

FRBSF ECONOMIC LETTER

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U.S. Monetary Policy: An Introduction

Part 3: How does monetary policy affect the U.S. economy?

This is the third of four consecutive issues devoted to our updated and expanded Q&A on monetary policy: (1) "How is the Federal Reserve structured?" and "What are the tools of U.S. monetary policy?" (2) "What are the goals of U.S. monetary policy?" (3) "How does monetary policy affect the U.S. economy?" and (4) "How does the Fed decide the appropriate setting for the policy instrument?" The revised text will appear in a pamphlet soon.

The point of implementing policy through raising or lowering interest rates is to affect people's and firms' demand for goods and services. This section discusses how policy actions affect real interest rates, which in turn affect demand and ultimately output, employment, and inflation.

What are real interest rates and why do they matter?

For the most part, the demand for goods and services is not related to the market interest rates quoted in the financial pages of newspapers, known as nominal rates. Instead, it is related to *real* interest rates—that is, nominal interest rates minus the expected rate of inflation.

For example, a borrower is likely to feel a lot happier about a car loan at 8% when the inflation rate is close to 10% (as it was in the late 1970s) than when the inflation rate is close to 2% (as it was in the late 1990s). In the first case, the real (or inflation-adjusted) value of the money that the borrower would pay back would actually be lower than the real value of the money when it was borrowed. Borrowers, of course, would love this situation, while lenders would be disinclined to make any loans.

So why doesn't the Fed just set the real interest rate on loans?

Remember, the Fed operates only in the market for bank reserves. Because it is the sole supplier of reserves, it can set the nominal funds rate. The Fed can't set real interest rates directly because it can't set inflation expectations directly, even though expected inflation is closely tied to what the Fed is expected to do in the future. Also, in general, the Fed has stayed out of the business of setting nominal rates for longer-term instruments and instead allows financial markets to determine longer-term interest rates.

How can the Fed influence long-term rates then?

Long-term interest rates reflect, in part, what people in financial markets expect the Fed to do in the future. For instance, if they think the Fed isn't focused on containing inflation, they'll be concerned that inflation might move up over the next few years. So they'll add a risk premium to long-term rates, which will make them higher. In other words, the markets' expectations about monetary policy tomorrow have a substantial impact on long-term interest rates today. Researchers have pointed out that the Fed could inform markets about future values of the funds rate in a number of ways. For example, the Fed could follow a policy of moving gradually once it starts changing interest rates. Or, the Fed could issue statements about what kinds of developments the FOMC is likely to focus on in the foreseeable future; the Fed even could make more explicit statements about the future stance of policy.

How do these policy-induced changes in real interest rates affect the economy?

Changes in real interest rates affect the public's demand for goods and services mainly by altering borrowing costs, the availability of bank loans, the wealth of households, and foreign exchange rates.

For example, a decrease in real interest rates lowers the cost of borrowing; that leads businesses to increase investment spending, and it leads households to buy durable goods, such as autos and new homes.

In addition, lower real rates and a healthy economy may increase banks' willingness to lend to businesses and households. This may increase spending, especially by smaller borrowers who have few sources of credit other than banks.

Lower real rates also make common stocks and other such investments more attractive than bonds and other debt instruments; as a result, common stock prices tend to rise. Households with stocks in their portfolios find that the value of their holdings is higher, and this increase in wealth makes them willing to spend more. Higher stock prices also make it more attractive for businesses to invest in plant and equipment by issuing stock.

In the short run, lower real interest rates in the U.S. also tend to reduce the foreign exchange value of the dollar, which lowers the prices of the U.S.-produced goods we sell abroad and raises the prices we pay for foreign-produced goods. This leads to higher aggregate spending on goods and services produced in the U.S.

The increase in aggregate demand for the economy's output through these different channels leads firms to raise production and employment, which in turn increases business spending on capital goods even further by making greater demands on existing factory capacity. It also boosts consumption further because of the income gains that result from the higher level of economic output.

How does monetary policy affect inflation?

Wages and prices will begin to rise at faster rates if monetary policy stimulates aggregate demand enough to push labor and capital markets beyond their long-run capacities. In fact, a monetary policy that persistently attempts to keep short-term real rates low will lead eventually to higher inflation and higher nominal interest rates, with no permanent increases in the growth of output or decreases in unemployment. As noted earlier, in the long run, output and employment cannot be set by monetary policy. In other words, while there is a trade-off between higher inflation and lower unemployment in the short run, the trade-off disappears in the long run.

Policy also affects inflation directly through people's expectations about future inflation. For example, suppose the Fed eases monetary policy. If consumers and businesspeople figure that will mean higher inflation in the future, they'll ask for bigger increases in wages and prices. That in itself will raise inflation without big changes in employment and output.

