

# Monetary Policy and Inflation Targeting in the United States

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NABE/GIC Conference  
Philadelphia, PA  
October 4, 2004

## Introduction

Good morning. It is a pleasure to see so many of you here today. To those of you who are visiting from around the country, I hope you enjoy your stay in Philadelphia. It is an exciting city and fall is a wonderful time to be here.

This conference brings together two organizations that the Federal Reserve Bank of Philadelphia has long supported. We are pleased to be co-sponsoring the annual convention of the National Association of Business Economists and welcomed the opportunity to have you visit our Independence Mall location at the opening reception last evening. And it is always a pleasure to see my friends from the Global Independence Center. This home-grown institution has been around for many years and continues to offer a forum for economists and business leaders to confront difficult issues and learn from the experience. To colleagues from both organizations, let me extend a warm welcome from all of us at the Philly Fed.

This morning, I would like to spend my time with you addressing a topic that I first discussed last spring when I spoke to the Money Marketeters in New York. My topic at that time was inflation targeting, and I came out in favor of the idea. I said the time had come for the Fed to adopt an explicit inflation targeting program. I noted that quite a few countries around the globe had already done so successfully. I acknowledged that for an inflation targeting program to be successful in the U.S., it would have to address our unique circumstances here, as well as resolve some practical challenges. Nonetheless, I expressed some optimism that these issues could be resolved.

Since that time, there has been a good bit more discussion and research into the concept of inflation targeting for the U.S. This morning, I would like to extend the discussion by proposing a specific inflation targeting program for consideration. My hope is that, by laying out a specific inflation targeting proposal, I can help move the public discussion to the level of detail necessary to develop and implement inflation targeting in the U.S.

For those of you who did not have an opportunity to hear my earlier remarks, you might ask why the U.S. should move forward on inflation targeting now. For 25 years, the Fed has steadily reduced inflation and inflation expectations, without resorting to an explicit inflation target. Indeed, the case can be made that the Fed has been remarkably successful over this period, and we have now achieved essential price stability. Hence, it might seem that there is no reason to adopt an explicit inflation target at this point.

However, having achieved price stability, there is still the matter of maintaining it. I believe an explicit inflation target can help us do that. It is my view that by defining what we mean by our goal of price stability, the Fed would not only better inform market participants of our intentions but would also strengthen their capacity to monitor our performance. This makes it more difficult for the central bank to compromise its objective some time down the line and hence heightens the commitment. Thus, a well-formulated inflation targeting program would give the public good reason to be more confident in the Fed's commitment to a stable price environment.

Let me be clear here. I do not foresee undue inflationary pressures building any time soon. I believe the U.S. economy is on course to achieve a continuation of this self-sustaining economic expansion without a substantial up-tick in inflationary pressures, at least in the short run. In terms of economic growth, I expect the steady growth in consumer spending and the continued growth in business investment spending to support growth in real output in the range of 3 ½ to 4 percent over the remainder of this year and through 2005. That kind of growth is a notch above the economy's long-run potential rate, so it will generate healthy

employment gains, as productivity growth returns to its long-run trend. At the same time, it is moderate enough to keep price pressures well contained.

Furthermore, I believe that the course on which the Fed is embarked--shifting the stance of monetary policy from its earlier extreme accommodation toward one of neutrality--will sustain a balanced expansion and allow inflation to remain manageable.

So my point is not that higher inflation is an imminent threat and we need an inflation target to avert it. My point is just the opposite. I think that setting an inflation target at a time of price stability makes eminently good sense. It would clarify the Fed's definition of its price stability goal--and seal its commitment to price stability--without requiring the Fed to shift its current policy strategy. And it would not disrupt the economy.

Just suppose the Fed were to announce an explicit inflation target at this point. I daresay that the Fed's credibility right now is such that the market would expect the Fed to adhere to it. So the public's inflation expectations would match the Fed's intentions. Having achieved that match, the Fed would be loath to break it and would risk doing so only in the most extraordinary circumstances. That, in short, is why this is a good time for the Fed to adopt an inflation target.

