Price stability is a significant objective of monetary policy. When inflation is high, variable or both, it interferes with the efficient operation of the economy and can reduce economic growth. In addition, once expectations of high inflation have been set, bringing inflation back down can be painful.

**KEY POINTS**

- When inflation is high, variable, or both, it interferes with the efficient operation of the economy and can reduce economic growth.
- Once expectations of high inflation have been set, bringing inflation back down can be painful.
- A monetary policy regime of price stability involves a credible commitment by the monetary authority to conduct policy in a systematic manner so that inflation remains low and stable.
- Countries that have adopted “inflation targeting” regimes have generally enjoyed greater price stability.
- The Fed has specified that its long-run goal for inflation is a 2 percent average rate. This policy, combined with earlier actions, likely will strengthen the Fed’s credibility and therefore its ability to achieve both low, stable inflation and maximum sustainable employment.

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**DISCUSSION**

Americans have been enjoying a long period of price stability. At its modern peak in 1980, consumer price inflation stood at 13.5 percent; since 1983, in contrast, there has been only one year, 1990, when it reached even 5 percent on an annual basis. Most years during that period, it has ranged from 2 percent to 4 percent. Thus, for three decades, general price inflation has not been a salient issue in the day-to-day economic decisions of the American public.

For some members of the public, the prospect of greater inflation became a concern on account of the Fed’s large-scale asset purchases, colloquially known as “QE” (for “quantitative easing”), which began during the Great Recession of 2007–09 and ended in October 2014. The concern was that when the Fed purchases assets, such as Treasury securities, and essentially creates new money to do so, as it has done in carrying out these programs, the creation of new money could prove to be inflationary. Recent inflation figures, as well as financial indicators such as bond yields, do not suggest that high inflation is on its way back; indeed, in the time since the Fed announced an inflation target of 2 percent in January 2012, the inflation rate has generally stayed below that target. Instead of fueling a dramatic expansion in bank deposits and lending, and therefore in the broader money supply, which likely would be associated with high inflation, much of the new money is being held as excess reserves with the Fed.

To be sure, some individual goods and services have seen significant price increases at various
times even as overall inflation has remained low. Because the Bureau of Labor Statistics determines the consumer price index (CPI) by tracking the prices of a basket of representative goods and services, the CPI can stay level while some goods and services are rising in price and others are falling. Different goods and services have different weights in the calculation of the CPI, and the basket includes dozens of goods and services. So a 10 percent increase in the price of any good always would translate into less than a 10 percent increase in the overall CPI; just how much of an increase depends on the amount of weight that the good has been assigned by the Bureau of Labor Statistics. Gasoline, for example, is weighted as 3 percent of purchases (meaning a typical household spends approximately 3 percent of the value of its total purchases of goods and services on gasoline). So a 10 percent increase in the price of gasoline would add only 0.3 percentage points to the CPI. The personal consumption expenditures (PCE) price index, an alternative measure of inflation used by the Fed, is also based on a weighted average of price changes for goods and services.

**The Importance of Price Stability**

Maintaining stable prices is one of the three objectives Congress defined for the Fed in the Federal Reserve Act, along with maximum employment and moderate long-term interest rates. Inflation is a concern of policymakers for good reason: It eats into the purchasing power of households’ money and effectively taxes their consumption of goods and services, even if they are not always aware of it. In theory, this “inflation tax” is reduced during a period of declining use of cash, as households keep more assets in deposit accounts and less in currency; in practice, however, interest rates on deposit accounts tend not to move closely with inflation. Additionally, the smooth increase in currency in circulation suggests that the shift away from cash is happening more slowly than commonly believed.

The worst-case scenario — which, fortunately, the United States has never remotely approached — is hyperinflation. In Argentina in 1989, inflation hit 3,080 percent; in October 1923, inflation in Germany reached 29,720 percent. In such cases, the effect on the economy and on everyday life is severe as money starts to break down as a medium of exchange. Workers may have to be paid multiple times a day to keep up with rising nominal prices of food and other essentials, while banks may be unable to function because they cannot set interest rates high enough to attract deposits. Also, it is well-documented that growth falls sharply during periods of high inflation — not only during an Argentina-like hyperinflation crisis, but also during periods when inflation reaches lower, but still significant, levels in the range of 40 percent or more (López-Villavicencio and Mignon 2011; Bruno and Easterly 1998).

