

# A DUAL MANDATE FOR THE FEDERAL RESERVE: THE PURSUIT OF PRICE STABILITY AND FULL EMPLOYMENT

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The Federal Reserve (the Fed) currently has two legislated goals: price stability and full employment.<sup>1</sup> The original Federal Reserve Act, in 1913, contained no macroeconomic goals. Rather it instructed the Fed to prevent financial panics and bank runs by providing loans to the banking system. In the aftermath of the Great Depression, the 1946 Employment Act required the Fed to pursue “conditions under which there will be afforded useful employment opportunities . . . for those able, willing, and seeking to work, and to promote maximum employment, production, and purchasing power.” By the 1970s the term maximum employment was understood to mean not zero percent unemployment, but the level of unemployment that arises in a healthy economy as employers and employees seek good matches. In 1978, the Full Employment and Balanced Growth Act required the federal government to “promote full employment . . . and reasonable price stability.”

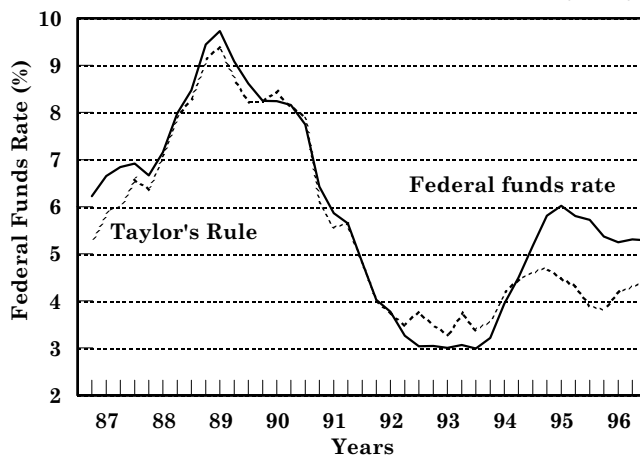
Although the dual mandate exists, Congress is now debating whether the Fed should assign primacy to fighting inflation. In response to research on inflation targeting, several bills have been introduced in Congress [Saxton, 1999]. These bills would make price stability the “primary and overriding goal” of monetary policy. Typically they would require the Fed to establish an explicit numerical goal for inflation and to specify the time frame for achieving this goal.

There are, however, several reasons why the Fed should continue to emphasize full employment. First, under the current mandate the United States has experienced low unemployment and low inflation, while many countries whose central banks target inflation are experiencing double-digit unemployment. Second, the costs of unemployment are known to be substantial, while the costs of moderate inflation are probably not large. Third, central bankers tend to be inflation-averse and, if anything, need to be prodded to pursue goals other than reducing inflation. Fourth, if the Fed pursues only price stability, the price level is not free to increase; such an increase may be necessary to avoid a large rise in unemployment following an adverse supply shock.

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**FIGURE 1**  
**Federal Funds Rate and Rate Recommended by Taylor's Rule**



This paper reviews the behavior of the Fed under its current mandate. It evaluates arguments for inflation targeting in light of recent monetary policy experience. It then discusses why the Fed's mandate should include full employment.

