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**Reflections on Monetary Policy: Flexibility, Transparency, and Inflation Guidelines**

As everyone in this room knows, Chairman Alan Greenspan’s term as Governor and Fed Chairman will end on January 31, 2006. In addition to his contributions to the achievement of low and stable inflation, Alan Greenspan’s legacy includes several important additions to the economist’s lexicon. Some gems that come to mind are “irrational exuberance,” “cumulative unwinding of economic activity,” and most recently, “conundrum.” Now, a word like conundrum has the advantage of already being so hard to pronounce that you don’t even have to mumble it intentionally—it just comes naturally.

The Chairman used *conundrum* to describe the recent decline in the 10-year Treasury yield at the same time that the FOMC has been increasing the federal funds rate. And he related this to the general low level of long-term interest rates throughout the world. A number of factors have contributed to these low interest rates. One is monetary policy. Think about the decomposition of a nominal yield into its three components: a real risk-free interest rate, inflationary expectations, and risk premia. During the Greenspan era, inflation has been reduced well below the 4 percent rate that he inherited, and the level of inflationary expectations built into long-term rates is much lower today than during the late 1980s. With regard to risk premia, they depend on how markets believe the real economy will evolve as well as their views regarding the ability of monetary policy to provide low and stable inflation. Over the past 20 years the variability of inflation and overall inflation risk also has been reduced, and as a result, the risk premia built into long-term rates are lower. This is an important accomplishment.

There are many other developments that are worth reflecting on when we think about how far monetary policy has come in the past twenty years. So today I’d like to begin by discussing two subjects that I’ve learned a lot about during my years on the FOMC. The first regards insights into the tactics of monetary policy that we gained as we moved from an environment of moderate inflation to one of price stability—in particular, the benefits of flexibility. The second is the importance of communications and transparency in the imple-

mentation of monetary policy—notably, its role in reducing private risk premia associated with uncertainty over the future course of policy.

Some have argued that the best way for central banks to increase transparency and lower this uncertainty is by adopting explicit numerical targets for inflation. This brings me to a third topic on which I will spend a good deal of time today—namely, some questions that should be addressed if a central bank were to decide to move to a regime of explicit numerical guidelines. Usually central banks think about these questions in terms of inflation targeting. We in the U.S., though, have a dual mandate to foster maximum sustainable growth as well as price stability.

I should admit up front that my views on this subject are still evolving. The profession has thought a lot about these questions in recent years, but I just don't think we've come up with adequate answers. These questions continue to challenge all of us: academic researchers who study monetary theory; economists who advise businesses and households on how monetary policy may affect their investment decisions; and central bankers who try to formulate effective monetary policy in a constantly changing—and inherently uncertain—economic system.

### The Tactics of Monetary Policy During the Transition to Price Stability

So let me start with the lessons that I learned about the tactics of monetary policy as we moved to price stability. As I think about the interactions between inflation and monetary policy, I always find it useful to remember that we're in Chicago, where Milton Friedman made an important observation: inflation is always and everywhere a monetary phenomenon. I learned this lesson the hard way back in the early 1970s in my days at the Council of Economic Advisors and at the Council on Wage and Price Stability. During those years inflation was running at unacceptably high rates, and in 1971 wage and price controls were implemented to deal with the problem. As an aside, many of us involved in these controls have vowed to fiercely fight any future efforts to reinstate them.

My experiences then made me realize that anti-inflationary efforts outside of the realm of monetary policy were far less important for lowering inflation than reversing the accommodative policies pursued by the Fed. Indeed, the distortions caused by policies such as wage and price controls do more harm than good. But that certainly was not doctrine back then. For example, in the 1970s Fed Chair Arthur Burns thought that monetary policy should not take sole responsibility in bringing inflation down. He thought that, in addition, some kind of wage and price review authority was a necessary element of anti-inflationary policy.

The lesson that inflation is a monetary phenomenon has become clearer with time. Much hard-fought progress against high inflation had occurred by the time I arrived at the Chicago Fed in September 1994. At that time the FOMC was embarking on a pre-emptive strike against emerging price pressures in order to prevent inflation from rising. The subsequent disinflationary cycle highlights the importance of flexibility in the implementation of monetary policy.