So, what exactly would such an inflation targeting program look like, and what specifically would my desired goal be? These are the two questions I would like to address this morning.

### **Why Inflation Targeting?**

Let me begin with a brief review of the potential benefits of inflation targeting. Both economic theory and experience demonstrate that securing a low and stable rate of inflation is the most important contribution a central bank can make to sustaining maximum economic growth. Price stability helps promote economic efficiency by allowing economic agents to discern relative price changes clearly and allocate current resources to their best use. It reduces uncertainty about the future and encourages both higher levels of investment and investment in the most productive projects. Equally important, it reduces the harmful distributional effects of both anticipated and unanticipated inflation.

Note that the stable price environment that I have just described includes not only low inflation in the present but also market participants' expectations of low inflation in the future. Thus, it is important not only that the central bank achieve low inflation, but that it make a commitment to maintain low inflation. Finally, the public must find the commitment credible. This is a fundamental element of true price stability. In simple terms, a central bank's commitment can be deemed fully credible only if the public's expectations about the future course of inflation exactly match the central bank's stated intentions with respect to the future course of inflation.

So the question is: Why would the public expect inflation to behave in accordance with the central bank's stated intentions? Economists would say that the only reason to believe individuals or institutions will act in accordance with their stated intentions is that it would be in their interest to do so when the time for action comes. So, it is reasonable to believe that the central bank will take the actions necessary to maintain low and stable inflation only insofar as the central bank will always see that the benefits of doing so outweigh the costs.

The problem is that the central bank may occasionally be tempted to pursue overly stimulative monetary policies in order to boost economic activity today at the expense of containing inflation tomorrow. This is all the more likely to happen after inflation has been under control for some time and the action thus seems relatively "harmless." Recognizing this, the public has reason to be skeptical that the central bank will carry out its stated intentions to maintain low and stable inflation over the long term without some form of commitment to the goal. Establishing an explicit inflation target overcomes this problem by increasing the benefits of sticking with the low inflation policy and increasing the costs of deviating from it.

An inflation targeting program is like a contract between the public and the Fed. It states, in explicit terms, what the Fed means by its goal of price stability. As long as the Fed abides by the contract--that is, achieves its inflation target as specified--the public, too, will abide by the contract--that is, will expect the Fed to

continue achieving its inflation target as specified. Conversely, if the Fed allows inflation to stray outside the target range, essentially failing to live up to its part of the contract, then the public will alter its expectations about future inflation accordingly.

Such a shift in expectations would be costly to the economy. This is because it is only when the central bank's inflation intentions, the public's inflation expectations, and actual inflation all match up that we have a stable price environment. In such circumstances investors are making optimal decisions, and the economy is delivering optimal outcomes--both in terms of price stability and real growth.

An explicit inflation target would give the Fed a stronger incentive to act as it says it intends to. Recognizing this, the public would consider the Fed's commitment to low and stable inflation more credible, and thus the full benefits of a stable price environment are more likely to be realized. Put another way, an explicit inflation target would make the socially optimal monetary policy what economists call a time-consistent one.

## The Dual Mandate

Before I go on to outline my specific proposal, let me address one other point in this discussion. As a member of the FOMC, I recognize that by law the Federal Reserve has a mandate that goes beyond just price stability. And, in advocating inflation targeting, I am sensitive to our dual mandate and the need to pursue our economic stabilization goals.

Undoubtedly, a commitment to maintain a stable price environment limits the latitude the Fed has in pursuing these stabilization goals. But this is not the result of adopting an inflation target. It is simply a reality, given the way monetary policy affects the economy. Everything else constant, adding monetary stimulus helps generate output and employment and also puts upward pressure on the price level.

Therefore, recognizing our dual mandate does not speak against the wisdom of inflation targeting as much as it recognizes the difficulty of conducting appropriate monetary policy where our objectives are intrinsically intertwined. In fact, a case can be made that the clarity and confidence afforded by an explicit inflation target may actually enhance the Fed's capacity to achieve the dual goals of price stability and strong economic performance. Once the public's inflation expectations are well anchored, changes in short-term nominal interest rates, and in current prices, send a clearer signal about changes in real interest rates and intertemporal shifts in relative prices. These improved signals should evoke stronger responses from market participants and hence heighten the responsiveness of the economy to monetary policy actions.

