

PRESIDENTIAL ADDRESS

THE FED AFTER GREENSPAN

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INTRODUCTION

We are soon coming to the end of an era in monetary policy making in the United States. Because extending his term beyond 2006 would require a change in the Federal Reserve Act, Alan Greenspan will be stepping down from the chairmanship of the Board of Governors of the Federal Reserve next year. Under his leadership, the Federal Reserve has achieved extraordinary economic performance: inflation has become low and stable and is now consistent with Greenspan's famous definition of price stability: when "households and businesses need not factor expectations of changes in the average level of price in their decisions" [Greenspan, 1994]. Conquering inflation was not done at the cost of higher output fluctuations. Output volatility has fallen and for the close to twenty years of Greenspan's tenure, the economy has experienced only two relatively mild recessions in 1990-91 and in 2001. It is no wonder that Alan Greenspan was given the title of "maestro" in Bob Woodward's [2000] well-known book.

Even though it is hard to imagine the Federal Reserve without Greenspan, we need to contemplate what the Federal Reserve will be like after Greenspan is gone. In this address, I will first describe the hallmarks of the Greenspan Fed and the advantages of this strategy that have produced such favorable economic outcomes. Then I will look at how well the Fed might do after Greenspan and what challenges it might face. This discussion will then lead naturally to suggestions for how the Fed should operate in the future to continue the excellent performance it has achieved under Alan Greenspan.

HALLMARKS OF THE GREENSPAN FED

There are three key elements of the monetary policy strategy of the Federal Reserve under Greenspan. First is the development of a strong nominal anchor, although this anchor is not announced explicitly, but rather is implicit. Second is monetary policy that is both forward looking and preemptive. Third is increasing transparency.

A Strong Implicit but not Explicit Nominal Anchor

One of the most important lessons learned both from the theoretical literature on monetary policy and from actual experience is that having a strong nominal anchor, a constraint on policy which ties down inflation expectations, is critical to the success of

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monetary policy. By tying down inflation expectations, a nominal anchor helps move the economy toward the efficient frontier of the trade-off between inflation and output gap variability, generating better performance on both the inflation and the output fronts.¹ Another way of thinking about this is that a strong nominal anchor helps the markets to do a lot of the work for the monetary authorities. Households and businesses will be less likely to push up wages and prices, which would produce an inflationary spiral, if they are convinced that there will be future monetary policy actions to contain inflation. Furthermore, their spending is less likely to get over-exuberant when the economy strengthens because they know the monetary authorities will take future actions to keep the economy from overheating.

The second major benefit of a strong nominal anchor is that it is able to limit the time-inconsistency problem first articulated by Kydland and Prescott [1977] and Calvo [1978], and then applied to the conduct of monetary policy in Barro and Gordon [1983]. The time-inconsistency problem arises because there are incentives for a policy maker, particularly because of pressure from politicians, to try to exploit the short-run trade-off between employment and inflation to pursue short-run employment objectives, even though the result is poor long-run outcomes. Expansionary monetary policy will produce higher growth and employment in the short run and so policy makers acting under discretion will be tempted to pursue this policy even though it will not produce higher growth and employment in the long run because economic agents adjust their wage and price expectations upward to reflect the expansionary policy. Unfortunately, however, expansionary monetary policy will lead to higher inflation in the long run, with its negative consequences for the economy.

A nominal anchor can help to prevent the time-inconsistency problem by providing a constraint on discretionary monetary policy, so that the monetary policy authorities avoid the time-inconsistency trap. The commitment to a nominal anchor will help prevent them from acceding to pressure to exploit the short-run trade-off between employment and inflation with expansionary monetary policy, so that inflation is less likely to spin out of control.

Over time the Greenspan Fed has demonstrated its strong commitment to price stability both through its actions and rhetoric. In his speeches, Greenspan continually emphasizes that the Fed is firmly committed to the price stability goal and is willing to take actions to achieve it. In addition, when the Fed has concerns about inflationary pressures building up in the economy, it has taken actions to raise interest rates, and similarly has lowered interest rates when it worries that deflationary forces may come to the fore. The result of these actions and words is that the markets perceive the nominal anchor to be a strong one. However, the nominal anchor is implicit, not explicit. The Federal Reserve has not come out and announced or articulated an explicit goal for inflation, and Greenspan has been opposed to doing so (see Meyer [2004a]). At the present time, the public (and maybe even members of the FOMC) are not sure what the Fed's numerical goal for inflation is: whether it is 0, 1, 2 percent or possibly higher.