Part of this flexibility is the willingness to debate and discuss new ideas about the implementation of monetary policy. For example, recall the tactical discussion in 1995 and 1996 about opportunistic disinflation. Should policy deliberately move to lower inflation or should it wait and pocket the reductions in inflation that typically occur when the economy softens somewhat? In other words, should the effort to reduce inflation involve daily skirmishes or less regular battles when the opportunity arises?

Interestingly, opportunism won out in a different way. The opportunistic arguments in the mid-1990s largely were based on the idea that inevitable slowdowns in aggregate demand could be exploited to lower inflation. In fact, the productivity acceleration during the second half of the 1990s allowed for lower inflation without reductions in aggregate demand or economic activity. As a result, we had lower inflation at the same time that unemployment was falling. Since the productivity slowdown was then 20-plus years and counting, this possibility was largely unforeseen at the time of the opportunistic versus deliberative policy debate.

The next episode I want to highlight was in 2003. Following its May 2003 meeting, the FOMC acknowledged a relatively new risk to the economy: the possibility of an unwelcome fall in the inflation rate. For a central bank that had worked steadily for 25 years to reduce inflation, this sure was something new! But it highlighted the fact that with the achievement of price stability, monetary policy had to be based on flexible thinking; it had to acknowledge that inflation could be either too high or too low. And policy had to be conducted recognizing this fact.

What I've just described is reasonably well-known to business and monetary economists who have studied the path that the U.S. economy has followed to reach the neighborhood of price stability. Interestingly, it is a peculiarly American path.

While other central banks pursued single, numerical objectives, the U.S. achieved price stability without having an explicit numerical target. Of course, it wasn't that important to have a numerical definition of price stability when actual inflation exceeded price stability by everyone's measure. At the time, Chairman Greenspan offered a useful, though non-explicit, definition: it's when businesses and households are not taking inflation into account in their economic decisions. So as long as the plans of households and businesses still accounted for inflation, it seemed clear that price stability had not yet been reached.

Furthermore, while other countries have suffered sluggish growth to achieve lower inflation, the U.S. did not. This is because our disinflationary monetary policy could be made against the backdrop of a step up in productivity growth. We were also successful because monetary policy did not adhere to a rigid mechanical rule, but adapted to the incoming evidence on inflation and output.

This type of flexibility has been an important hallmark of monetary policy tactics over the last twenty years—which, I might add, has caused heartburn among academics and others who worry about excessive discretion and advocate a more rigid, rules-based policy. Instead, in pursuit of maximum sustainable growth and price stability, the Greenspan Fed—in my view—generally has responded adeptly and in a disciplined fashion both to changing economic conditions and financial risks that threatened macroeconomic performance.

This latter point highlights another aspect of flexible policy. This actually is an old prescription for central bankers that Walter Bagehot (the founding editor of *The Economist*) provided in the nineteenth century: provide liquidity to solvent financial institutions during financial market crises. Such action was clearly evident during the stock market crash of 1987, the extended monetary accommodation in the face of financial headwinds of the early 1990s, the Russian default in 1998, and following the terrorist attacks on 9/11.

In some instances, the injection of liquidity ran counter to the inflation risks that the Committee perceived just before the crisis. But as events bore out, such flexible monetary policy responses did not jeopardize the pursuit of our long-run goal of price stability. An important element in this disciplined approach to flexibility is that our long-run policy goals generally have been clearly articulated and are understood by the public.

## The Importance of Communications and Transparency

This brings me to my second topic: the importance of communications and transparency in the implementation of monetary policy. The changes in this area that have occurred in my time on the FOMC have been little short of extraordinary. Remember when central bankers deliberately avoided announcing their decisions because they thought that policy would be more effective if it surprised markets?

It was not until 1994 that the Fed decided to make an announcement immediately following an FOMC meeting. The first one went like this: “The Federal Open Market Committee decided to increase slightly the degree of pressure on reserves. The action is expected to be associated with a small increase in money market rates.” The key word was “slightly” and there’s no explicit mention of the federal funds rate. Then came explicit mention of the target fed funds rate; then announcing the tilt; expanding the tilt to cover the balance of risks; adding an economic description; two-sided inflation risks; and, finally, accelerating the release of the minutes. In addition, media coverage of all FOMC participants’ speeches has exploded, and the internet makes these readily available to everyone in real time. So, even though we do not follow a rigid numerical rule, we are giving the public a much better idea of the systematic ways in which the Committee makes judgments regarding economic developments and translates these into the course for monetary policy.