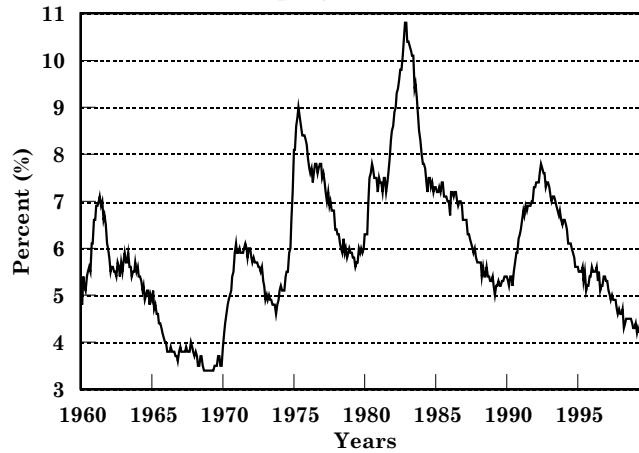
### FEDERAL RESERVE BEHAVIOR UNDER THE CURRENT MANDATE

The Fed can affect inflation and unemployment by manipulating the federal funds rate, the rate banks charge each other on one-day loans. The Fed sets a target value for the federal funds rate and then adjusts the amount of funds (reserves) in the banking system to cause the federal funds rate to move toward the target value. When the federal funds rate increases, longer-term interest rates tend to increase and the dollar tends to appreciate. The increase in longer-term rates reduces spending on interest-sensitive items such as houses and automobiles; the appreciation of the dollar reduces spending on net exports. As spending declines, employment, output, and inflation decline as well. Thus, when the Fed seeks to lower inflation, it raises the federal funds rate target, and when it seeks to lower unemployment, it decreases the rate target.

There is abundant evidence that the Fed adjusts the federal funds rate target in response to fluctuations in output (and consequently employment) and to fluctuations in inflation. One piece of evidence is the consistency of the actual federal funds rates with "Taylor's rule." Taylor's rule is a method of calculating a recommended rate, assigning equal weight to deviations of output from its potential level and to deviations of inflation from its target [Taylor, 1998].<sup>2</sup> As Figure 1 shows, the actual federal funds rate tracks this recommended rate well. Formal statistical tests [Judd and Rudebusch, 1999] indicate that Taylor's rule has closely predicted funds rate movements during the Greenspan years.

A second piece of evidence comes from statements of Fed officials. Fed governor Laurence H. Meyer has stated that the dual objectives of monetary policy are "short-

**FIGURE 2**  
**Unemployment Rate**



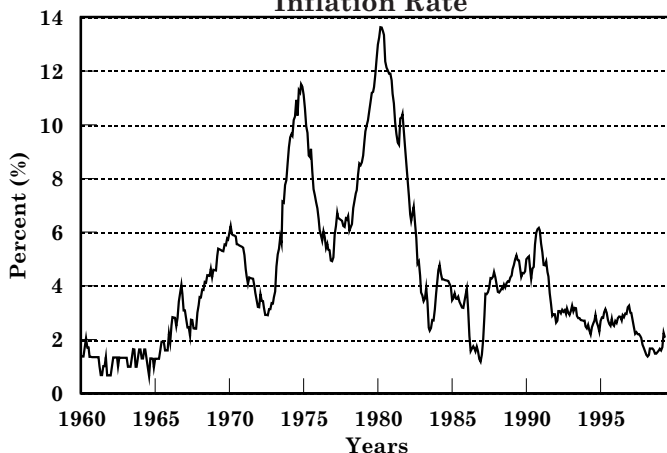
run stabilization of output relative to potential and long-run price stability” [1998, 3]. Fed governor Roger Ferguson [1999] similarly has said that the Fed accepts the mandated goals of high employment, price stability, and moderate long-term interest rates. Fed Chairman Alan Greenspan has remarked on the easing of monetary policy between 1990 and 1992 to achieve “a satisfactory recovery from the recession of that period” [1997b, 4] and the tightening of policy in 1994 and 1995 to prevent inflation from developing.

A third piece of evidence comes from the fed funds futures market. The futures market reflects market expectations of changes in the federal funds rate one month in the future. Researchers [Burger, 1999] have found that news of higher-than-expected inflation raises the fed funds futures rate and news of higher-than-expected unemployment lowers the fed funds futures rate. This indicates that market participants expect the Fed to raise the federal funds rate when inflation increases and to lower the federal funds rate when unemployment decreases. Thus, market participants, who bet money on their theories, believe that the Fed tries to prevent both high inflation and high unemployment.

A final piece of evidence comes from recent monetary policy history. At times, for example in 1994, the Fed has raised the federal funds rate to fight inflation, and, at other times, for example from 1990 to 1992, the Fed has lowered the federal funds rate to fight unemployment.

In recent years, during which the Fed has focused on both inflation and unemployment, macroeconomic performance has been excellent. Both unemployment and inflation in 2000 are near 30-year lows (see Figures 2 and 3). Since both high economic growth and low inflation benefit the stock market [Fischer and Merton, 1984; Boudoukh, Richardson, and Whitelaw, 1994], recent macroeconomic performance has contributed to the almost 200 percent increase in the Dow Jones Industrial Average between 1995 and 2000.

