

Safeguarding Good Policy Practice

Roger W. Ferguson Jr.

I am pleased to address this conference commemorating the 25th anniversary of the historic monetary policy changes implemented in October 1979. In my prepared remarks, I would like to focus on two issues with respect to safeguarding good monetary policy practice. First, I will discuss what constitutes good monetary policy practice and review the Federal Reserve's record in satisfying its mandates in recent decades. Then, I will speculate on how good policy outcomes come about. In particular, I will discuss the role of policy transparency, central bank leadership, and alternative monetary policy regimes in preserving effective monetary policy. Of course, the usual caveat to my remarks applies: I will express my own views, and you should not interpret them as the position of the Federal Open Market Committee (FOMC) or of the Board of Governors of the Federal Reserve System.

ASSESSING THE FEDERAL RESERVE'S PERFORMANCE AFTER 1979

When assessing what constitutes good monetary policy practice, I prefer to focus not on theory but on the reality of the Federal Reserve's objectives. In contrast to many other central banks, the Federal Reserve has been assigned a "dual mandate"—to pursue policies that both maintain price stability and achieve maximum sustainable

economic growth and employment. Good policy practice can be judged by the outcomes achieved. Therefore, I would like to briefly outline the Federal Reserve's performance with respect to the level and the variability of inflation and growth. To be sure, the strong economic performance over the past two decades has several possible explanations, but the practice of monetary policy has likely contributed by helping to preserve macroeconomic stability.

With respect to price stability, inflation in the United States over the past decade or so has clearly been lower and more stable than it was earlier in our history. In fact, annual inflation in the price index of personal consumption expenditures excluding food and energy—core PCE—averaged just over 2 percent from 1990 through the end of 2003 and consistently remained within a range—roughly 1 to 4 percent—that is relatively narrow compared with historical experience. This period contrasts sharply with the 14-year period from 1965 through the end of 1979, when annual core-PCE inflation averaged just over 5 percent and fluctuated between 3 and 10 percent. The recent experience of the United States with inflation has been similar in some respects and dissimilar in others to that of other countries. For example, based on the Organisation for Economic Co-operation and Development's (OECD's) measures of overall consumer price inflation, prices rose at an annual average rate of about 3 percent in the United States from 1990 through 2003, compared with about 3 percent in the euro area and in the United Kingdom and roughly 1 percent in Japan.¹ But, more important, the volatility of

¹ Data are from the *OECD Economic Outlook* (No. 75, Excel spreadsheet).

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inflation was lower in the United States than in these other economies.

An equally important indicator of the success of the Federal Reserve's monetary policy is private expectations for future inflation. Measures of inflation expectations obtained from financial asset prices clearly indicate that market participants expect that the Federal Reserve will maintain low and stable inflation. For example, although the difference between the yields on nominal inflation-indexed and Treasury securities is an imperfect measure that includes complicating factors, such as inflation risk and liquidity premiums, the five-year break-even inflation rate five years ahead has averaged about 2½ percent over the past five years and has fluctuated in a narrow range of about 1½ to 3½ percent. Survey measures confirm that inflation expectations over this period have been subdued and well anchored. The University of Michigan's survey of 10-year inflation expectations has averaged less than 3 percent and has stayed within a very narrow range over the past five years.

Assessing the outcomes with respect to the Federal Reserve's goal of maximum sustainable output growth is inherently more difficult. Estimates of the relevant measures, such as the non-accelerating inflation rate of unemployment (NAIRU), which in recent years has been decreasing according to some estimates, have very wide confidence intervals. But we can point to some evidence suggesting that the United States has enjoyed, besides subdued and stable inflation, some favorable developments with respect to output and employment. Certainly, we can document substantial gains in productivity in recent decades in the United States. According to the OECD, business sector labor productivity growth in the United States averaged about 2 percent from 1990 through the end of 2003, compared with about 1½ percent in the euro area and in Japan over the same period. And since the mid-1990s, this gap has widened, with annual productivity growth averaging about 2½ percent since 1995 in the United States, compared with about 1½ percent in Japan and just less than 1 percent in the euro area over the same period.²

Another important measure of the success of

monetary policy is how well the FOMC has responded to threats to our nation's financial stability. This claim is surely hard to quantify. But everyone would agree that, compared especially with the deleterious effects of the Federal Reserve's policy response during the Great Depression, the Fed has responded effectively to more-recent crises so as to help minimize the impact of such shocks on the greater economy. These episodes include the stock market crash of October 1987, the Asian financial crisis, and the collapse of Long-Term Capital Management in the late 1990s. Thanks in no small part to the flexibility of our policy framework, which I will discuss in greater detail in a few moments, the Federal Reserve appropriately discharged its responsibility as lender of last resort by providing ample liquidity and ensuring confidence during these and other troubling episodes, including the aftermath of the terrorist attacks of September 11, 2001.