In short, I do not think of inflation targeting as restricting the Fed to the pursuit of just one goal, but rather as empowering the Fed to pursue its two goals with alacrity.

Having said this, I recognize that the inflation targeting program we establish must afford the Fed enough flexibility to respond appropriately to various economic disturbances. We should remember that the U.S. achieved its current price stability with a policy framework that I have referred to previously as one of "[flexible commitment](#)." In my view, an inflation targeting framework that precluded appropriate policy to respond to economic disturbances would be sub-optimal from the social point of view and would not be credible in the eyes of the public.

## The Proposal

With this as background, let me move to my inflation targeting proposal. Here the devil is in the details. In my view, any inflation proposal must address at least three distinct but interrelated questions: Should the target be a single number or a range? Over what time interval should the target be set? And what measure of inflation should be targeted? To advance the discussion on an inflation target for the U.S., let me offer a concrete proposal. My inflation targeting proposal is this: *The Fed should establish a target band of 1 to 3 percent for annual inflation, as measured by the 12-month moving average rate of change in the core PCE deflator.*

Why these specific features? There is a lot to talk about here.

## Setting a range

Let me begin by addressing the first question: Why an annual target band rather than a single long-run value or central tendency--as advocated by my colleague Ben Bernanke? My answer is based on two features of the practical world in which we live.

First, FOMC members may have different opinions about the optimal long-run inflation rate. Different models of the economy and different assessments of society's preferences can create legitimate differences of opinion. So it is unlikely, and even unreasonable, to expect that the FOMC members could agree to a single number for an inflation target. Nonetheless, the FOMC members could presumably be comfortable with a target band for inflation.

Once the FOMC members established a target band, it would help them coordinate their decision-making. FOMC members would know that as long as inflation is well within the target band, they have the latitude to consider a variety of stabilization strategies. But as inflation approaches the boundaries of the target band, the FOMC members would realize that they need to focus on strategies for keeping inflation within the band, properly taking into account the lags and uncertainties surrounding the impact of monetary policy.

Second, establishing a target band for inflation would also help the FOMC communicate its intentions to the public more clearly. People would know that inflation outside the target band is clearly unacceptable to the Fed, and they could expect the Fed to take action to bring it back "in bounds."

In setting the band, the Fed would also communicate to the public its assessment of the short-run volatility in inflation that is consistent with the Fed's maintaining price stability in the long run. The reality is that monetary policy cannot deliver the same degree of price stability over intervals as short as a month or a quarter as it can over the course of a year. Or, more precisely, it can do so only at the expense of creating an unacceptable degree of short-run instability in economic activity. So, the width of the Fed's target band would indicate how much short-run inflation volatility the Fed has decided to accept in order to limit short-run output volatility, given the economy's underlying structure. This information should help prevent unnecessary inflation or deflation "scares" when the inflation rate accelerates or decelerates.

So, in my view an annual band for inflation serves as a practical device for coordinating decisions among FOMC members and communicating clearly with the public.

Nonetheless, one might object that a single long-run value would provide a more precise anchor for long-run inflation expectations than would an annual band. Mathematically speaking, that may be true, of course. Yet, from a practical point of view, I think an annual target band establishes the stronger anchor. An annual target band gives the public a clear criterion by which they can monitor and assess the Fed's performance against its stated inflation objective on a continuous basis. Recognizing this, the Fed would always have the incentive to keep inflation in the target band and would weigh seriously any policy actions that risked pushing inflation outside the band. Public monitoring would not be brought to bear in the same way if the Fed had a single-value long-run inflation target.