Forward-Looking and Preemptive Monetary Policy

Monetary policy affects the economy with long lags: estimates for the United States suggest that monetary policy takes around a year to affect output substantially

and over two years to have a significant impact on inflation. The presence of long lags means that monetary policy cannot wait to respond to inflation and output movements only after they appear. If the central bank waited until overt signs of inflation appeared, it would already be too late to maintain stable prices, at least not without a severe tightening of policy: inflation expectations would already be embedded in the wage- and price-setting process, creating an inflationary momentum that would be hard to halt. Similarly, if the monetary authorities wait until deflation sets in before lowering interest rates, they are likely to get into a deflationary trap as occurred in Japan (for example, see Ito and Mishkin [2004]). Because nominal interest rates cannot go below zero (the zero lower bound problem), if expectations of deflation become prevalent, real rates will necessarily be high and conventional monetary policy measures to lower interest rates to stimulate the economy are no longer effective.

To prevent inflation or deflation from getting started, monetary policy thus needs to be forward looking and preemptive: that is, depending on the lags from monetary policy to inflation, monetary policy needs to act long before inflationary or deflationary pressures appear in the economy. Under Alan Greenspan, the Federal Reserve has done exactly that. The Fed raised interest rates from 3 to 6 percent from February 1994 to February 1995 when the economy began strongly to recover from the 1990-91 recession even though the economy still had some slack and inflation was not rising. As a result, inflation not only did not rise, but fell slightly. In January 2001, the Fed reversed course extremely rapidly, cutting the federal funds rate by 100 basis points (1 percentage point) in January, from 6.5 to 5.5 percent even before the business cycle peak in March, and then proceeded to cut the fed funds rate by another 350 basis points before the end of November when the NBER declared that a recession had indeed occurred. The recession then turned out to be very mild, especially given the adverse shocks of the September 11 terrorist attacks and the negative impacts of the Enron and other corporate scandals on the credit markets. Recently, the Fed started another tightening cycle in June 2004, and by February 2005 has raised the federal funds rate from 1 to 2.5 percent in the face of continuing weak job growth.

Increasing Transparency

Before Greenspan, the Federal Reserve was generally a secretive institution. Not only did it not clarify what its objectives and strategies were, but it kept the markets guessing about what were the actual setting of policy instruments. The Fed was perfectly happy to cultivate a mystique as a wise but mysterious institution, leading to popular books about the Fed with titles like *The Secrets of the Temple* [Greider, 1987]. Under Greenspan, this began to change dramatically. In February 1994, the Fed began to announce the target for the federal funds rate decided at the FOMC meeting. In 1999, it began to announce the FOMC's decision about the "bias" toward which direction monetary policy was likely to go, later expressed as the balance of risks in the economy. In 2002, the Fed started immediately to report the roll call vote on the federal funds rate target taken at the FOMC meeting. Starting in August 2003, the Fed began to announce what the likely future path for the federal funds rate would be. In August 2003, the FOMC announced that it would maintain policy accommodation of its very low federal funds rate target of 1 percent for a "considerable period." In January

2004, the FOMC modified its language to say that it would be “patient” in removing policy accommodation and then in May 2004 to say that policy accommodation can be removed at a pace that is likely to be “measured,” leading to a continuing increase of the federal funds rate of 0.25 percent (25 basis points) at every subsequent FOMC meeting. Most recently, in December 2004, it moved up the release date of the minutes of FOMC meetings to three weeks after the meeting from a previous six weeks. Thus the Fed has increased its transparency in recent years. Yet even today, the Fed is not fully transparent: it does not publish its forecasts of the economy, nor its target for the inflation rate, as many other central banks do.

ADVANTAGES OF THE GREENSPAN STRATEGY

The Greenspan approach to monetary policy has several advantages that help explain its success.

Increasing Fed Credibility

Through its actions and words, the Fed has been able to increase the credibility over time of its commitment to price stability. This has led stable inflation expectations in the current economic environment and is one reason why the inflation rate has become so stable. This success was, however, not immediate, as is illustrated by events in the bond market. In the past, when the Fed raised interest rates, markets interpreted this as an indication that the Fed was more concerned about the potential for a surge in inflation in the future and it was far from clear that the Fed would be successful in containing inflation. As a result, the inflation premium in long-term interest rates would rise, thereby driving up long rates at the same time the fed funds rate was increased.

This is exactly what happened from February until November 1994 when, after each 25-basis point increase in the federal funds rate, the interest rates on long-term Treasury bonds would rise a similar amount. As I can attest, because I saw this from the inside when I was the director of research at the Federal Reserve Bank of New York, the members of the FOMC were not happy about these developments. They rightfully interpreted these events as indicating a lack of credibility of the nominal anchor, and decided to do something about it. Beginning with the May 17, 1994, meeting, when they changed the target, they began to raise the federal funds rate target by 50 basis points in order to show that they were serious about keeping inflation under control. Indeed, in the November 15th meeting, they raised the fed funds target by 75 basis points. It was only after this meeting that long-term rates started to come down, indicating that the markets got the message and now were convinced that the Fed meant business.