There is greater disagreement about how well the Federal Reserve responded to the bursting in recent years of the so-called bubble in technology stocks. This topic is broad, but I would like to note that, as many of my colleagues and I have previously argued, prospectively addressing perceived asset-price bubbles is a matter of such great uncertainty that, even with the benefit of hindsight, it is not clear that policy decisions in the late 1990s, for example, should have been any different. In any case, the recession that followed the sharp decline in stock prices was shallow by historical standards.

HOW CAN WE SAFEGUARD GOOD POLICY OUTCOMES?

I would now like to turn to issues related to preserving, as best we can, a continuation of good policy practice in the future.

Central Bank Transparency

Consider first the important role of central bank transparency. Transparency of central bank

² These data on productivity growth are also from the *OECD Economic Outlook* (No. 75, Excel spreadsheet).

decisionmaking is desirable, not only for economic reasons but also because it is supportive of central bank independence within a democratic society. Because of the lagged effects of monetary policy on output and prices, the time horizon of central bankers is necessarily more distant than that of other policymakers. Thus, the central bank needs substantial insulation from political pressures to execute policy: An independent monetary authority is less tempted to make policy for the short term, such as boosting output or refinancing national budgets, at the expense of long-run objectives. Of course, the goals of monetary policy should be determined within the democratic process, but the central bank should have discretion to achieve those ends. In short, an appropriate arrangement within democratic societies is for central banks to have independence with respect to the instruments, but not the goals, of monetary policy, and transparency is an appropriate condition for that independence.

Besides its inherent virtues in a democratic society, transparency can enhance monetary policy's economic effectiveness by more closely aligning financial market forces with central bankers' intentions. Like other central banks, the Federal Reserve controls only a very short-term interest rate—the overnight federal funds rate. However, theory and empirical evidence suggest that longer-term interest rates and conditions in other financial markets, which reflect expectations for short-term rates, matter most for monetary policy transmission to the economy. If the monetary authority is transparent about the rationale and the stance of policy as well as its perception of the economic outlook, then investors can improve their expectations of future short rates.³

The path that monetary policy will follow in the future is uncertain even to policymakers because that trajectory will depend on incoming news about the economy and the implications of that news for the economic outlook. But announcing policy decisions in a timely manner and explaining those decisions fully allows market

participants to better anticipate the response of policy to unexpected developments and to speed needed financial adjustments.

Central Bank Leadership

Next, I consider the role of the individuals entrusted with the responsibility for making policy decisions. Although monetary policy frameworks have a potentially great influence on macroeconomic outcomes, we should not forget that the individuals who serve in central banks themselves have a crucial role in preserving policy outcomes. Even with a monetary policy regime that follows best practices and shapes the decisionmaking process, ultimately, individuals' beliefs and perceptions still matter for the actual policy taken.

An interesting recent study of the history of the Federal Reserve by Christina Romer and David Romer finds a very strong link between the skill and knowledge of the FOMC, particularly the Chairman, and macroeconomic outcomes.⁴ For example, with little reference to transformations in the disclosure policy and the independence of the Federal Reserve over the years, they ascribe the policy successes of two periods—the 1950s and the 1980s and 1990s—to a conviction of Federal Reserve Chairmen regarding the high costs of inflation and their tempered views about the sustainable levels of output and employment. In contrast, they attribute the deflationary and counterproductive policies of the 1930s to the erroneous belief that monetary policy can do little to stimulate output and that the economy can actually overheat at low levels of capacity utilization.

But there is one aspect of the process that Romer and Romer do not emphasize enough—the ability of central bankers in general, and indeed members of the FOMC in particular, to withstand political pressures. In addition, central bankers should have a thorough and practical, rather than a purely academic, understanding of the economy and, given the Federal Reserve's objective to preserve financial stability, of financial markets and institutions.

The Committee's institutional memory may also matter in this context. Today, the FOMC is

³ See Lange, Sack, and Whitesell (2003), Poole, Rasche, and Thornton (2002), and Bernanke, Reinhart, and Sack (2004) for evidence relating to the increased transparency of the FOMC over the past several years to the predictability of short-term interest rates.

⁴ See Romer and Romer (2004, pp. 129-62).

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well versed in the monetary history of the 1970s and 1980s, for example, and recognizes the great efforts that previous members of the FOMC undertook to achieve price stability. I trust that future generations of policymakers will continue to share that understanding and thus help to preserve good policy outcomes.