Although transparency requires careful execution of communications strategies, its benefits seem obvious—it’s the well-anchored inflationary expectations and reduced risk premia that I talked about earlier. When the public and financial markets have a clear understanding of Federal Reserve goals and the methods used to achieve those goals, consumers and businesses can better plan for future activities. Appropriately, there will always be risks for entrepreneurs in search of returns, but central banks should not add to those risks by unnecessarily increasing uncertainty regarding monetary policy. At the same time, though, they should not lead markets to think that the path for policy is more certain than it actually is. Finally, when policy is transparent, a central bank can respond to economic events and financial crises that involve liquidity shortages without creating undue risk—the bank can make it clear to markets that it is responding to a short-run problem and not lessening its commitment to price stability.

## Questions Regarding Explicit Numerical Guidelines

So an important question that central bankers face is: what’s the best way to be transparent and communicate policy? Some say that explicit numerical guidelines are the ultimate form of transparency and communication; they say it’s the best way for a central bank to anchor inflationary expectations and reduce policy and inflation risk premia to their appropriate levels. This brings me to my third topic: the questions that remain to be addressed as we discuss the advantages and disadvantages of explicit numerical regimes.

It’s pretty much accepted now by economists that monetary policy cannot permanently alter the unemployment rate or growth rate of the economy. This is often referred to as the vertical, or expectations-augmented, long-run Phillips curve and the natural rate hypothesis of Milton Friedman and Edmund Phelps. Attempts by monetary policy to push unemployment below its natural, or equilibrium, rate eventually will lead to increasing inflation and inflationary expectations, but not to a permanent decline in unemployment.

Now it wasn’t so long ago that the Humphrey-Hawkins Act did place explicit guidelines on the achievement of low inflation and maximum employment. The law was passed in 1978 when the natural rate hypothesis was more controversial. The Humphrey-Hawkins Act set the following targets for unemployment and infla-

tion within five years of the act's passage: the unemployment rate would be below 3 percent for those older than 19 and below 4 percent for those 16 years old and up, and CPI inflation would be under 4 percent. And the Act also stated that by 1988, the inflation rate was to be zero percent!

Well, we didn't get the unemployment rate to 4 percent by 1983 or the inflation rate to zero by 1988. Fortunately, though some would have liked it, the Fed was not held in contempt of Congress.

Of course, no one on the FOMC is suggesting that we reinstate numerical targets for unemployment. But FOMC members have expressed a variety of views on numerical inflation measures. Some have suggested an explicit inflation guideline. But no one has proposed full-blown inflation targeting in which we would commit to set policy with the sole aim of achieving a particular numerical inflation rate within some predetermined time period.

As an aside, I think that the open discussion the Committee has had on explicit inflation guidelines has been very healthy. Such debates are a strength of the Federal Reserve—we learn a lot from them. So no matter what we decide to do in the end, our discussion of inflation guidelines will help us formulate more informed—and better—monetary policy.

In any event, I think it's plausible that in some form, an explicit numerical guideline may be embraced some day. But I feel that there are many issues that need studying before a final determination may be made, and I'd like to spend the remainder of my time talking about a number of them. And I should emphasize here that I'm only asking questions, and not advancing any particular proposal.

The first problem is deciding what the number should be. As I noted, Chairman Greenspan offered a nonexplicit definition of price stability: when businesses and households are not taking inflation into account in their economic decisions. How do we put a number on that?

As recent history tells us, deciding on a number is problematic. In the late 1980's, it wasn't an issue. Inflation was around 4½ percent and looked to be heading up—the inflation outlook clearly was too high. But in 1994, core CPI inflation was a relatively low 2.8 percent. Was this rate too high? According to the minutes and transcripts, inflation was generally heading higher than most FOMC participants wanted. But that view was not universal. Many commentators thought an inflation rate of 3 percent was satisfactory.<sup>1</sup> Today, though, I doubt many people would find 3 percent to be an acceptable point estimate for an inflation guideline.