Doesn't U.S. inflation depend on worldwide capacity, not just U.S. capacity?

In this era of intense global competition, it might seem parochial to focus on U.S. capacity as a determi-

nant of U.S. inflation, rather than on world capacity. For example, some argue that even if unemployment in the U.S. drops to very low levels, U.S. workers wouldn't be able to push for higher wages because they're competing for jobs with workers abroad, who are willing to accept much lower wages. The implication is that inflation is unlikely to rise even if the Fed adopts an easier monetary policy.

This reasoning doesn't hold up too well, however, for a couple of reasons. First, a large proportion of what we consume in the U.S. isn't affected very much by foreign trade. One example is health care, which isn't traded internationally and which amounts to nearly 15% of U.S. GDP.

More important, perhaps, is the fact that such arguments ignore the role of flexible exchange rates. If the Fed were to adopt an easier policy, it would tend to increase the supply of U.S. dollars in the market. Ultimately, this would tend to drive down the value of the dollar relative to other countries, as U.S. consumers and firms used some of this increased money supply to buy foreign goods and foreigners got rid of the additional U.S. currency they did not want. Thus, the price of foreign goods in terms of U.S. dollars would go up—even though they would not in terms of the foreign currency. The higher prices of imported goods would, in turn, tend to raise the prices of U.S. goods.

How long does it take a policy action to affect the economy and inflation?

It can take a fairly long time for a monetary policy action to affect the economy and inflation. And the lags can vary a lot, too. For example, the major effects on output can take anywhere from three months to two years. And the effects on inflation tend to involve even longer lags, perhaps one to three years, or more.

Why are the lags so hard to predict?

So far, we've described a complex chain of events that links a change in the funds rate with subsequent changes in output and inflation. Developments anywhere along this chain can alter how much a policy action will affect the economy and when.

For example, one link in the chain is long-term interest rates, and they can respond differently to a policy action, depending on the market's expectations about future Fed policy. If markets expect a change in the funds rate to be the beginning of a series of moves in the same direction, they'll factor in those future changes right away, and long-term

rates will react by more than if markets had expected the Fed to take no further action. In contrast, if markets had anticipated the policy action, long-term rates may not move much at all because they would have factored it into the rates already. As a result, the same policy move can appear to have different effects on financial markets and, through them, on output and inflation.

Similarly, the effect of a policy action on the economy also depends on what people and firms outside the financial sector think the Fed action means for inflation in the future. If people believe that a tightening of policy means the Fed is determined to keep inflation under control, they'll immediately expect low inflation in the future, so they're likely to ask for smaller wage and price increases, and this will help achieve low inflation. But if people aren't convinced that the Fed is going to contain inflation, they're likely to ask for bigger wage and price increases, and that means that inflation is likely to rise. In this case, the only way to bring inflation down is to tighten so much and for so long that there are significant losses in employment and output.

What problems do lags cause?

The Fed's job would be much easier if monetary policy had swift and sure effects. Policymakers could set policy, see its effects, and then adjust the settings until they eliminated any discrepancy between economic developments and the goals.

But with the long lags associated with monetary policy actions, the Fed must try to anticipate the effects of its policy actions into the distant future.

To see why, suppose the Fed waits to shift its policy stance until it actually sees an increase in inflation. That would mean that inflationary momentum already had developed, so the task of reducing inflation would be that much harder and more costly in terms of job losses. Not surprisingly, anticipating policy effects in the future is one of the more difficult parts of conducting monetary policy, and it's a key issue in the next and final *Economic Letter* in this series, "How does the Fed decide the appropriate setting for the policy instrument?"

Suggested reading

For further discussion of the topics in this article, see the following issues of the *FRBSF Economic Letter*.

93-38 "Real Interest Rates," by Bharat Trehan. <http://www.frbsf.org/publications/economics/letter/1993/el93-38.pdf>

95-05 "What Are the Lags in Monetary Policy?" by Glenn Rudebusch. <http://www.frbsf.org/publications/economics/letter/1995/el1995-05.pdf>

95-23 "Federal Reserve Policy and the Predictability of Interest Rates," by Glenn Rudebusch. <http://www.frbsf.org/publications/economics/letter/1995/el1995-23.pdf>

97-18 "Interest Rates and Monetary Policy," by Glenn Rudebusch. <http://www.frbsf.org/econsrch/wklyltr/el97-18.html>

2002-30 "Setting the Interest Rate," by Milton Marquis. <http://www.frbsf.org/publications/economics/letter/2002/el2002-30.html>

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