Contrast this behavior in the bond market with what we have seen currently. From June 2004 until January 2005, the Fed has raised the federal funds rate target at every meeting by 25 basis points, with the fed funds rate rising from 1 percent to 2.5 percent. Instead of rising as occurred in 1994 when the Fed started its tightening cycle, this time long-bond rates actually fell: the ten-year rate fell from 4.6 percent at the beginning of July 2004 to 4.2 percent in January 2005. This is really quite remarkable

because it shows how strong the Fed's nominal anchor has become. Raising rates is not seen by the markets as indicating that inflation will be a problem in the future. Instead, inflation expectations are solidly anchored so that the inflation premium in long bonds did not increase, but if anything decreased.

Flexibility

The second key advantage of the Greenspan Fed's approach is that it is highly flexible. Advocates of monetary policy rules, in which monetary policy is set automatically with no judgments by the monetary authorities, emphasize the discipline or credibility they create. By adhering rigorously to a certain rule, say a Taylor rule or the constant-money-growth rule advocated by Milton Friedman, the monetary authority reassures the public that it will not engage in time-consistent, inflationary policies, with the result that inflationary expectations remain tied down, providing the economy with a strong nominal anchor. Critics of rules, however, have argued that any discipline created by rules comes at a high cost, since a rule rigorously followed deprives the central bank of its ability to deal with unusual or unforeseen circumstances, or with fundamental changes in the economy.

The Fed approach has avoided the straitjacket of rules by first using all available information to set policy, something that most rules do not do. Greenspan is famous for sitting in a hot tub every morning, where he contemplates the data in order to decide where he thinks the economy will be heading. He has been able to use his judgment to set monetary policy in a way that was far more effective than if a rule like the Taylor rule had been followed. In the mid- to late 1990s, standard economic models based on the Phillips curve were suggesting that inflation would be rising because the unemployment rate had fallen below NAIRU (the Non-Accelerating Inflation Rate of Unemployment). However, despite these models' predictions (and a forecast for rising inflation from the Board of Governors staff), Greenspan's judgment was that the models were incorrect, and he persuaded the other members of the FOMC to hold off further tightening of monetary policy.² Greenspan was, of course, right, and it was one reason why the Fed was able to engineer the longest expansion in U.S. history from 1991 to 2001.

The flexibility of the Greenspan approach, which he described in a speech in August 2003 at the Federal Reserve Bank of Kansas City's Jackson Hole Conference [Greenspan, 2003] as a "risk-management approach" to the conduct of monetary policy, also allows the Fed to deal with concerns about financial instability. In the aftermath of the Russian debt default and then the Long-Term Capital Management fiasco in the fall of 1998, the Fed eased monetary policy by cutting the federal funds rate by 75 basis points despite its "perception that the economy was expanding at a satisfactory pace and that, even without a policy initiative, was likely to continue to do so" [Greenspan, 2003]. This easing was undertaken to make sure that the stress the financial system was under at the time would not escalate into a severe disruption of domestic and international financial markets. The quick action by the Fed did help reassure markets, and I agree with Greenspan's assessment: "The product of a low-probability event and a severe outcome, should it occur, was judged a larger threat than the possible adverse consequences of insurance that might prove necessary" [Greenspan, 2003].³

WILL THE FED WORK AS WELL AFTER GREENSPAN IS GONE?

The flexible strategy of the Greenspan Fed using his “risk management approach” has indeed worked very well, so why shouldn’t the Fed just stick with the same approach? After all, “If it ain’t broke, don’t fix it.” However, will this approach work as well when Greenspan is gone? There are four problems with the approach that make it far less likely that it will produce desirable outcomes when a new chairperson of the Fed takes the helm.

Problem 1: The Nominal Anchor is Based on An Individual

The most serious problem with the Fed’s current approach is that it does not have an explicit nominal anchor and this makes its success highly dependent on the person who inhabits the chairmanship. As we have seen, key elements to the Fed’s success have been Chairman Greenspan’s continual emphasis on the Fed’s commitment to price stability and the FOMC’s pursuit of forward-looking, preemptive policies to keep inflation under control. The Fed’s prestige and the credibility of the nominal anchor have risen accordingly, but, as I have pointed out elsewhere [Mishkin, 2000], the strong nominal anchor in the United States *is* Alan Greenspan. Unfortunately, a nominal anchor based on an individual cannot last forever. When Greenspan’s tenure at the Fed ends, there are likely to be doubts that the new chairperson will be committed to or as competent at pursuing the same approach. After all, we have had past chairmen who ended up pursuing overly expansionary policy that led to inflation spinning out of control. Both Arthur Burns and G. William Miller immediately come to mind. Even a new chairperson who understands the importance of establishing a strong nominal anchor and the use of forward-looking policy may find his or her credibility being challenged. Most people don’t remember because it was so long ago, but when Greenspan first took over as chairman, there was an “inflation scare” of the type described by Goodfriend [1993]—a spontaneous increase in inflation fears that is reflected in a sharp rise in long-term interest rates. The market had doubts that Greenspan, who had strong ties with the Republican leadership, would be able to resist political pressures and be as serious about controlling inflation as his predecessor, Paul Volcker (see Goodfriend [2005]).