To use a simple metaphor, let me suggest that we are building a road, or highway, to continued price stability. On my highway I would paint white lines along the shoulders, making it clear when the car is veering too far from the center of the road. If the car drifts toward the white line, the driver will likely react. And if the driver does not, the passenger probably will. With the single long-run target, the highway has no white lines to encourage the driver to stay on course. So the car is more likely to stray from the center of the highway, and the driver and passenger are less likely to react in time to keep from running off the road. For this reason, both driver and passenger are likely to feel more confident about reaching their destination if they take a well-marked highway.

Similarly, the Fed is more likely to follow policy consistent with long-run price stability, and the public is likely to be more confident that it will, under an inflation targeting program that specifies an annual inflation target band.

To recap, I think setting an annual inflation target band has significant practical benefits. It would help coordinate decision-making among FOMC members. It would improve the FOMC's communication with the public. And it would build public confidence that prices will remain stable over the long run.

## Focusing on an annual target range

I have been talking about a target band for annual inflation. In that regard, I believe the 12-month moving average of an inflation measure provides a relatively clear signal to the public--and to the Fed--of the Fed's inflation performance. Taking the 12-month moving average eliminates the "noise" of highly transitory movements in prices.

At the same time, it strengthens the "signal" of a change in trend inflation that a longer term moving average might obscure. For example, suppose that the Fed focused on the three-year moving average of inflation rather than the one-year moving average. Further suppose that inflation had averaged 1 percent for two and a half years, and then ratcheted up to 4 percent for six months. A three-year moving average of inflation would still only be 1 ½ percent, not an alarming number, but I would argue that six months of 4 percent inflation should certainly trigger a change in policy.

So, in short, targeting the inflation rate over an annual interval seems to me to bring the right focus both to the Fed's decision-making and to the public's monitoring of the Fed's performance.

## A 1 to 3 percent band to start

Having explained why I think a year is the right interval for the inflation target, let me turn to the companion issue: why I think 1 to 3 percent is the right band for the inflation target.

Setting the right band presents an interesting problem. I think there is general consensus that an annual inflation rate of more than 3 percent does not represent price stability and that annual inflation below 1 percent provides too little cushion against the risk of deflation in times of economic weakness. So a band of 1 to 3 percent seems to be a reasonable starting point.

But should the band be tighter? Perhaps. As I will explain in a moment, our recent history suggests that a tighter band is feasible. And perhaps ultimately, we will want to move in that direction.

However, I think starting with a band wide enough to command broad agreement is crucial. The reason is that it must be beyond dispute that any inflation targeting program respects the Fed's dual mandate: to maintain stable prices and a stable economy. While an inflation targeting program must preclude the Fed from compromising on its delivery of low and stable inflation, it must also allow the Fed the flexibility to respond appropriately to economic disturbances. As Chairman Greenspan indicated some time ago, monetary policy is, in the end, an exercise in risk management. Any policy regime must permit an appropriate, and immediate, response by the central bank to short-term disturbances without concern about signaling a regime change.

Admittedly, a plan that gives the Fed too much flexibility will do little to increase public confidence in the Fed's commitment to price stability. But I would point out that a plan that gives the Fed too little flexibility would turn out to be equally unconvincing and potentially dangerous.

Suppose an overly restrictive inflation targeting program were in place. Now, further suppose that a significant shock were to hit the economy. The Fed would face a difficult choice: pursue the appropriate stabilization policy or follow its very restrictive inflation targeting program. If the Fed sticks to its inflation plan, and that program is, in fact, overly restrictive, then the Fed will have needlessly compromised the economy's performance. If the Fed deviates from the inflation plan and pursues the appropriate stabilization policy, people will not know whether the action represents a lack of commitment to price stability or a temporary deviation from the inflation target path that does not compromise the Fed's commitment to price stability.

The bottom line is that an overly restrictive inflation targeting program either needlessly compromises the Fed's performance on the stabilization front or needlessly undermines public confidence in the Fed's commitment to price stability. So, my sense is that the wise strategy is to start with a relatively wide band for our inflation target and perhaps consider narrowing it in the future, as we gain experience.