Will Inflation Targets Preserve Good Policy Practice?

Finally, I would like to touch on a topic that is perhaps more controversial in the context of safeguarding good policy practice. Several academic and professional economists, including distinguished colleagues of mine at this conference, have eloquently advocated the adoption of explicit numerical goals for central bank objectives, most notably inflation targets. The adoption of numerical targets, it is argued, facilitates central bank accountability and better anchors private expectations about inflation and monetary policy and thereby yields better macroeconomic outcomes.

Quantifying central bank objectives has some positive aspects and, certainly, vigorous advocates. Nonetheless, I harbor significant reservations about this approach regarding both its practical implementation, in the specific context of the Federal Reserve System, and its demonstrated effectiveness based on inferences from the recent experience of regimes around the world that have specific numerical targets, particularly with respect to inflation.

A basic, yet difficult, issue is the selection of a particular price index to guide policy, even in the case of a single goal such as inflation. Experience tells us that economies and the composition of productive enterprises change over time, and therefore the appropriate index and inflation value for the monetary authority would also need to change to reflect technological and other advances. In light of this inherent uncertainty associated with the construction of a price index, one might be concerned that choosing and rigidly adhering to an inappropriate index could have negative economic consequences that might outweigh prospective benefits.

Also, we must consider the ramifications of quantified goals in the context of our democracy.

That is, the quantification of objectives becomes even more problematic for central banks, such as the Federal Reserve, with multiple democratically based mandates, some of which are notably less disposed to quantification than others. For example, considering our dual mandate from the Congress, how do we measure maximum sustainable employment? Indeed, as I mentioned previously, estimates of the NAIRU and other possible related measures that address the full-employment objective, such as the output gap, have uncomfortably wide confidence intervals and are far more controversial than selecting a target for a specific price index.

Of course, the central bank could in principle quantify only the inflation objective. However, I fear that quantifying one goal and not the other would present problems because the monetary authority might inadvertently place more emphasis on the quantified goal at the expense of the nonquantified objective. Doing so would seem inappropriate. The ease of quantification should not influence how the Federal Reserve pursues its dual mandate.

In addition, I worry about the potential loss of flexibility from the implementation of an inflation target, as explicit numerical goals might inhibit the central bank's focus on output variation or financial stability. I would argue that, besides the episodes of financial turmoil in the late 1990s mentioned earlier, supply shocks, such as large increases in oil prices that simultaneously increase the price level and decrease aggregate output, can be problematic for inflation-targeting regimes.

Of course, some variants of the approach—so-called flexible inflation targeting, for instance—can address the issues I just raised by stipulating wide target ranges, by maintaining escape clauses that allow inflation to diverge from the target, or by aiming at average inflation over the business cycle. But the credibility gains from inflation targeting seem to me to be inversely related to its flexibility. Simply, credibility is less likely to be gained and expectations are less likely to be anchored if the central bank frequently uses escape clauses, widens the target bands, or pushes out its time horizon.

Ultimately, real credibility for achieving goals must come from performance, and predetermined frameworks do not seem to be a necessary or a sufficient condition to safeguard desirable policy outcomes. Observation of more-recent Federal Reserve actions reveals the apparent preferences of policymakers. In recent years, the Federal Reserve has apparently leaned against disinflation when core inflation has threatened to fall much below 1 percent and, similarly, against inflation when the core rate has threatened to rise above 2 to 2½ percent. The Federal Reserve has demonstrated this strategy without the formal adoption of a specific inflation target or range for the FOMC.

Given the subdued and stable inflation witnessed over the past 14 years, I have to ask: What would be gained from a formal goal for inflation? Can we draw compelling general inferences from the recent experience of inflation-targeting central banks? As a caveat regarding this evidence, economists have very limited data to work with, as the first recognizable inflation-targeting regime appeared in New Zealand in 1990. But to date, I would argue that the case for inflation targeting has yet to be proven.

Certainly, I would not deny that numerical inflation targets have proven useful for several countries in particular circumstances. One example is the United Kingdom, where, in the aftermath of “Black Wednesday” in October 1992, an inflation target helped provide a nominal anchor after sterling was removed from the European exchange rate mechanism. I should also add that the Bank of England has quite successfully helped to achieve low and stable inflation ever since. In addition, inflation targeting can have demonstrable benefits in lower-income countries that have experienced high and variable inflation rates in the recent past.

In several cases, quantified inflation targeting has served as a means of achieving the central bank independence necessary to focus more effectively on controlling inflation. That is, the adoption of an inflation target is frequently part of a broader program to increase the autonomy and transparency of central bank practice. But inflation targeting is not the only means by which to achieve these ends. Again, the recent

experience in the United States that I have noted is an object lesson in this regard.