**FIGURE 3**  
**Inflation Rate**



## INFLATION TARGETING

In spite of the economy's good performance under the dual mandate of the Full Employment and Balanced Growth Act, research on inflation targeting has convinced many analysts that the mandate needs to be changed. Inflation targeting has been advocated by distinguished economists such as Ben Bernanke and Frederic Mishkin. According to Bernanke and Mishkin [1997], inflation targeting involves announcing clearly that low and stable inflation is the overriding goal of monetary policy, and specifying a target range for inflation. In some countries (for example, New Zealand) central bank heads can lose their jobs, or at least their reputations and prestige, if inflation exceeds the specified target range.

The case for inflation targeting rests on several arguments [Bernanke, Laubach, Mishkin, and Posen, 1999]. First, monetary policy cannot affect real variables in the long run; it can affect only inflation. Second, monetary policy cannot be used effectively to moderate short-run economic fluctuations because it has an inflationary bias. Third, even moderate rates of inflation are harmful to economic growth. Fourth, a nominal anchor for monetary policy is necessary, and inflation targeting provides such an anchor.

The idea that monetary policy can affect only inflation in the long run comes from Milton Friedman's [1968] and Edmund Phelps's [1968] natural rate theory. They argued that expansionary monetary policy will lower interest rates and increase spending. The increase in spending will increase the price of goods and services before it increases the price of labor. As firms receive more for what they produce and pay the same for their labor input, their profits will increase. This will cause them to increase employment and output. However, as workers realize that inflation has increased, they will demand higher wages. As wages increase by the same amount as prices, firms' profits and thus their output and employment return to their pre-expansionary levels. Inflation, however, will be higher. The level of unemployment before the monetary expansion begins and after it runs its course is labeled the natural rate. Friedman and Phelps claimed that expansionary monetary policy causes unemployment to

fall below the natural rate temporarily and inflation to increase above its initial level permanently.

A major reason why many doubt that discretionary policy can be used effectively to moderate economic fluctuations is that they believe that activist policy has an inflationary bias. The idea of an inflationary bias springs from the work of Kydland and Prescott [1977] and Barro and Gordon [1983]. These authors assume that the central bank wants both unemployment below the natural rate and low inflation. An increase in the money supply relative to the price level would temporarily reduce unemployment. However, according to the natural rate theory, prices and wages would eventually rise and unemployment would return to its natural rate level. As firms and workers recognize that the central bank is seeking temporary declines in unemployment through inflationary policy, wages and prices would begin adjusting rapidly. Thus, a central bank known to be seeking unemployment below the natural rate would tend to create higher inflation (the inflationary bias) without affecting unemployment on average.

Bernanke, Laubach, Mishkin, and Posen [1999] have asserted that even low inflation can impose costs on the economy. Inflation complicates long-term decision making; thus individuals and firms may make suboptimal decisions about such things as how much to save for retirement and how much capital to accumulate. Inflation, if unexpected, redistributes wealth from lenders to borrowers. In addition, since taxes are not fully indexed to inflation, inflation can lead to the flow of capital to sectors that provide more favorable tax benefits rather than to sectors offering higher before-tax returns. Feldstein [1997] has argued that because of distortions such as these, inflation should be reduced to zero.

Bernanke, Laubach, Mishkin, and Posen [1999] also discuss the importance of establishing a nominal anchor for policy, such as a target for inflation or the exchange rate. Under the gold standard, the value of the currency was defined in terms of gold, and currency and bank reserves issued by the Fed were backed by gold. This limited the ability of the Fed to print money and so cause inflation. Under a system of fiduciary money, such as the United States now has, the value of a dollar is not backed by any commodity. Thus there is no constraint on how much money the Fed can create and consequently on how much inflation it can cause. By clearly communicating a commitment to price stability and acting accordingly, the Fed could provide a nominal anchor for the price level. The public would then be less likely to expect large increases in inflation, and the Fed would have more freedom to stimulate the economy without generating inflationary fears.

## **MONETARY POLICY HISTORY FROM 1960 TO 1999**

To shed light on inflation targeting and on how monetary policy works in the United States, a brief narrative of recent experience is useful. The discussion that follows relates policy to the accelerating inflation of the 1970s, the painful disinflation of the 1980s, and the period of high growth and low inflation in the 1990s.