A related question involves a seemingly simple issue: which index should be selected for the inflation guideline? There are many measures of inflation: the consumer price index, the personal consumption expenditures index, and the GDP price index, to name only a few.<sup>2</sup>

When inflation rates are high, it typically doesn't matter which index is selected for the guideline, because all measures of inflation will be high and above the guideline. But when inflation is in the range of price stability, the choice of the index could matter. Indeed, seemingly small differences in the composition of consumption baskets and other measurement methods in principle mean that different indexes could send mixed signals to policymakers about the appropriate direction policy should take.

There are other issues with regard to the choice of the guideline index. As you know, the Fed thinks that the price index for personal consumption expenditures excluding food and energy is the best measure of underlying trends in consumer inflation. But does that mean it's the best index for a guideline? For example, the

total CPI is used in many private contracts as well as the inflation adjustments in many tax and transfer programs. So should we be concerned about the CPI as well? Also, in a period of rapidly rising energy costs—such as the present—will the public have confidence in an inflation guideline that excludes energy prices? Would such a guideline achieve its claimed advantage of reducing risk premia?

Another set of issues centers on the best way to specify the numerical guideline to anchor inflation expectations. Should it be a single hard number or should it be a range of inflation outcomes? And once that has been decided, what is the time frame for achieving and maintaining the numerical values? The problem is to come up with something practical, yet still informative.

The advantage of a single number is that it's precise, so there is no question how far you are from the guideline. The difficulty is that it's extremely unlikely that inflation at any point in time will be precisely at the guideline. To get around this problem, you could specify a range of acceptable inflation outcomes. It's more feasible to achieve inflation rates within a range. Of course, this depends on how wide the range is. An incredibly wide one would be uninformative, so it's a nonstarter.

Under both systems, however, there are difficulties in communicating policy. In the first instance, it's communicating what kinds of small deviations from the single number we would be willing to ignore. In the second case, it's communicating what kinds of deviations within the range we would have to react to. We don't want to leave the public with the impression that there necessarily is a "zone of indifference" about inflation whenever it's in the guideline range. In either case, the difficult communications task would be to explain the role of economic conditions in determining why sometimes you act and other times you don't.

Furthermore, the policy prescription needs to include a time period for evaluating the inflation outcome against the inflation guideline. Empirical evidence indicates that monetary policy does not affect the trajectory of inflation before 1 year, or more likely, 2 years. So it's impractical to specify too short of a time period to reach the guideline. Suppose instead you specify a very long time period, say 10 to 20 years. It's doubtful that businesses and households would find this very useful for their financial planning. Obviously, the answer lies somewhere in between. Many central banks that have guidelines refer to the time frame with the qualitative phrase: "over the medium term." It is difficult to say precisely what this means—is it three years, or five, or ten? And is it even a constant time period?

The time-frame decision becomes even more complicated when we consider the next issue I want to talk about—the Fed's dual mandate.

How does our growth mandate interact with a numerical guideline for inflation? As we saw with the Humphrey-Hawkins Act, achieving explicit fixed guidelines for unemployment or real GDP growth is not workable in practice. Theoretically, the equilibrium, or natural, rate of unemployment and the trend in potential GDP growth change over time with demographics, productivity trends, and other factors. And we're all well aware of the issues in measuring these concepts. In any event, monetary policy cannot alter the natural rate, and any influence on potential output from the risk premia channel is at most second order. As Europe is learning, reductions in high rates of structural unemployment require regulatory changes and increased competition. Paradigm changes are needed to remove structural impediments to growth and employment.

But even if it is accepted by economists that it does not make sense to set explicit fixed numerical targets for real growth and unemployment, the dual mandate still puts equal weight on price stability and maximum employment. In the academic literature on inflation targeting, a central bank that places substantial weight on both targets is referred to as a "flexible inflation targeter."

As of yet, I feel that the proposals for flexible inflation targeting require further elaboration before they can be of practical use to policymakers. Suppose for the sake of argument that we knew the natural rate of unemployment and the level of potential real GDP. The key question in formulating explicit guidelines in the context of the dual mandate has two parts to it: “How fast should we plan to close the deviation in inflation from price stability?” and “How fast should we close the deviation between the unemployment rate and the natural rate?” The answer is complicated, because it involves an interaction between the time frames for eliminating the deviations of both output and inflation from their guidelines.