Some might argue that the 1 to 3 percent band is itself too narrow and could constrain the Fed from effectively pursuing its economic stabilization objective. However, I do not think that should be a serious problem. Consider our recent economic history.

Since the mid-1990s, we have experienced several international financial crises, a stock market boom and bust, and a direct attack on the nation's capital and its financial center. We have been through an entire business cycle from strong expansion, through recession, through recovery, and into expansion again. In the course of responding to these events, the Fed has moved its target fed funds rate over a range of 500 basis points. Over that period, the 12-month average core PCE inflation rate has moved within a band of 1 to 2 percent. That suggests that a two-percentage-point band on this measure of inflation should provide the Fed with sufficient latitude to conduct stabilization policy.

Of course, we cannot know for sure what lies ahead. We may yet encounter some very unusual situation in which responding effectively to a disturbance would push inflation outside the inflation target band. Yet, the very rarity of the situation may allow the Fed to respond without any loss of credibility. Presumably, the unusual nature of the situation would make it easily recognizable, much as the events I just catalogued were. As long as the Fed clearly communicated how it was dealing with the situation, and, once it passed, began moving inflation back within its target band, its credibility could be preserved.

At the end of the day, I view a 1 to 3 percent inflation target as a reasonable way to implement a policy aimed at preserving price stability. It would serve to keep inflation low and stable, without overly constraining the Fed from reacting to economic or financial disturbances.

### **Why the core PCE deflator?**

Now let me turn to the last question of the proposal: the inflation measure itself. The choice of the PCE deflator is relatively straightforward. The Fed has been focusing on this measure in recent years, and I see no reason to change that. The PCE deflator is a broader measure than the consumer price index. Also, it is a chain-weighted index and so takes account of consumers' shifting among goods and services as relative prices change. Consequently, it reflects recent changes in the overall price level more accurately than the CPI, which is based on a fixed basket of goods and services.

However, I prefer targeting the core PCE deflator, that is, the deflator less its food and energy price components. Like using a 12-month moving average, using the core PCE helps reduce the "noise" in the inflation signal, enhancing its value as a monitoring device. In light of the recent run-up in oil prices, it is worth emphasizing that the choice of the core PCE deflator essentially insulates the Fed from having to respond to such shocks in order to achieve its inflation target. Large as it was, the recent run-up in oil prices has had relatively little impact on core PCE. Thus, the inflation targeting program will not induce the Fed to tighten aggressively when oil prices rise or ease aggressively when they fall.

With that, you have heard the rationale behind each aspect of my proposal. It is not an elaborate proposal by any means. It does not codify any new Fed procedures. It does not specify a particular reaction function for monetary policy. It does not set a timetable for returning inflation to target when deviations occur. It simply defines what the Fed means by price stability and thereby reinforces the Fed's commitment to, and the public's confidence in, its preservation.

### **Summary**

In conclusion, I believe a program of explicit inflation targeting is a logical next step for the Fed to take in its commitment to preserve the stable price environment it has worked so long and so hard to achieve. I believe a specific inflation target such as the one I propose here--1 to 3 percent inflation in the 12-month moving average of the core PCE--could be that step.

I will note that recent theoretical work on optimal monetary policy offers three lessons. First, it is optimal for the central bank to establish a low and stable rate of inflation. Second, it is optimal for the central bank to respond to disturbances that affect economic activity. Third, optimal monetary policy does the most good

when people understand what that optimal policy is and expect the central bank to execute it. To put it another way, optimal monetary policy is most effective when it is both transparent and credible.

By those standards, I believe my proposed inflation targeting program would move the Fed a step closer to conducting optimal monetary policy. It would help the Fed establish a low and stable rate of inflation. It would not unduly restrict the Fed's ability to respond to economic disturbances. And by increasing the transparency and credibility of Fed policy, it would enhance the Fed's overall effectiveness.

My goal today was simply to put an inflation targeting proposal out for consideration. There are few ideas that cannot be improved by debate and discussion among thoughtful people. So in that spirit, I thank you for listening, and I look forward to your comments and questions today, and in the days and months ahead.