The 1960s was viewed as a successful time for macroeconomic policy and for the economy [Dornbusch, Fischer, and Startz, 1998]. The decade started with a brief recession, from April 1960 to February 1961, and a rising unemployment rate, which

peaked at 7.1 percent (see Figure 2). In 1964 a cut in personal and corporate income taxes stimulated the economy. Monetary policy accommodated the tax cut by holding interest rates constant [Okun, 1970]. Unemployment responded by falling below 5 percent in 1965 and not exceeding 4 percent from 1966 to 1970.

The stimulus from the tax cut coupled with spending on the Vietnam War generated concern that demand was too high relative to the economy's ability to produce. In 1966 and 1967 monetary policy sought to prevent the economy from overheating. President Lyndon Johnson, despite warnings about incipient inflation, was unwilling to restrict fiscal policy. Finally, in 1968 he agreed to a temporary tax increase, which did little to reduce total spending or inflation [Eisner, 1971]. Inflation at the end of the decade was about 6 percent, up from about 1 percent in 1960 (see Figure 3).

In 1971 President Richard Nixon instituted wage and price controls to fight inflation, and Fed chairman Arthur Burns implemented expansionary monetary policy. Burns hoped that price controls could contain inflation, leaving him free to pursue expansionary policy [Pierce, 1979]. What actually happened was that the expansionary policy raised the underlying inflation rate.

Inflation was aggravated by the oil embargo that began in October 1973 and lasted until March 1974. The annual rate of change of the consumer price index rose from 5.5 percent before the crisis to over 11 percent at the end of 1974. Inflation of this magnitude had not been seen in the United States for nearly 30 years.

In April 1974 the Fed shifted its emphasis to fighting inflation. Over the second and third quarters of 1974 it focused on slowing the growth rate of the money supply. By reducing money supply growth, the Fed caused the federal funds rate to rise by more than 450 basis points between March and July. Bernanke, Gertler, and Watson [1997], using a technique called impulse-response functions, find that this funds rate increase can be explained mainly by concern about inflation. Other interest rates rose along with the federal funds rate, contributing to a slowdown in interest-sensitive sectors and a recession.<sup>3</sup>

The Fed did succeed in bringing inflation down, although at a large cost in terms of unemployment. Between 1974 and 1976 trend annual inflation declined 4 percentage points [Ball, 1994]. As Figure 2 shows, aggregate unemployment increased 3.5 percentage points between the summer of 1974 and 1975, when it reached a peak for the decade of 9 percent.

A second oil price shock hit in 1979, triggering inflation and disinflationary monetary policy. In October 1979, with annual inflation exceeding 10 percent and the unemployment rate at 6 percent, Fed Chairman Paul Volcker declared his commitment to fight inflation. Accepting the arguments of monetarists such as Friedman, he attempted to reduce money supply growth to fight inflation. The growth of the M1 money supply (that is, currency plus checkable deposits) was steadily reduced from 9 percent at an annual rate for the first three quarters of 1979 to 4.6 percent at an annual rate for the first two quarters of 1982. This monetary contraction was associated with an 800-basis-point increase in the federal funds rate and 500-basis-point increase in long-term Treasury and corporate bond yields. Interest-sensitive sectors were decimated, with employment declining 18.3 percent in durable goods and 14.6 percent in construction between September 1979 and the end of 1982.

The declines in interest-sensitive sectors reduced economic activity more generally, causing inflation to fall and unemployment to soar. Between 1979 and 1982, trend annual inflation declined 8 percentage points [Ball, 1994]. As Figure 2 shows, between the fall of 1979 and the end of 1982, aggregate unemployment increased 4.9 percentage points from 5.9 percent to 10.8 percent.

The Fed eased monetary policy and helped the economy recover in the second half of 1982. It de-emphasized money supply growth targets and focused instead on short-term interest rates. It allowed the federal funds rate to fall 5.2 percentage points between June and December 1982, from 14.15 percent to 8.95 percent. The stock market soared immediately on learning that the Fed was easing and the recession ended in November 1982.