Over time, Greenspan has not only established credibility for his commitment to keeping inflation from rising too fast, but also to taking the measures necessary to prevent deflation from occurring. Because the new chairperson will have less credibility for reserving price stability, there is a greater possibility that negative shocks to the economy could produce expectations of deflation, which then could trigger a deflationary spiral. Indeed, this is exactly what we have seen happen in Japan when the Bank of Japan was headed by Masuro Hayami: it encountered “deflation scares,” in which spontaneous fears of deflation triggered sharp declines in long-term interest rates [Kuttner and Posen, 2004].

Greenspan’s political skills have also helped produce an unusually good working relationship between the Fed and the executive branch, which started with the Clinton administration. If the new chairperson does not have Greenspan’s political skills, the Fed might face strong pressure to engage in over-expansionary policies, thereby weakening the nominal anchor.

Problem 2: Focus on the Long-Run May Weaken

The public debate on monetary policy in the United States still has a tendency to focus on short-run considerations, as reflected in politicians' focus on "jobs, jobs, jobs" when discussing monetary policy during political campaigns. Greenspan's public statements also emphasize that the Fed has a responsibility to stabilize the business cycle, which is consistent with the dual mandate for the Fed, which is embodied in legislation and commits the Fed to pursue both high employment and price stability goals. Greenspan, however, has been successful in getting the public and the politicians to understand that stabilization of the business cycle should not interfere with the price stability objective in the long run and that successful stabilization requires a forward-looking policy with a longer-run focus. Greenspan's success in moving the public and the politicians' focus to the long run, however, does depend on their high regard for him. Given politicians' incentives to focus on the short run and the high employment goal in the dual mandate and the fact that a new chairperson will certainly have less stature than Greenspan, at least at first, increased pressure on the Fed to focus on the short-run issue of jobs, jobs, jobs is highly likely. This outcome could make it harder for the Fed to be preemptive and forward looking, which has been so critical to its success. In addition, an increased shorter-run focus is likely to produce increased pressure for overly expansionary policy that would increase the likelihood that the time-inconsistency problem of Kydland and Prescott [1977] and Calvo [1978] would become more serious in the future. In the past, after a successful period of low inflation, the Federal Reserve has reverted to inflationary monetary policy—late 1960s and 1970s are one example—and without an explicit nominal anchor that preserves a long-run focus, this could certainly happen again in the future.

Problem 3: Lack of Transparency of Goals Increases Uncertainty

The Greenspan Fed has made tremendous progress on the transparency front, but in one regard it is opaque: its nominal anchor is not explicit because it has not announced a numerical goal for inflation. Because the Fed has not been more explicit about its nominal anchor, there is a constant guessing game about the Fed's goals, which creates unnecessary volatility in financial markets and arouses uncertainty among producers and the general public. This was illustrated by the recent sharp swings in long-term interest rates during the late spring and summer of 2003. Because the market was confused about the Fed's mixed signals on the risk of deflation and what the Fed might do, the ten-year bond rate first dropped from a level near 4 percent at the beginning of May to 3.2 percent in the middle of June and then rose over 100 basis points to 4.5 percent by the end of July. If the markets had a clearer picture of the Fed's longer-run objectives, particularly on inflation, then they would focus less on what the Fed's next policy move would be, making it less likely that Fed statements or policy moves would lead to whipsawing of the market. This problem would likely get worse when a new chairperson comes on board because markets could not be sure that the new chairperson might have very different objectives than Greenspan.

Problem 4: Lack of Accountability could Weaken the Fed's Independence

Unlike most government agencies, the Fed controls its own purse strings and has the right to conduct policy independently of the government. This independence enables the Fed to resist political pressures to pursue overly expansionary policy in order to create jobs in the short run, thus helping the Fed to avoid falling into the time-inconsistency trap. The fact that monetary policy needs to be forward looking in order to take account of the long lags in the effect of monetary policy on inflation provides another rationale for Fed independence. Independence insulates the Fed from the myopia that is frequently a feature of the political process arising from politicians' concerns about getting elected in the near future. Independence therefore helps the Fed to focus more on the long run and therefore be forward looking and adequately allow for the long lags from monetary policy actions to inflation in setting its policy instruments. Indeed, recent evidence seems to support the conjecture that macroeconomic performance is improved when central banks are more independent. When central banks in industrialized countries are ranked from least legally independent to most legally independent, the inflation performance is found to be the best for countries with the most independent central banks.⁴

Lack of transparency of the Fed's goals leads to a lack of accountability that can weaken support for the Fed's independence, which we have argued above is highly beneficial. A basic principle of democracy is that the public should have the right to control the actions of the government. Yet the practical economic arguments for central bank independence coexist uneasily with the presumption that government policies should be made democratically, rather than by an elite group. Central bank independence, however, is likely to garnish more support if the politicians and the public can evaluate the central bank's performance and thus have the capability to make incompetent policy makers' lives miserable. However, the Fed's lack of explicit goals makes it harder for the Congress and the general public to hold an independent Fed accountable because there are no predetermined criteria for judging its performance.