This is because policy dilemmas may arise. Suppose inflation is one percentage point above its guideline. If output is above potential, then there is no policy dilemma because a contractionary policy would make progress on both objectives. But if output is below potential, then there is a conflict in achieving both objectives. The inflation gap points to raising rates, while the output gap suggests lowering them. Flexibility means that the central bank must balance the two deviations, so it would take longer to close either gap in the second case than in the first. And the larger the policy dilemma, the longer it would take to close the gaps. So there is a serious question about how to formally specify such variable time periods in a policy environment with explicit numerical guidelines.

Even if this problem is solved, other issues then come into play. As a legal matter, would the Fed need Congressional approval to adopt flexible targeting? And in light of the dual mandate, would this eventually lead to adding a numerical unemployment guideline that—like those in the Humphrey-Hawkins legislation—would prove to be incompatible with the natural rate hypothesis? Finally, how do you explain flexible targeting to the public? My experience is that whenever you mention a number, the media focuses entirely on the number and forgets all of the caveats.

This brings me to my final question. Suppose a central bank successfully adopted a formal inflation guideline that respects a dual mandate by flexibly adjusting the time horizons for achieving the guidelines. Would this policy look any different from current Fed policy?

Some academics who study inflation targeting central banks say no.<sup>3</sup> They say that, effectively, the Federal Reserve does engage in flexible inflation targeting. This is a bit puzzling since there are no announced explicit guidelines. Still, financial markets and the public do not seem to be bothered by the lack of an explicit number for future inflationary expectations, and at the present time, inflationary expectations are well anchored. So our actual policy has successfully obtained one of the most important benefits ascribed to a regime based on formal guidelines.

Then what is it that distinguishes current policy from simple discretionary ones that have the potential to produce large inflations, like those in the 1970s? I think it's the fact that central bankers know that even without rigid rules or numerical guidelines, their actual approach to policy must be aimed at keeping inflation expectations anchored at a low level. They see this as a prerequisite to achieving maximum sustainable growth over the long run. Central bankers also know that anchoring inflationary expectations sometimes requires preemptive policy tightening before the actual inflation numbers start to rise—moves that may prove unpopular with the public, but are necessary to keep inflation in check.

I've raised a lot of questions today concerning inflation guidelines and flexible targeting. Now I don't think there is a pressing need to make a decision today one way or the other. But the topic is one of the most important issues currently on the table regarding the appropriate strategies for conducting monetary policy. There clearly are many issues regarding guidelines and targeting for researchers, business economists, and policy

makers to study and debate. And this debate is going to be a healthy process; no matter what answers we come up with, we are going to learn more about the best ways to conduct monetary policy in our complicated and ever-changing economy.

Paradigms will continue to shift and new personalities will arrive on the scene. And central bankers will continue to grapple with the best ways to implement monetary policy and convey to the public how we aim to achieve the fundamental long-run goals of price stability and maximum sustainable growth. Some people complain that Alan Greenspan hasn't written down his secret for running outstanding monetary policy: "he didn't leave a playbook." But that's fine—as I found out when I was teaching, students learn best not when you give them the answers, but when you give them the tools to figure out problems. Indeed, the most important legacies of the Greenspan era may be the lessons that central bankers teach themselves as they reflect on the conduct of monetary policy over the past 18 years.

1. A sophisticated expression of this view was offered by George A. Akerlof, William T. Dickens, and George L. Perry, "The Macroeconomics of Low Inflation," *Brookings Papers on Economic Activity*, no. 1 (1996). It is based on the hypothesis that even though real wages determine purchasing power, workers have an extra aversion to seeing real wages lowered through a reduction in nominal wages. This results in nominal wages being sticky on the downside. These authors calibrate a model in which an inflation rate of 3 percent allows most realignments of real wages to occur without reducing nominal wages.
2. Most central banks that have targets use a consumer or retail index, and this has some grounding in economic theory since it is ultimately the well-being of consumers that matters for utility theory. For example, good business decisions among intermediate goods producers ultimately benefit consumers through their effect on final products and returns to investors who are also consumers.
3. See, for example, Marvin Goodfriend, "Inflation Targeting in the United States," NBER Working Paper no. 9981, September 2003.