While the U.S. disinflation was accompanied by a short, painful recession, disinflations in several other countries were accompanied by longer, but less painful recessions. The disinflation lasted three years in the United States but six years in Denmark and France, seven years in Ireland and Italy, and eight years in Spain. Unemployment benefits lasted for six months in the United States, but averaged three years in the other countries. Ball [1996] found that countries with longer disinflationary periods and greater durations for unemployment benefits experienced larger increases in the long-term (natural) rate of unemployment.

Ball interpreted this finding as consistent with the concept of hysteresis. Hysteresis implies that disinflationary monetary policy that raises the actual rate of unemployment can also raise the natural rate of unemployment. Ball reasoned that countries with longer recessions are more likely to have workers who are unemployed for long periods of time, and long-lived unemployment benefits allow them a longer duration of unemployment. During unemployment, workers may lose job skills, lose their desire to work, or become less effective in searching for jobs. In this way recessions can increase the number of long-term unemployed. The increase in the natural rate of unemployment in countries with longer disinflationary periods and greater durations for unemployment benefits suggests that monetary policy can have long-run effects on real variables.

As the U.S. economy began recovering in 1983, Friedman and other monetarists continually warned that inflation would re-emerge and that contractionary monetary policy was necessary [Friedman, 1988]. In the 26 September 1983 issue of *Newsweek*, Friedman said that inflation would take off in 1984 and that a recession would develop. Writing in the *American Economic Review*, Friedman [1984] predicted that inflation would be much higher between 1983 and 1985 than in was between 1981 and 1983. In an interview in the 19 March 1984, issue of *Fortune*, Friedman noted the strong possibility that the inflation rate could reach 9 percent.

It turned out that the economy's performance over the next several years was excellent. Inflation did not accelerate in 1984 and averaged only 3.5 percent per year between 1984 and 1988. Unemployment fell from 8 percent to 5.3 percent. The expansion that began in November 1982 lasted 92 months—in duration, a peacetime expansion second only to the current one.

In 1988 the Fed allowed the federal funds rate to increase 300 basis points to contain inflationary pressure. Annual inflation, which usually responds with a lag to

monetary policy, climbed to 6.2 percent in November 1990 and then quickly fell to 2.9 percent by December 1991. It hovered around 3 percent for a year and then fell again. If the inflation rate is measured excluding the volatile food and energy sectors, it fell from about 5.5 percent per year at the end of 1990 to 3.75 percent per year at the end of 1991 to 3.25 percent at the end of 1992.

When the disinflationary monetary policy of the 1970s and 1980s reduced inflation, the accompanying slowdown disproportionately burdened minorities and less-advantaged workers. While White unemployment increased 3.4 percentage points during the 1974 to 1975 disinflation, Hispanic unemployment increased 6.2 percentage points and Black unemployment increased 5.4 percentage points. While White unemployment reached a peak of 8.4 percent, Hispanic unemployment reached 14.3 percent and black unemployment 15.3 percent. Similarly during the 1979 to 1982 disinflation, while White unemployment increased 4.5 percentage points, Hispanic unemployment increased 8.1 percentage points and black unemployment 9.5 percentage points. White unemployment peaked at 9.7 percent, Hispanic unemployment at 15.7 percent, and black unemployment at 21.2 percent.<sup>4</sup> These shocks to the less advantaged came while they were already faring badly because of changes in the structure of the U.S. economy [Bradbury, 1996; Council of Economic Advisers, 1997].

From 1990 to 1992 the Fed shifted its focus to stimulating the economy. It lowered the federal funds rate target 23 times to fight the recession. Unemployment, which also responds with a lag to monetary policy, continued to rise until it reached 7.7 percent in July 1992 and then quickly fell to 6.5 percent by the end of 1993.

In February 1994, although the inflation rate was below 2.5 percent, the Fed began a preemptive strike against inflation. It raised its target for the federal funds rate 25 basis points. It raised the target again in March and April by 25 basis points and in May by 50 basis points. In all, it raised the federal funds rate target six times in 1994 and one time in February 1995. The strike was evidently effective, for inflation stayed below 3 percent except for a brief blip caused by higher food and energy prices.