With the high regard that the public and politicians have for Greenspan, this lack of accountability has not been a serious problem for the Fed. Support for the Fed's independence is strong because of the trust we have in Greenspan. No matter how competent the next chairperson is, it will take time before he or she engenders a similar trust. Then the Fed's lack of accountability could come back to haunt it.

It was not that long ago that there were pretty strong attacks on the Fed's independence. For example, in 1996 Senators Dorgan and Reid, who were unhappy with the Fed's past tightening of interest rates, which they felt were too high, called for the Congress to take over budgetary authority over the nonmonetary activities of the Federal Reserve to curb its independence. Before them, Henry Gonzalez, the chairman of the House Banking Committee, was a regular critic of the Fed and wanted Congress to assert more control over its actions. Although attacks on the Fed have quieted down in recent years, they certainly could arise again if the new chairperson does not garner the same respect as Greenspan.

WHERE SHOULD THE FEDERAL RESERVE HEAD AFTER GREENSPAN?

I have argued that although the successful strategy of the Greenspan Fed is far from broken, it is less likely to be as successful in the future. All would probably be well if we could clone Alan Greenspan, but of course this is in the realm of science fiction. In addition, because the chairmanship of the Fed is a political appointment and is up to the President, we cannot even contemplate succession planning and specify who would be the perfect person to succeed Greenspan. An alternative approach is to specify institutional changes that would make the Fed more likely to be able to continue the successes it has had under Greenspan, no matter who the next chairperson is. The following recommendations follow from the analysis above.

The Fed Should Move toward a Flexible Inflation-Targeting Regime by Announcing an Explicit, Numerical, Long-Run Target for Inflation

A flexible form of inflation targeting has many of the desirable features of the current Fed approach. It is forward looking, uses all information in deciding on the setting of policy instruments and does focus on achieving long-run price stability. However, it goes beyond the current Fed approach, enabling it to provide solutions to the four problems outlined in the previous section.

Announcement of an explicit, long-run, numerical inflation goal for monetary policy would institutionalize the Fed's commitment to price stability and make it less dependent on whom the next chairperson of the Fed would be, thereby enhancing the credibility of the nominal anchor. Announcement of an explicit, numerical target also makes it clear that the Fed will have a long-run focus, making it clear that it will continue to be forward looking and will take the necessary steps to keep inflation under control.

Indeed, announcement of an explicit inflation target is likely to shift the public debate to focus more on the long-run rather than on the short-run issue of "jobs, jobs, jobs" as in the U.S. This is exactly what has occurred in countries that have adopted inflation targeting, with an extraordinary example having occurred in Canada in 1996 (see Mishkin and Posen [1997] and Bernanke et al. [1999]). At that time, which was five years after Canada had adopted inflation targeting, the president of the Canadian Economic Association made a speech criticizing the Bank of Canada for pursuing monetary policy that he claimed was too contractionary. His speech sparked off a widespread public debate. Instead of degenerating into calls for the immediate expansion of monetary policy with little reference to the long-run consequences of such a policy change, the debate was channeled into a substantive discussion over what should be the appropriate target for inflation, with both the Bank and its critics obliged to make explicit their assumptions and estimates of the costs and benefits of different levels of inflation. Indeed, the debate and the Bank of Canada's record and responsiveness led to increased support for the Bank of Canada, with the result that criticism of the Bank and its conduct of monetary policy was not a major issue in the 1997 elections as it had been before the 1993 elections.

By changing the public debate on what a central bank can do in the long-run—that is, control inflation—rather than on what it cannot do, which is permanently increase economic growth and the number of jobs through expansionary monetary policy, political

pressure on the Fed to pursue short-run objectives would decrease, making it less likely that the Fed would be pressured into the time-inconsistency trap of trying to expand output and employment in the short run by pursuing overly expansionary monetary policy, with the outcome being too much inflation.

Because an inflation target is readily understood by the public and is thus highly transparent, framing the discussion of monetary policy around an inflation goal would make it easier for the Fed to communicate with the public and the markets, thereby decreasing uncertainty about future monetary policy moves. The resulting decrease in uncertainty would help decrease market volatility, helping to prevent the whipsawing in the bond market of the type that occurred in the late spring and summer of 2003.