But how do less drastic levels of inflation affect economic activity? It is helpful to break this question into two parts. First, how does inflation affect economic activity when its level is steady and known? Second, how does inflation affect the economy when its level is variable and unpredictable?

Steady inflation creates inefficiency as it forces market participants to find ways to protect themselves from money’s declining value. Even at modest levels, inflation may eat into purchasing power relatively quickly. For example, at an inflation rate of 6 percent, money loses half its value every 12 years. Indeed, even with the modest inflation rates of the past three decades, the dollar cumulatively has lost considerable value over time. According to CPI data, a dollar in 1983 is now worth 42 cents in constant dollars — that is, it would now purchase 42 percent of what it would have in 1983.

Most households and firms are able to protect themselves from steady inflation — for example, with inflation-indexed contracts or frequent price increases — but these devices require resources. Moreover, to the extent that they track inflation imperfectly, such devices create inefficient distortions in relative prices. It has been estimated that a permanent reduction in the inflation rate of 1 percentage point leads, on average, to an increase in per-capita income of 0.5 percent to 2 percent. While the countries and years covered by this research included few data points in which inflation was less than 3 percent, the research did find that the improvement in per-capita income from reduced inflation occurs even at relatively modest inflation levels, such as a reduction in inflation from 4 percent to 3 percent (Andrés and Hernando 1997).

High inflation rarely follows a steady course; rather, inflation and inflation variability tend to go together (Dotsey and Sarte 2000). When inflation is variable, the problems of inflation are amplified because economic agents must then make pricing and purchasing decisions under uncertain conditions. Instead of simply
building a known inflation factor into their prices, market participants must adjust for inflation risk. While sellers can readily take steady inflation into account in setting prices and determining the future costs of inputs, variable inflation makes it difficult to know the real value of any nominal deal. This effect is reflected, for example, in the fact that loans are priced with a risk premium to capture the uncertainty of future inflation. Some empirical evidence indeed suggests that policies that reduce inflation variability are likely to promote economic growth (Elder 2004) independent of the inflation level.

The Role of Monetary Policy in Inflation

“Inflation is always and everywhere a monetary phenomenon,” argued the Nobel Memorial Prize-winning economist Milton Friedman. What he meant was that general and sustained inflation can come about only through a faster increase in the quantity of money than in economic output. The relationship between the money supply and inflation is one of the crucial considerations of macroeconomic policy, but it has likely changed in fundamental ways in recent years because of changes in how monetary policy is conducted by the Federal Reserve. Prior to 2008, an increase in the monetary base (currency plus bank reserves) was generally agreed to affect inflation or output, with the short-run effect tending toward output and the long-run effect entirely on inflation. In the post-2008 world, monetary policy remains central in the determination of inflation, but the role of the monetary base is much reduced.

Prior to October 2008, in the short run, inflation could diverge from growth in the monetary base and the money supply: An increase in the money supply would not instantly lead to an increase in prices. Because prices are often “sticky” in the short run — it may be costly for firms to change their prices, and it takes time for firms to determine where to set their prices — easy money would cause output growth to increase temporarily. If economic growth was previously flat or below its long-run sustainable level, this temporary increase in growth would push the economy’s growth closer to its sustainable level or even higher than its sustainable level.

In the long run, prices gradually would adjust upward in response to an increase in the money supply. Some market participants would react to increasing nominal demand by raising the prices at which they sell goods and services, including those of inputs to other firms. Firms that then experienced input price increases would follow with their own price increases in an attempt to maintain their markups. In addition, workers facing price increases likely would press for wage hikes. Under the policy conditions that existed in the United States before 2008, this was the process through which inflation could take hold.

