## The Federal Reserve

hese notes focus on the Federal Reserve, but other Central Banks including the European Central Bank, Bank of England, and the Bank of Japan operate in similar ways. This analysis does not apply as well to Central Banks that directly manage exchange rates, like the Peoples Bank of China.

The Fed's mandate is determined by Congress through the Federal Reserve Act. This law states that the Fed is "to promote effectively the goals of maximum employment, stable prices, and moderate long-term interest rates. In consultation with Congress, the Fed has defined maximum employment as keeping unemployment near its natural rate (about 4%), although it does not directly try to increase unemployment if it is below its natural rate. The Fed also defines price stability as keeping core (excluding food and energy) consumer inflation near 2%.

In 2020, the Fed made some changes to how it interprets its dual mandate. Rather than trying to achieve 2% core inflation each month, the Fed switched to trying to average 2% over an unspecified timeframe. If inflation is thus under 2% for a while, the Fed seeks to allow inflation to rise moderately above 2% for a while to offset the initial shortfall. Likewise, the Fed no longer worries if unemployment is below its natural rate. It may lower rates if unemployment is too high, but it will not raise rates just because unemployment is too low. Finally, the Fed switched to a "broad and inclusive" definition of full employment. This means that instead of looking at only whether the aggregate unemployment rate is near its full employment level, the Fed considers whether the unemployment rate is below the natural rates for different sectors and socioeconomic groups.

*How the Fed Conducts Monetary Policy*

The Federal Open Market Committee (FOMC) is the entity that makes most decisions about interest rate policy. The FOMC usually meets eight times per year to make decisions regarding monetary policy. The FOMC consists of the Board of Governors, as well as the Presidents of the 12 regional branches of the Fed. These regional banks hold regulatory responsibilities for their geographic area; Lewiston is in the Boston Fed's district. The President of the New York Fed, as well as four other regional Presidents on a rotating basis, have voting rights, along with the Board of Governors. I am told that they use a square wooden table. I cannot say if it is stylish.

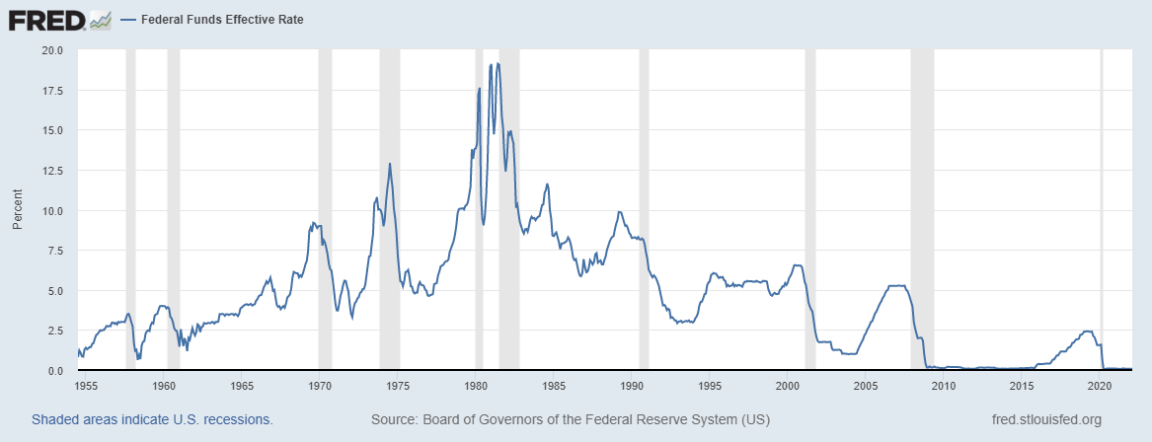
Congress created the Federal Reserve in 1913. As in other developed economies, the idea is that an independent monetary policy is better than allowing elected leaders conduct monetary

policy. The concern with the former is that politicians might choose policies that bring short-term benefits at the expense of larger, long-term costs. Independent monetary policy, for example, seems to result in less inflation.

The FOMC, since 1982, sets an interest rate target. Specifically, the FOMC targets the *Federal Funds Rate*, the short term interest rate at which banks lend each other their reserves at the Fed. The trading desk at the New York Fed implements this target. Their instructions are to conduct financial transactions in order to achieve this target.

Figure **??** shows the actual Federal Funds rate over time. The FOMC does not set the Federal Funds Rate, it sets a target. That target is hit with error.[1]

Figure 1: Effective Federal Funds Rate




## Channels of Monetary Policy

We now turn our attention to why the Fed affects interest rates. Recall that its legal mandate is to stabilize prices (interpreted as keeping inflation near 2%) and achieve full employment (interpreted a keeping unemployment near its natural rate). The quantity theory of money illustrates the connection between the money supply and inflation. So if the FOMC is worried that inflation is going to be above 2%, it has an incentive to raise interest rates which requires reducing the money supply and putting downward pressure on prices. If it is worried that inflation will be below 2%, that provides an incentive to lower interest rates, thereby increasing the money supply, and putting upward pressure on prices.

It is less clear why lower interest rates appear to increase employment in the short run. There are a few channels by which monetary policy works to do this:

[1]Source: St. Louis Fed.

1. Consider a business considering expanding its operations through investment. It will typically do this by issuing bonds to finance its investment. On these bonds, it will have to pay the risk free interest rate plus what is known as a risk premium that compensates borrowers for the risk of default. Depending on the firm, this risk premium may be very small or quite large. Lower interest rates thus make borrowing cheaper and incentivize firms to undertake more of it. Lower interest rates thus increase investment through this channel.In our AS/AD model, this is an increase to aggregate demand.
2. Recall that new housing also counts as investment. Mortgage rates are a form of interest rate. As they decrease, there is a stronger incentive to build more new housing. This is another way in which lower interest rates induce more investment and boost aggregate demand.

3. Some consumption goods are also financed through debt. New cars are a good example. Lower interest rates may thus also incentivize additional consumption.

Collectively, #1-3 are known as the *interest rate channel* because they reduce the cost of borrowing at the risk free rate.

4. Firms and households rarely borrow at the risk free rate. They must also pay a risk premium that is based on the probability and cost of a potential default. But a lower risk free rate itself makes default less likely. Lower risk free rates mean lower monthly payments that are easier to make. This in terms causes lower risk premiums that further incentivize investment and consumption. This is known as the *credit channel* and is especially important during financial crises like that of 2008.

*The Fed's balance sheet*

We will not go into too much detail on how the Fed affects interest rates. The basic idea is that the Fed creates money and uses this money to buy different types of debt, especially government debt) known as Treasuries) and mortgage debt. The faster the Fed buys debt, the less need their is for other lending. This lowers interest rates. As the amount of money has grown, the Fed has acquired more debt. The accumulation of these assets is known as the Fed's "balance sheet." As of March 2022, the Fed's balance sheet is $8.9 trillion.

One common misconception is that the Fed's balance sheet increases the national debt. While the Fed (which is part of the government) did buy $ trillions in assets, it did not borrow to do so. We will soon see that purchases by the fiscal authority, not the monetary authority, are responsible for the recent surge in the national debt.

Figure 2: Fed's Balance Sheet