Because an explicit numerical inflation target increases the accountability of the central bank, inflation targeting is also more consistent with democratic principles. The public and politicians can now more easily monitor whether the Fed is achieving its goals. Sustained success in the conduct of monetary policy as measured against a pre-announced and well-defined inflation target can be instrumental in building public support for a central bank's independence and for its policies. The granting of operational independence to the Bank of England in 1997 illustrates this point.⁵ On May 6, 1997, the new Chancellor of the Exchequer, Gordon Brown, announced that the Bank of England would henceforth have the responsibility for setting interest rates, which previously was done by the Chancellor of the Exchequer. In the press conference, Gordon Brown explained that the inflation-targeting regime justified the government's decision: the Bank had demonstrated successful performance over time, as measured against an announced clear target, and was now more accountable, making it more responsive to political oversight.

The Fed Should Make Clear that Announcement of a Long-Run Inflation Target is Consistent with its Dual Mandate

The Fed currently operates under a dual mandate in which it directed to pursue both high employment and price stability goals. For the foreseeable future it is very unlikely that the Congress would change this mandate, and any move toward an inflation-targeting regime in the United States would have to be consistent with this mandate. Indeed, the literature on optimal monetary policy supports a dual mandate because it typically specifies an objective function for monetary policy which puts a negative weight on both output as well as inflation fluctuations (for example, see the papers in Taylor [1999]). As has been argued by Ben Bernanke [2004], who at the time was a member of the Board of Governors of the Federal Reserve, and Larry Meyer [2004b], then a past governor, announcement of a long-run target for inflation is fully consistent with the dual mandate. Both Bernanke and Meyer advocate announcement of a long-run target, which Bernanke has referred to as the optimal long-run inflation target (OLIR), which should be achieved on average over the business cycle. Both point out that this would leave the Fed sufficient flexibility to deal with business cycle fluctuations and financial instability.

The Fed would need to make clear that announcing a long-run inflation target can actually make it easier for it to pursue a dual mandate and minimize output fluctuations as well as keep inflation under control. First, as both Ben Bernanke and I have emphasized in our previous writings [Bernanke et al., 1999; Bernanke, 2004; Ito and

Mishkin, 2004], the Fed should indicate that its concerns about output fluctuations require it to set its long-run inflation target above zero (even after correcting for any measurement bias) because doing so provides insurance against deflation, which can be costly either because deflation leads to financial instability [Mishkin, 1991; 1997] or because it makes it more likely that the zero lower bound on nominal interest rates may occur, which makes expansionary monetary policy less effective.

The Fed can further explain that it cares about reducing output fluctuations by emphasizing that monetary policy needs to be just as vigilant in preventing inflation from falling too low as it is from preventing it from being too high. It can do this by explaining that an explicit inflation target helps the monetary authorities stabilize the economy because it can be more aggressive in easing monetary policy in the face of negative demand shocks to the economy without being concerned that this will cause a blowout in inflation expectations. However, in order to keep the communication strategy clear, the explanation of a monetary policy easing in the face of negative demand shocks needs to indicate that it is completely consistent with the preservation of price stability.

A classic example of the benefits of an inflation target in preventing a decline in output occurred in Australia in July 1997 when the Reserve Bank of Australia lowered interest rates immediately after the currency crisis in Thailand which brought on the East Asian crisis. Despite the prospects of a substantial depreciation of the Australian dollar, the Reserve Bank believed that the presence of its inflation target meant that inflation expectations would not rise above the targets with a monetary policy easing, and it could ease to counter the negative demand shock arising from the deterioration in the terms of trade resulting from the East Asian crisis.

The Fed should also emphasize that an inflation target makes it more likely that central banks will be aggressive in combating negative shocks, so that deflationary spirals are less likely. If the Bank of Japan had an inflation target with the appropriate emphasis on the floor of the target range, then it is very likely that it would have avoided the disastrous policies pursued under the leadership of Masuro Hayami and would have been far more expansionary [Ito and Mishkin, 2004]. Also, it would have been far more likely to avoid the time-inconsistency problem outlined by Eggertsson [2003], in which the Bank of Japan was unable to commit to a long-run policy of expansion, thereby making temporary expansionary policy ineffective.

In addition, central banks can also clarify that they care about reducing output fluctuations by indicating that when the economy is very far below any reasonable measure of potential output, they will take expansionary actions to stimulate economic recovery. In this case, measurement error of potential output is likely to be swamped by the size of the output gap, so it is far clearer that expansionary policy is appropriate and that inflation is unlikely to rise from such actions. In this situation, the case for taking actions to close the output gap is much stronger and does not threaten the credibility of the central bank in its pursuit of price stability.