In 1996 and 1997 the Fed faced a quandary. The unemployment rates of 5.4 percent in 1996 and 4.9 percent in 1997 were below most estimates of the natural rate of unemployment. Most economists thought unemployment this low would inevitably lead to inflation [Rivlin, 1999]. Phelps [1996], for instance, stated that the low unemployment rate would cause inflation to turn up later that year. However, inflation remained quiescent. The Fed had to decide whether to slow the economy or permit it to grow.

Wall Street was betting that the Fed would not continue to permit unemployment to fall. At least five times during 1996, news of a strong economy caused major stock price plunges. The fact that stock prices tended to fall more for stocks sensitive to contractionary monetary policy indicates that financial markets thought that the strong economy would trigger anti-inflationary monetary policy [Thorbecke and Coppock, 1997].

Instead, the Fed allowed unemployment to continue falling, and inflation fell also. Unemployment dropped below 5 percent in early 1997 and fell steadily to 4.1 percent by the end of 1999. Inflation was below 2 percent for 17 of the months between No-



vember 1997 and the end of 1999 and below 3 percent for the rest of the time. Both the unemployment and the inflation outcomes were the best in almost 30 years.

The strong labor market has brought many benefits to less-advantaged groups. The 1999 *Economic Report of the President* states:

Groups whose economic status has not improved in the past decades are now experiencing progress. The real wages of blacks and Hispanics have risen rapidly in the past 2 to 3 years, and their unemployment rates are at long-time lows; employment among male high school dropouts, single women with children, and immigrants, as well as among blacks and Hispanics, has increased, and the gap in earnings between immigrant and native workers is narrowing. [Council of Economic Advisers, 1999, 99]

High unemployment in Europe in recent years may have increased the natural rate of unemployment. It seems that a reverse situation has occurred in the United States, and a strong labor market is decreasing the natural rate. As Greenspan stated, the “expansion has enabled many in the working age population, a large number of whom would have remained out of the labor force or among the longer-term unemployed, to acquire work experience and improved skills” [1997a, 1].

If low unemployment has enabled workers to improve job skills, it also would have contributed to increased productivity and thus to holding down inflation. Prior to the last three years, conventional wisdom held that allowing unemployment to fall and employing marginal workers would reduce productivity and trigger inflation [Coy, 1997; Nasar and Mitchell, 1999]. However, according to Rivlin [1999], providing workers with training in the use of new equipment and techniques has combined with factors such as greater outsourcing to raise productivity. The productivity increase has allowed firms to pay higher wages without leading to inflationary pressure.

## **RELEVANCE OF RECENT MONETARY POLICY EXPERIENCE FOR INFLATION TARGETING**

Recent experience in the United States is relevant to evaluating arguments for switching to inflation targeting as the primary goal of monetary policy: monetary policy can affect only inflation and not real variables in the long run; monetary policy cannot be used to moderate short-run economic fluctuations because it has an inflationary bias; inflation targeting provides a nominal anchor for monetary policy; and moderate rates of inflation harm economic growth.

Recent events present reasons to question the idea that monetary policy cannot affect real variables in the long run. As discussed above, Ball [1996] found that, consistent with hysteresis, countries with longer disinflationary periods and greater durations for unemployment benefits experienced increases in the natural rate of unemployment. U.S. experience in the 1990s indicates that low unemployment may have enabled unemployed workers to find jobs and improve their skills, lowering the natural rate of unemployment. If the natural rate of unemployment (a long-run real variable) can be affected by policy, the case for inflation targeting is weakened.

Monetary policy history also casts doubt on the arguments that there is an inflationary bias to monetary policy and that an explicit nominal anchor is necessary. In 1979 the Fed engineered a painful disinflation, and it has since kept inflation low, sometimes through preemptive strikes. The Fed kept inflation low without adopting the binding rules or institutional changes that Kydland and Prescott [1977] and Barro and Gordon [1983] advocated [Blinder, 1998]. The Fed also kept inflation low without using an explicit nominal anchor such as a target for the exchange rate or inflation [Bernanke, Laubach, Mishkin, and Posen, 1999].