What changed in October 2008 is that the Fed received authority from Congress to pay interest on required reserves (reserves that banks are required to hold at the Fed) and excess reserves (reserves at the Fed above the level banks are required to hold there). The ability of the Fed to pay interest on excess reserves, in particular, has had major implications for the effects of the Fed’s quantitative easing policy. The Fed responded to the 2007–09 recession in part by engaging in massive purchases of Treasuries and mortgage-backed securities — adding greatly to the monetary base. By adjusting the interest rate on reserves appropriately, inducing banks to maintain high levels of excess reserves at the Fed, the Fed can avert the scenario in which this infusion into the monetary base eventually translates into inflationary increases in bank deposits and lending and, therefore, in the money supply (Walter and Haltom 2009; Price 2013).

In short, in the post-2008 world, the Fed controls inflation by controlling the interest rate on excess reserves, even with a tremendous quantity of reserves outstanding. Thus, an increase in the monetary base no longer necessarily leads to an increase in the money supply or, therefore, to an increase in inflation. Put differently, the familiar textbook relationship between central bank money creation and inflation has become less useful for understanding inflation determination.

Inflation and Expectations

Whatever the mechanism for inflation under a given policy regime, the Fed must manage not only current inflation, but also the public’s expectations regarding inflation. Firms base their pricing decisions, and workers base their wage demands, in part on their expectations of future inflation. The higher inflation rises, the more difficult it is to change those expectations and the more painful the process of bringing inflation back down. For example, when the Fed under
Chairman Paul Volcker adopted a tight monetary policy in late 1979 in response to high inflation, the result was a deep recession in 1981–82. High unemployment persisted afterward, exceeding 10 percent from September 1982 to June 1983. (There was also a shorter-lived recession in 1980 that is typically attributed to President Carter’s credit-control program rather than monetary policy.) Hence, policymakers must be careful to avoid overly loose monetary policy, especially when the economy is operating at or near its long-run sustainable level, in which case it is likely to quickly induce inflation.

Part of the problem faced by the Fed in the early 1980s was a lack of credibility. Because the public was not convinced, after years of high inflation, that the Fed would maintain its tight-money policy, prices were slow to adjust and economic growth fell dramatically. In light of the role of expectations in the process of inflation, price stability requires a credible commitment by monetary authorities (Mehra and Reilly 2008; Lacker 2007; Broaddus and Goodfriend 2004).

One mechanism for achieving such credibility is a regime of “inflation targeting.” The central bank adopts a target inflation rate and publicly commits to achieving that target — and to addressing departures from the target rate with strong monetary action, if necessary. If the central bank can credibly announce an inflation target, and thereby overcome the inflation expectations that could otherwise be created by short-term fluctuations in inflation, the central bank will be better able to maintain price stability and economic growth (Hetzel 2005; Lacker 2005). The United Kingdom, Canada, Sweden, and New Zealand have generally had greater price stability since adopting inflation targeting in the early 1990s (Roger 2009; Fregert and Jonung 2008).

When the Federal Open Market Committee (FOMC) made its January 2012 announcement of its long-run goal for inflation of 2 percent, the FOMC said it believed an explicit inflation target would help to “keep longer-term inflation expectations firmly anchored, thereby fostering price stability and moderate long-term interest rates and enhancing the Committee’s ability to promote maximum employment in the face of significant economic disturbances.” Prior to the announcement, many observers had long believed that the Fed had a regime of implicit inflation targeting.

Although the central concern of monetary policymakers since the early 1980s has been keeping inflation low and stable, some attention has shifted in recent years to a different problem: the possibility of inflation having become persistently too low. In both the United States and Europe, inflation has been persistently lower than the central banks’ targets. For some observers, persistently low inflation is a concern because it can make the economy susceptible to “interference” from the zero lower bound on nominal interest rates. It remains an open question how to interpret the relatively low inflation readings and near-zero nominal interest rates of recent years. The zero bound may be interfering with the Fed’s ability to bring inflation back to target, or we may simply be observing inevitable modest fluctuations of the inflation rate around its target (Hornstein, Johnson, and Rhodes 2015). The course of inflation and nominal interest rates in coming years will help shape how policymakers think about this issue.

REFERENCES

Richmond Fed References


Lacker, Jeffrey M. “Inflation Targeting and the Conduct of Monetary Policy.” Speech at the University of Richmond, Richmond, Va., March 1, 2005.


Other References


Research Publications
Federal Reserve Bank of Richmond
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