Unfortunately, the empirical evidence for industrial countries available to date generally appears insufficient to assess the success of the inflation-targeting approach with confidence. For example, it is unclear whether the announcement of quantitative inflation targets lessens the short-run trade-off between employment and inflation and whether it helps anchor inflation expectations. In addition, some research, controlling for other factors, fails to isolate the benefits of an inflation target with respect to the level of inflation or its volatility over time, and output does not seem to fluctuate more stably around its potential for countries that have adopted numerical targets.⁵ Future data may or may not produce compelling evidence, but I maintain that the case today for inflation targets in countries that already enjoy low and stable inflation rates has certainly not been proven.

With respect to both its practical implementation, particularly in the United States, and the empirical evidence to date, I submit that the adoption of a numerical inflation target does not promise any obvious incremental benefits, at least in countries that have already achieved reasonable price stability. That said, a continuing commitment to price stability is certainly important, and the Federal Reserve has established a solid record of such commitment.

CONCLUSION

Based on this brief review, I conclude that, at least since the policy reform of October 1979, most observers would agree that the Federal Reserve has achieved generally good policy practice and outcomes. In my assessment, good policy practice cannot be safeguarded with certainty using a single rule or framework, such as inflation targeting. Good outcomes ultimately depend on flexible execution of an evolving strategy and policymakers with an unwavering commitment to low and stable inflation as the foundation for maximum sustainable growth.

⁵ See, for example, Ball and Sheridan (2003) and Castelnuovo, Nicoletti-Altimari, and Rodriguez-Palenzuela (2003).

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Charles A.E. Goodhart

I want to start with two matters that are relevant to the main theme of this conference but slightly extraneous to the particular topic that I have been allotted.

First, you, here in the United States, were not the only country considering a change in monetary control methods in the early autumn of 1979; we in the United Kingdom were also reviewing the pros and cons of various forms of monetary control at exactly the same time. Indeed, when John Fforde, the Bank's Executive Director in charge of monetary policy, visited the Federal Reserve Bank of New York at the end of October to find out about your new techniques, he reported back comparing your new mechanism to those already under consideration in the Bank. The gist of what was then being discussed here is available

in the Green Paper on Monetary Control, published in March 1980 by the Bank and the Treasury (H.M. Treasury and Bank of England, 1980).¹

I do not think that there was much difference in analysis between us. Fforde noted that your new nonborrowed reserve target mechanism led to a quasi-automatic response in short-term interest rates to undesired movements in the target aggregate, exactly like several of the possible responses that we were considering. But he noted that the cutting edge of this American version of our own considered variant was the enforced use of the discount window and exploitation of the associated non-price deterrent to such use, which in turn caused the banks to bid up for federal funds. This then enabled the authorities to say that they were restraining the supply of reserves while the market was setting the rate of interest. Fforde describes this as an appearance of market-generated interest rates, with the role of the authorities being to some degree disguised. The only real point of

¹ The internal Bank papers relating to these discussions will become available in 2009.

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analytical issue between us was whether international capital flows could possibly cause dynamic instability in such a system, a greater worry to us than to you.

The differences between us were not analytical, but lay in the political context. You then still had the Carter presidency and a Congress whose willingness to accede to interest rate hikes that would be strong enough to combat deeply entrenched inflationary expectations was questionable. By then we had Mrs. Thatcher as Prime Minister, and Ministers and political advisors to whom monetarism was a matter of faith. We, in the United Kingdom, were in the unusual situation of having a government that was far more hawkish than its central bank on the need for deflation.

In this context, our concern in the Bank was not so much that policy would not be made sufficiently tight to bring down inflation, but that the means of doing so would bring with it unnecessary collateral damage. We feared that monetarist Ministers and political advisors might believe that monetary base control was an *alternative* to interest rate changes, not just a mechanism for bringing them about. We also feared that Ministers would place an exaggerated faith in the closeness of the various linkages, between the monetary base and the target broader aggregate and between the chosen monetary aggregate and nominal incomes. If I may say so, this latter concern had formed the core of Goodhart's law² propounded just a few years earlier. All this is set out in my *Economic Journal* article of 1989, "The Conduct of Monetary Policy." But the point of this first extraneous comment is that what distinguished the Fed from the Bank of England in 1979 was the political context, not any difference in economic theory or analysis.