The evidence is inconclusive that moderate inflation (say, below 3 percent) could be so costly that the Fed must make controlling inflation its overriding goal. Simple theory implies that sustained inflation is almost costless [Friedman, 1998]. Perfectly anticipated inflation would cause labor contracts, interest rates, and other intertemporal transactions to have inflation adjustments written in. The costs associated with this type of inflation would involve businesses changing price tags, restaurants changing menus, and individuals making more trips to the bank to withdraw currency. Most economists view these costs as minuscule. Unanticipated inflation does have the costs discussed earlier, but it is not clear that those costs are large. In one study, Robert Barro [1995] found that increasing inflation by 1.0 percentage point reduces economic growth by between 0.02 and 0.03 percentage point.<sup>5</sup> Although Barro's estimate is lower than some others, it illustrates that the evidence on the costs of moderate inflation is mixed.

So, we see that recent experience challenges the arguments underlying inflation targeting. It indicates that in the long run monetary policy may affect real variables, not only inflation; there has not been an inflationary bias to monetary policy in the last 20 years; an explicit nominal anchor is not necessary, and moderate inflation may not impose large costs on society. Thus, there are several reasons to question whether the Fed's mandate should be changed to make low inflation the "primary and overriding goal" of monetary policy.

### **WHY THE FED'S MANDATE SHOULD CONTINUE TO EMPHASIZE UNEMPLOYMENT**

There are many reasons why the Fed's mandate should include full employment as well as low inflation. First, the macroeconomic conditions that have prevailed while the Fed has been pursuing both full employment and price stability have been wonderful. Second, the costs of high unemployment are substantial. Third, central bankers tend to focus on inflation and, if anything, need to be prodded to consider other conditions and to pursue other goals. Fourth, by assigning weight to real variables, the Fed would avoid some of the lost output and lost employment associated with supply shocks.

Macroeconomic conditions provide the first reason for maintaining a dual mandate. While some might argue that in recent years the Fed has focused solely on inflation, the evidence from Taylor's rule, statements of Fed governors, the behavior of the fed funds futures market, and recent monetary policy history indicate that high employment as well as price stability have been goals of the Fed. Greenspan recently stated, "By themselves, neither rising wages nor swelling employment rolls pose a

risk to sustained economic growth. Indeed, the Fed welcomes such developments and has attempted to gauge its policy in recent years to allow the economy to realize its full, enhanced potential” [1999, 5]. Economic performance has been wonderful while the Fed has been following its statutory mandate in this way. Both unemployment and inflation are near 30-year lows. By contrast, seven of the eleven countries under the jurisdiction of the European Central Bank, which has adopted inflation targeting, have unemployment rates in double digits (or close to double digits). With the U.S. economy faring so well under the current monetary policy regime, it seems unwise to switch to a regime that has not produced similar results in other countries.

The second reason is the large cost that unemployment imposes on individuals and the economy. Because the Fed lowers inflation primarily through lowering aggregate demand and employment, the more it seeks to stabilize inflation, the more it will destabilize employment in the short run [Fuhrer, 1997]. Dornbusch, Fischer, and Startz [1998] calculate that the fact that unemployment in 1992 was 2 percentage points above the natural rate implies that gross domestic product was 4 percent less than it otherwise would have been (in 2001, 4 percent of GDP would exceed \$400 billion). In addition to this loss to the economy, heavy losses are imposed on individuals. Thorbecke [1997; 2001] reports that the individuals who bear the brunt of disinflationary policy tend to be poorer and lower on the occupational ladder. They consequently are less able to weather the difficulties caused by losing a job. Not only do they suffer monetarily, but also in terms of dignity, self-esteem, and forgone training. One study, performed by Harvey Brenner of Johns Hopkins University [Abel and Bernanke, 1998, 461], found that an increase in unemployment of 1 percentage point that lasts for six years is correlated with 20,000 more deaths from heart disease, 4,000 new admissions to mental hospitals, 3,300 new prison inmates, 920 suicides, and 650 homicides.

A third reason the Fed should be mandated to focus on unemployment is that central bankers tend to focus on inflation and to be inflation averse. Monetary theory teaches that in the long run inflation is a monetary phenomenon. Monetary policymakers can take a long-run perspective because they are not vulnerable to short-term electoral cycles; they do so also because they are not able to smooth out transitory shocks anyway. Telling a central banker to focus on inflation is like telling a defensive lineman to focus on tackling the quarterback. He will do that without advice. What is necessary is to tell him to watch also for a screen pass or a draw play. In the same way, it is necessary to tell a central banker to consider also unemployment and real economic activity.