The Fed Should Eventually Move Toward a Full-Fledged, Inflation-Targeting Regime, but One that is Highly Flexible

I see the announcement of a long-run inflation target as being the first step to moving toward a full-fledged, flexible inflation-targeting regime which would include

announcing an inflation target over the intermediate term, with more information provided about the desired path of inflation that the Fed would like to achieve on its way to the long-run target. The Fed should emphasize that going farther in the direction of full-fledged inflation targeting would continue to be consistent with the dual mandate because it would be highly flexible and therefore would be best described as "constrained discretion" [Bernanke and Mishkin, 1997]. Indeed, constrained discretion is what inflation-targeting central banks have actually done, and they have found, if anything, that output fluctuations have decreased rather than increased (see Bernanke et al. [1999]).

One important mistake that the Fed should avoid is adopting a fixed horizon for its inflation target of, say, two years, with the Bank of England being a prominent example.⁶ Critics of inflation targeting, most notably Don Kohn [2004], who is member of the Board of Governors of the Federal Reserve, rightfully worry that a fixed horizon for the inflation target may be too rigid and result in suboptimal monetary policy. Models such as Svensson [1997] and Woodford [2004] tell us that optimal monetary policy will surely adjust the target horizon and path for inflation depending on the nature and persistence of shocks. The use of a specific horizon like two years, which is consistent with estimates of policy lags from monetary policy actions to inflation, has not been a problem for inflation targeting in advanced economies like the United Kingdom only because inflation has not been subject to big shocks so that it has remained close to the target level. However, as Svensson [1997] demonstrates, if the inflation rate is shocked away from its long-run target, then the target horizon should be longer than the policy horizon of, say, two years.

How this could be done has been illustrated by recent actions taken by the Brazilian central bank [Fraga, Goldfajn, and Minella, 2003]. Brazil experienced a major exchange rate shock in 2002 because of concerns that the likely winner in the presidential election would pursue populist policies that would lead to currency depreciation. The resulting depreciation then led to a substantial overshoot of the Brazilian inflation target. In January 2003, the Banco Central do Brasil announced a procedure for how it would modify its inflation targets. First, the central bank estimated the regulated-price shock to be 1.7 percent. Then, taking into account the nature and persistence of the shocks, it estimated the inertia from past shocks to be 4.2 percent, of which 2/3 was to be accepted, resulting in a further adjustment of 2.8 percent. Then the central bank added these two numbers to the previously announced target of 4 percent to get an adjusted target for 2003 of 8.5 percent (= 4 percent + 1.7 percent + 2.8 percent). The central bank then announced the adjusted target in an open letter sent to the Minister of Finance in January 2003, which explained that getting to the non-adjusted target of 4 percent too quickly would entail far too high a loss of output. Specifically, the announcement indicated that an attempt to achieve an inflation rate of 6.5 percent in 2003 would be expected to entail a decline of 1.6 percent of GDP, while trying to achieve the previous target of 4 percent would be expected to lead to an even larger decline of GDP of 7.3 percent.

By announcing that they would do what the Brazilians have done if a situation arose in which inflation were shocked substantially away from the long-run goal, the Fed could make it clear that the horizon for inflation targets needs to be flexible and will vary depending on the nature and persistence of shocks. In addition, by discussing

how they would modify the inflation path to get to the long-run goal more slowly in order not to have too great a loss of output, the Fed could not only emphasize its flexibility but also that it has an appropriate concern about output fluctuations, as the dual mandate requires. Nonetheless, it will still be able to assure the public that it continues to worry about the long-run and the importance of achieving price stability.

The Fed should be Wary of Pushing Transparency Too Far

I have been arguing for a further increase in Federal Reserve transparency by having it adopt an explicit, numerical inflation target. Indeed, we have seen that the Fed under Greenspan has greatly increased its transparency. However, there is one element of Fed transparency that I believe has gone too far.

The recent Federal Reserve experience with the language of its post-FOMC statement illustrates the problem of the public not understanding that projected policy paths are conditional on the evolution of the data. In order to underscore its commitment to preventing a deflationary spiral from getting underway in the United States, the FOMC announced in August 2003 that it would maintain policy accommodation, that is, a 1 percent federal funds rate target, for a “considerable period.” As Eggertsson and Woodford [2003] have shown, a commitment to keeping the policy rate unusually low beyond the time when the economy begins to recover is an important policy tool to deal with deflationary shocks. Since then, the Fed has continued to specify its intentions for its policy rate, with the FOMC modifying its language in January 2004 to say that it would be “patient” in removing policy accommodation and then in May 2004 to say that policy accommodation would be removed at a pace that is likely to be “measured.”

Although there are those like Lars Svensson [2002] who strongly advocate that central banks should announce projections of the future path of the policy rate as the Fed has been doing recently, announcing its intentions about the setting of future policy rates has the potential to complicate the Fed’s communication with the public. Although economists understand that any policy path projected by the Fed is inherently conditional because changes in the state of the economy will necessarily require a change in the policy path, the public is far less likely to understand this. When new information comes in and the Fed central bank changes the policy rate from its projected path, the public may see this as a reneging on its announced policy or an indication that the central bank’s previous policy settings were a mistake. Thus, even when the central bank is conducting its policy in an optimal manner, deviations from its projected policy path may be viewed as a central bank failure and could hurt the central bank’s credibility.