My second extraneous comment arises from a reaction to the Faust and Henderson paper entitled "Is Inflation Targeting Best Practice Monetary Policy?" and particularly Ben Friedman's (2004) discussant commentary on that, in the July/August 2004 issue of your *Review* that covered your preceding conference on inflation targeting. Here Ben

Friedman excoriates (inflation targeting) central banks in general, and the Bank of England in particular, for focusing solely, or at least excessively, on inflation in their comments and reports. In this respect he fails to mention the letters that the Bank is required by law to send openly, and to be published, to the Chancellor should inflation ever deviate by more than 1 percent from its target. Surely the expectation would be that any severe supply shock, oil prices or whatever, would cause such a deviation in the short run. The letter to the Chancellor would give the Bank the perfect platform to explain how it would trade off output deviations against inflation deviations, and the Chancellor could write back if he did not like the proposed trade-off.

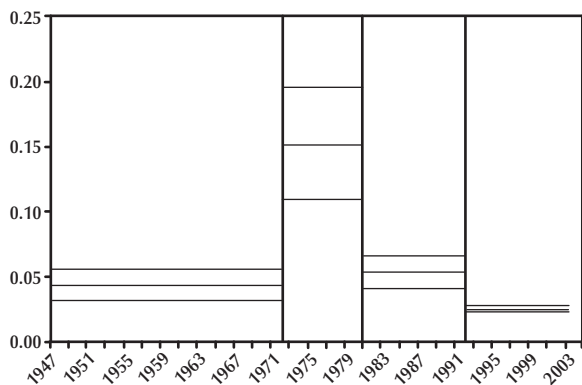
When the British Monetary Policy Committee (MPC) first met, we expected, on the basis of past evidence of inflation variability, to have to write such a letter about once per year. However, none have been written in the seven years of the MPC's existence. In some ways this is a pity because it obscures how one key feature of the system is supposed to work. It is a consequence of the fact that the volatility of inflation has collapsed in the past decade, since we turned to inflation targeting in 1993. Figure 1 is taken from Benati (2004). But we have not achieved greater stability of inflation by sacrificing output volatility. That, too, has declined, though much less dramatically (Figure 2). And in this context, not surprisingly perhaps, interest rates have also been less variable.

Such an overall marked reduction in volatility was neither expected in advance, nor, after the event, fully understood, though surely better policies played some role. Meanwhile, the Bank (and the MPC) is being criticized on statistical grounds for continuing to show a wider fan chart, especially for inflation, than recent history would suggest (Wallis, 2004). Given that we do not really understand the reason for that collapse in volatility, I have to confess that, if I were still on the MPC, I would reckon that tightening up the fan chart width in the light of past stability would be the harbinger of future bad luck.

Another concern is whether the private sector might unduly internalize such remarkable stability, and—along the lines of the Modigliani-Miller

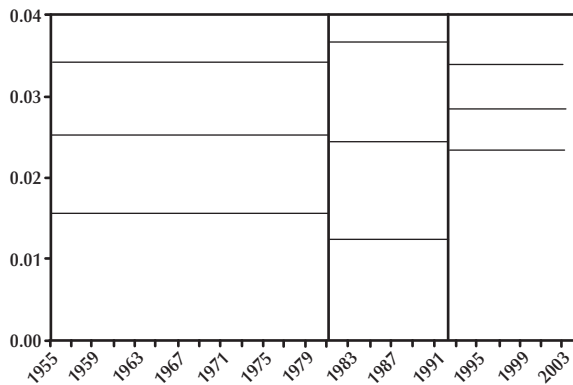
² Goodhart's law is "that any observed statistical regularity will tend to collapse once pressure is placed upon it for control purposes" (Goodhart, 1984, p. 96).

Figure 1
RPIX Inflation



NOTE: Estimated conditional mean and 95% confidence bands (delta method).

Figure 2
Real GDP Growth



NOTE: Estimated conditional mean and 95% confidence bands (delta method).

theorem, but now applied to policy—partially undo it.

In his excellent book *Risk*, John Adams (1994), a social scientist at University College in London, analyzes the ways in which humans react to risk. In the most remarkable, and in some ways shocking, part of his work, Adam records that most road safety legislation, car seat belts, for example, has actually led to an overall *increase* in fatal traffic accidents. While his results are clearly disturbing, I have not heard that they have been controverted.

What is going on then? The key feature is that most road safety regulation makes the environment safer for the driver, and the inhabitants of the car, who are often family or friends. Appreciating that they are safer, it shifts the return, the trade-off, between safety and speed in favor of speed. Of course, the driver wants more of both, so the number of fatalities in cars *does* tend to go down, but only at the expense of more fatalities for those outside the better-protected cars—that is, pedestrians and bicyclists.