Some might argue that Alan Greenspan has been successful because he focuses on inflation and that this approach should be encoded in legislation. However, in the hands of someone without Greenspan’s deep grasp of the economy, the requirement that low inflation be the overriding goal of monetary policy could produce bad outcomes. For instance, in 1996, when most economists thought that unemployment was below the natural rate, a central banker mandated to achieve only price stability could easily have prevented unemployment from falling further. He or she could have argued that unemployment was at its maximum sustainable level, and most economists would have agreed. However, if the Fed chairman is also mandated to consider employment gains, he or she might be emboldened at strategic times to take risks and

let unemployment fall. The results after 1996 were that unemployment fell more than a percentage point and employment increased by more than 7 million workers. The benefits of this strong labor market have accrued to low-skilled workers, minorities, and single mothers without triggering inflation. It would have been tragic if these gains to less-advantaged individuals had been lost because the Fed kept unemployment higher to fight a nonexistent inflation.<sup>6</sup>

A fourth problem with mandating price stability is that it would aggravate the employment losses following a supply shock, such as an oil price increase. As Friedman and Kuttner [1996] explain, following a negative supply shock, the wage relative to the price level (in jargon, the real wage) would have to fall to avoid large increases in unemployment. Because in the United States it is hard to cut workers' absolute wages [Akerlof, Dickens, and Perry, 1996], an increase in the price level is necessary to cut real wages and minimize employment losses. If the Fed is pursuing price stability exclusively, the price level would no longer be free to increase. Thus, an adverse supply shock would multiply unemployment.

## CONCLUDING REMARKS

The Fed is currently mandated to pursue both price stability and full employment. Under this *modus operandi* for monetary policy, unemployment and inflation are both near 30-year lows. However, despite the exceptional macroeconomic performance, several economists recommend that the Fed target only low inflation. Recent monetary policy experience provides several reasons to question the validity of their arguments.

When Michael Jordan retired from basketball in 1998, he had set several records and led his team to six National Basketball Association championships. Whatever training regime he followed obviously worked. Similarly, the current monetary policy regime, which emphasizes both unemployment and inflation, is obviously working. The dual mandate has allowed the Fed to focus on one or the other goal as conditions demand and to balance the effects of policy decisions. Changing this approach, which has contributed to outstanding macroeconomic outcomes, seems unwise. Instead, officials in inflation-targeting countries should consider assigning greater weight to unemployment when formulating monetary policy.

## NOTES

I thank Lynndee Kemmet for valuable comments and the Jerome Levy Economics Institute for financial support.

1. This section draws on the discussion by Judd and Rudebusch [1999]. According to Blinder [1996], the Fed has a third legislated goal, "moderate long-term interest rates." However, since achieving price stability will almost surely produce low long-term rates, the Fed is viewed as having a dual mandate of pursuing full employment and stable prices.
2. The rule used in Figure 1 is:  $R = R^* + p + 0.5y + 0.5(p - p^*)$ ; where  $R$  is the nominal federal funds rate recommended by Taylor's rule,  $R^*$  is the equilibrium real federal funds rate,  $p$  is the inflation rate,  $y$  is the difference between potential output and actual output, and  $p^*$  is the desired inflation rate.

3. Sharp increases in the prime rate, the commercial paper rate, and mortgage rates disrupted the banking sector and contributed to output declines in 1974 of 27 percent in housing and 9 percent in the durable goods sector [Thorbecke, 2001].
4. Thorbecke [1997; 2001] presents additional evidence from vector autoregressions and a social accounting matrix indicating that low-income, urban workers suffered more from recent disinflations.
5. He performed the study for the Bank of England and caused it embarrassment when the press reported that he had found inflation to be costless [*The Economist*, 1995].
6. The same might be said of 1983. Milton Friedman forcefully warned about inflation and demanded that money growth be reined in. The Fed ignored his warning. Inflation remained moderate, unemployment fell rapidly, and the U.S. economy experienced a 92-month recovery.

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