rate) if they don’t directly set it?

The Fed uses a few tools. Let’s discuss the three biggest tools in the Fed’s toolbox – the required reserve ratio, the discount rate, and open market operations.

First, the required reserve ratio. As discussed above this is the amount of money that the Fed requires banks to keep (i.e. not loan out). The Fed has the authority to change this ratio at any time. Let’s think about how these changes affect the “fair interest rate” banks charge each other. Remember that banks make loans to consumers and businesses as a way to generate revenue. If the required reserve ratio is 15%, that means banks are allowed to loan 85% of their deposits. Banks that loan more than 85% to consumers and businesses can borrow money from other banks so that they have 15% of their deposits in their Fed account at the close of business. For the sake of the example, suppose the bank that needs additional funds borrows at a federal funds rate of 2%. Now, suppose the Fed thinks that federal funds rate is too low and would like to use the required reserve ratio to increase it. Should it increase or decrease the required reserve ratio? To answer this, you first need to consider what makes things more

expensive (increasing the interest rate makes borrowing money more expensive). In general, things that are in shorter supply are more expensive than things that are available in abundance. Using this general rule, the Fed should increase the required reserve ratio. If the Fed increases the amounts that banks must keep in reserves, the supply of money available to loan becomes smaller. This means that fewer banks will have additional funds to loan those banks that need to borrow. If the rate before the Fed increases the required reserve ratio was 2%, we expect that rate to increase. Without telling the banks to increase the federal funds rate, the Fed has caused the federal funds rate to increase. The Fed uses its skilled economists to decide how much the required reserve ratio should increase in order to push the federal funds rate to the target rate.

The second tool that we'll discuss is the discount rate. The discount rate is the rate that the Fed charges banks to borrow directly from the Fed. The Fed should always be the last resort for the bank, however the discount rate does allow the Fed to manipulate the federal funds rate. Again assuming the federal funds rate is 2% and the Fed wants to increase that rate, they could increase the discount rate. When the price of borrowing from the Fed is higher, banks are more cautious about the level of their reserves. If banks are being more cautious then they are collectively willing to loan less to banks that need to borrow and again we have the case of less available money. This will lead to the Fed's goal of a higher federal funds rate.

The final tool that we'll discuss is called open market operations. Open market operations is when the Fed decided to either buy or sell treasury bills. Just like in the other cases, open market operations affect the amount of money banks are willing to lend to each other. Let's stick to our previous example of the Fed wanting to increase the federal funds rate. As we've seen before, the key is to decrease the supply of money that the banks are willing to lend. To do this the Fed must sell treasury bills to the banks. By selling treasury bills to the banks, the banks willingly "give" the Fed part of the money that they would have loaned to other banks in exchange for the treasury bills. Once again there is less money to loan and the federal funds rate increases as the Fed desired.

Now the really important question. How does this affect the rate that I pay on my many loans and what I earn on my other financial products? We have to think about banks as businesses with expenses. As those expenses increase, the price of the product the business sells also increases. The bank is selling "money" in the form of loans. When the bank makes a loan to you, that's the product it's selling and the price you pay is the interest rate. If it becomes more expensive for the bank to borrow money (an operating expense), then it becomes more expensive for you to borrow money. Like most businesses, the banks don't pass the full amount of the cost increase to consumers and price changes don't happen rapidly. There are several other factors at play as it relates to any interest rate that any particular person or business faces, but the federal funds rate definitely plays a part in determining what that rate will be. In that sense, maybe it makes sense for the media to refer to the federal funds rate as THE interest rate.