It is entirely in the spirit of John Adams’s work to argue that one could reduce traffic accidents more certainly if, instead of an air bag, it was mandatory that each car had a six-inch spike pointing up at the driver from his steering wheel,

preferably painted red and dripping fake red gore. Do you seriously doubt that this requirement, I hesitate to call it reform, would sharply reduce speeds, shift people back to public transport and bicycles, and overall greatly reduce traffic-related fatalities? Yet, of course, it will not happen. It is not supposed to be part of the authorities’ remit to make life more, not less, dangerous for some, often politically powerful, sectors of society. Perhaps, notably in the field of financial regulation, sometimes this is what the authorities should be doing!

Be that as it may, let me try to apply such insights to monetary policy. If inflation, and with it interest rates, is now likely to be more stable, this enables the private sector to assume more risk, in the shape of greater leverage and driving-down risk premia in asset markets. If the authorities make the conjuncture safer, the private sector is bound to undo some part of that to restore their desired risk/return equilibrium. It is this kind of analysis that lies behind the argument that greater stability of goods and services prices will generate potentially greater instability in asset prices, and whether—and, if so, how—a central bank could and should deal with the latter.

But this latter general topic is “old hat,” having been thoroughly chewed over in innumerable

conferences and articles, and I doubt if such Modigliani/Miller undoing of stability is a *serious* danger to monetary policymakers. Equally, I would tend to dismiss two other bug-bears: (i) that the central bank might lose control of its power to set interest rates, perhaps for some technological reason, e-money and all that (see the discussion, edited by Adam Posen, in *International Finance*, 2000); or (ii) that deflationary pressures could cause nominal interest rates to reach the zero-bound, and then the central bank might become powerless. (See the papers given at the Bank for International Settlements conference on deflation in June 2004.)

One issue that does concern me is that the entirely domestic focus on inflation targeting, and the more nuanced version of that conducted here and by the European Central Bank, could lead to a combination of internal price stability and external exchange rate instability. Since few would want to sacrifice domestic price stability in pursuit of greater exchange rate stability, this raises the question of whether the monetary authorities might summon up slightly more courage to intervene in foreign exchange markets on those occasions when they felt convinced that markets had overshot and gotten it wrong.

A major problem here is that our understanding of the determinants and dynamics of the foreign exchange market, at least in the short and medium run, is so lacking that it takes a brave central bank official to call an overshoot. Indeed, one of the few stylized facts in this field, that exchange rates would appreciate in response to an increase in domestic interest rates, has been called into question in recent years. Insofar as international capital flows have become increasingly equity, rather than debt, related, a rise in interest rates could reduce rather than encourage inward capital flows.

A decade or so ago, one of the main transmission channels for monetary policy, at least for small- and medium-sized open economies, was external. That is to say, a rise in interest rates was expected to appreciate the currency, and the pass-through of lower import prices would help to lower inflation. Nowadays both of those influences, the effect of interest rates on exchange rates

and of exchange rates on domestic prices, have been perceived as more muted and, even in the case of interest rates, ambiguous of sign.

In place of external effects, the continuing build-up of personal assets and debts is, perhaps, making personal expenditures more sensitive to monetary policy. My point, however, is not that the transmission mechanism might be changing, but rather that there is, perhaps, rather greater uncertainty about the coefficients in these relationships. There is certainly a continuing, maybe enhanced, danger of getting the policy response wrong because of uncertainty about the transmission mechanism.

Faced with such uncertainty, central banks will surely be even keener than ever on gradualism, whatever the theories of robust policy responses and the need for learning may advocate. Those runners who lead the earlier stages of long-distance races are very exposed. Perhaps the safest place for central banks is slightly off the pace, behind, but close to, the curve.

The past 15 years or so have been a period of enormous success for central banks. Some of that success may have been fortuitous, with a relatively benign political and economic conjuncture, with some other part due to a once-for-all effect of declining inflation and inflation volatility, combined with falling, and quite stable, interest rates. One must expect conditions to become more difficult over the next 15 years.

If so, there may well be increasing political attacks on central bank independence, the more so where real economic growth becomes slow or stuttering. The analytical concept of the vertical Phillips curve is not one that lends itself easily to the public imagination. The idea that an increase in interest rates to safeguard price stability may be the best way to maintain long-run growth is not self-evidently obvious, especially to indebted business men.

Moreover, there is often a problem with democratic legitimacy, perhaps especially so in the Eurozone, and least in the United Kingdom. The main dangers that I see are political rather than economic. Combine slower growth with perhaps a mistake in judging the transmission mechanism, and it is easy to see how a populist politician

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might choose to run against central bank independence. I have elsewhere (e.g., Goodhart, 2002; Goodhart and Meade, 2004) tried to draw an analogy between the independence of the legal system and the operational independence of central banks. The latter, however, is more recent, less entrenched in our social and political mores, and far more fragile than that of the legal system. It could still all go wrong; if it did so, I would expect the chief weakness to be political fragility.