In addition, the deviations of the policy rate from its projected path might be seen as flip-flops on the part of the central bank. As we often see in political campaigns—and this was particularly true of the recent presidential campaign—when a candidate changes his position even if it reflects changes in circumstances and thus reflects sound judgment, the candidate is vulnerable to attacks by his or her opponents that he or she does not have leadership qualities. Wouldn’t the Fed be subject to the same criticism when changing circumstances would force it to change the policy rate from its previously projected path? The result might be a weakening of support for the Fed’s independence.⁷

So far I think that the Fed has gotten pretty lucky with its language outlining the future path of monetary policy. Once the deflation threat was over, it was no longer necessary for the Fed to continue its commitment to monetary policy accommodation. In the first half of 2004, inflation heated up and many commentators were concerned that the Fed was getting behind the curve and would have to raise the federal funds rate at a much faster rate than its announced path. Indeed, long-term bond rates climbed close to 100 basis points, a mini inflation scare, indicating that fears about future higher inflation were beginning to take hold. It looked like the Fed might have to raise rates at a much more rapid pace than they had announced in order to keep inflation under control. If this had happened, I suspect that Fed would have come under substantial attack, especially given that the presidential campaign was ongoing, with nasty accusations of flip-flopping. As it turned out, inflation remained benign, and the Fed's sticking to its announced path has not led to inflation expectations getting out of control, with the result that long bond rates have come back down again. My mother always told me it's better to be lucky than good. But I think it is a mistake for the Fed always to count on being lucky.

The Fed's experiment with announcing the path of the future monetary policy worked out reasonably well, but except under very unusual circumstances when there is a serious threat of deflation, it has the potential to turn out badly.⁸ If the Fed had to deviate from its announced policy path, it would have led to a loss of credibility and a weakening of the support for its policies and independence. Although I have advocated more transparency for the Fed in terms of announcing an inflation target, I believe that transparency can go too far if it means announcing a projection for the future policy path.

CONCLUDING REMARKS

The key challenge facing the Fed after Greenspan leaves is how to lock in the Greenspan legacy of low and stable inflation. I have argued that depending on the next chairperson to be as trusted and competent as Alan Greenspan would be a mistake. Instead of putting our trust in individuals, I believe that we need to design institutions so that we do not need "maestros" to get good policy outcomes. I have argued that instituting the type of inflation-targeting regime described above can provide the Fed with an institutional framework that will help it continue its recent stellar performance even when Greenspan goes on to his well-earned retirement.

NOTES

Presidential address at the Eastern Economic Association Meetings, New York, March 4, 2005. Any views expressed in this paper are those of the author only and not those of Columbia University or the National Bureau of Economic Research.

1. The so-called Taylor curve first outlined in Taylor [1979].
2. Estrella and Mishkin [1999] argue that because so many other factors drive the inflation process, using the standard NAIRU concept to determine the setting of monetary policy instruments can lead to costly mistakes.
3. However, I do think that it was a mistake for the Fed not to take away this insurance by raising the fed funds rate by 75 basis points to get it back up to its previous level once the financial markets had stabilized several months later.

4. For example, see Alesina and Summers [1993], Cukierman [1992], and Fischer [1994]. However, there is some question as to whether causality runs from central bank independence to low inflation or, rather, whether a third factor is involved, such as the general public's preferences for low inflation that create both central bank independence and low inflation [Posen, 1995].
5. Again, see Mishkin and Posen [1997] and Bernanke et al. [1999] for a discussion of this episode.
6. Officials at the Bank of England, however, are well aware that the fixed horizon would have to be modified if shocks to inflation send it outside the plus or minus one percent band around the target. If this happened, the Bank has to provide an explanation to the government of not only why it missed the target, but also the desired path for inflation that would bring it back down to the target. In this situation, it is highly likely that the Bank would advocate a horizon of more than two years for inflation to return to the target. As I see it, the problem with the Bank of England approach is not that it would not have a flexible horizon when it was needed, but that the two-year horizon has become embedded in the minds of the public because the Bank has not made it clear enough that the horizon would be flexible when necessary.
7. Another problem with a central bank announcing its policy projection, raised by Goodhart [2001] and Mishkin [2004] is that it could complicate the decision making process of the committee that makes monetary policy decisions.
8. As is indicated in Ito and Mishkin [2004], I do believe that deflationary environments, like the one we see in Japan, are sufficiently damaging that a commitment to a policy path, specifically a zero interest rate policy (ZIRP), for an extended period is needed to reflate the economy. However, the cost of a commitment to a projected policy rate path is trickier when the deflation risks are not as serious.

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