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William Poole

I can't help recognizing an emotional note in my reaction to this conference. Yesterday, we enjoyed three superb scholarly papers. Allan Meltzer's paper left me depressed, and the Lindsey, Orphanides, Rasche paper left me elated. Marvin Goodfriend's paper left me with hope for the future.

But now I'll try to be a dispassionate social scientist. This panel inevitably overlaps somewhat the previous one on what we have learned since October 1979. In no small part, what we have learned *since* October 1979 starts with what we learned *from* the Great Inflation and how it was brought to an end. Going forward, we need to incorporate in policy practice both sound theory and lessons from history.

I will make five major points, none of which is new but all of which deserve attention in the context of this conference. First, good science is extraordinarily important. Second, market confidence in the central bank is essential for good monetary policy. Third, stability of the real economy requires price stability. Fourth, central bankers have an obligation to communicate clearly with the general public. Fifth, we should not underestimate the role of leadership.

GOOD SCIENCE

The problems of the 1960s and 1970s were partly—not totally, but partly—the consequence of bad economics. Allan Meltzer has discussed those issues, and I do not need to repeat his argument here.

I note especially that Chairman Martin's dismissal of economics and economists does not make for happy reading today. I hope that we never again see Federal Open Market Committee

(FOMC) members with that attitude. Policymakers need not be professional economists, but they must be able to understand what economists bring to the table.

How do we safeguard a high level of expertise in the FOMC of the future? There is no way to ensure that the appointment process will always put the right people on the FOMC. But I think we can help to guard against appointment errors by working with Reserve Bank directors, who choose Reserve Bank presidents, with Congress, and with opinion leaders in general. Those of us in leadership positions today, and everyone else with monetary policy expertise, need to spend time in helping to instill in the general public a deeper understanding of monetary policy responsibilities. We need to discuss what characteristics are necessary for policymakers to be successful. I hope that we never again have appointments yielding the results of the 1930s, 1960s, and 1970s.

The largest gap in macroeconomics is the weak understanding of the relationship between real and nominal variables. In our models, we employ a Phillips-curve type of relationship to model inflation, or changes in the rate of inflation. In our models, a departure of the actual rate of inflation from the expected rate depends on a current and expected future real gap measure of some sort. I simply distrust this model, on both theoretical and empirical grounds. Empirically, I don't think it works very well, and theoretically it ought not to work very well.

I'd love to hear Chairman Greenspan offer a systematic exposition of his enormous success in forecasting inflation pressures. My sense of what I do, which I think is not dissimilar to what most FOMC members do, is attempt to intuit future inflation pressures from current observed pressures as they show up in both price changes and resource pressures, or real gaps, in individual markets. The approach is not totally without theory; for example, wage changes are evaluated in light of expected productivity trends. I attempt to sort out temporary from more lasting wage and

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price changes and attempt informally to construct an appropriately weighted average of disparate experience in various sectors. I look closely at data on inflation expectations, but treat such data carefully because longer-run expectations are really a vote of confidence on the Fed and not an independent reading on inflation.

I am extremely uncomfortable with this approach and believe that it is an invitation to future mistakes. I don't know what better to do.

PUBLIC CONFIDENCE

A standard feature of monetary analysis in recent years is that market confidence in the central bank is tremendously important. Retaining confidence requires, above all, successful outcomes. There is no adequate substitute for good results. The market does not require perfection—people do understand in broad outline what the central bank can and cannot do. People understand that some small mistakes are inevitable. Still, the market will surely lose confidence from mistakes occurring year after year after year.

Once confidence is gone, restoring it is incredibly costly. That is one of the prime lessons of U.S. experience in the late 1970s and early 1980s and experience around the world. To restore confidence, it is necessary to achieve, or least make progress on, policy objectives of price stability and full employment.

Making progress on policy objectives is far more important than hitting an intermediate target such as a steady, moderate rate of money growth. To the noneconomist, intermediate targets are highly technical in character. I am not an engineer, for example, and really don't care what engineers say about the strength of steel when bridges fall down. Similarly, the noneconomist really doesn't care about the rate of money growth. If it works, fine, but stable money growth is not a substitute for price stability. Of course, an intermediate target may be of transitional importance in restoring confidence, as the 1979-82 experience shows.

Restoring confidence may require—indeed, I suspect in most cases *does* require—bearing a lot of pain to demonstrate that a central bank is serious about meeting its responsibilities. The recession of 1981-82 is such an event. The market wants

to see the central bank is able to bear pain, and the reasoning is simple. If you cannot withstand a lot of pain, why should anyone believe you are serious given all the pressures to change course? Technical explanations can always be offered to explain a change in policy direction, but if it appears that technical mumbo jumbo is an excuse for not completing the job, then confidence will not be restored. Thus, a change in policy direction will require a fairly understandable explanation once a fair amount of pain has been endured.

The logic of pain seems inescapable. Inflation cannot fall permanently unless inflation expectations come down. Expectations will not come down in the absence of confidence that the central bank will keep inflation down in the future. Confidence in the central bank will not be obtained unless the market becomes convinced that the central bank, and the political system more generally, has the institutional strength to maintain low inflation. The real test of institutional strength is capacity to bear pain.

The rational expectations argument of costless disinflation through restoration of credibility never appealed to me. In 1979, given what the Fed had said and done over the preceding 15 years, it would have been irrational to have granted the Fed instant credibility.

PRICE STABILITY AND REAL ECONOMIC STABILITY

My third point is that maintaining price stability is extraordinarily important for stability of the real economy. The idea that we can trade off employment stability against inflation stability is flawed. I do not want to deny that there may be some trade-off around the edges, but the key regularity is that instability of inflation and real growth are positively correlated. Tolerance of higher inflation is not a recipe for creating higher employment or improved employment stability, but just the reverse. The reason is that inflation instability creates more instability in inflation expectations and wider dispersion in the expected rate of inflation.

Greater variability and dispersion of inflation expectations increases the magnitude of expecta-

tional errors and therefore increases misallocations in the real economy. Moreover, an increase in inflation tends to reduce the market's confidence in the central bank, which, in turn, makes it more difficult for the central bank to adjust its policy to help stabilize the real economy. This point was demonstrated dramatically in the 1980-82 period. Given weak market confidence in the Federal Reserve's willingness to control inflation, the Fed was not able to switch gears toward a less restrictive policy as employment weakened in the 1981 recession. The central bank could not switch gears because doing so ran the risk of undoing tentative progress in restoring the market's confidence in the central bank.

The arguments I have just offered flow from sound economics—the observed positive correlation between inflation instability and employment instability is what we ought to expect.

COMMUNICATION

Allan Meltzer discussed the intellectual environment that made the Great Inflation possible. By the 1960s, traditional central bank concern over inflation had come to be regarded as old fashioned and the new economics promise of an optimal trade-off of modest inflation to buy lower unemployment had won many converts. Although the Federal Reserve, especially the Board of Governors, included converts, the Fed also included leaders who shared traditional concerns about inflation. My memory of this period, which I have not tried to research for accuracy, is that traditional concerns were not stated forcefully by articulate defenders of price stability within the Fed.

Central bankers can influence public debates, if they try. One of the lessons I draw from the Great Inflation is that those of us in leadership positions in the Federal Reserve have an obligation to communicate actively. If we do not, by default we leave the debate to others. I think that academics are important to public debates primarily through the longer-run force of their scholarly contributions. These are all that really matter in the long run; in the short run, some academics command public attention, but not very many

and not much attention in the scheme of things. Press attention is concentrated on politicians, office-holders in general, and business leaders who control large resources. Federal Reserve office-holders immediately attract press attention, by nature of their positions. As a Reserve Bank president, I have an opportunity to reach an audience far larger than I ever had as a professor at Brown University.

The communications environment is quite different today from the early 1980s, when the Fed released relatively little information. In the interest of full disclosure, I was one of the skeptics when the Fed abandoned reserve targeting in the late summer of 1982. My fear was that the Fed would embark once again on a policy that would permit inflation to rise. As a monetary economist, perhaps I knew too much; I found the Fed's explanation for switching from nonborrowed-reserves to borrowed-reserves control in 1982 an example of the technical mumbo jumbo I referred to earlier. But the market bought the argument, and the fact that monetarists such as I were suspicious was irrelevant. I was wrong, and I am certainly happy that I was wrong.

Still, the current environment of much greater Fed openness has probably raised the standard of what will be required in debates in the future. If the Fed makes major mistakes and must again embark on a campaign to restore credibility, I suspect that it will have to pursue a more open dialog with the public.

In any event, safeguarding good policy practice from political pressures will require ongoing communication with Congress, market professionals, leading citizens, and the general public. Good monetary policy will be easier, and more effective, with widespread understanding of what constitutes good policy. That to me is one of the clear lessons of the Great Inflation.

LEADERSHIP

My last point concerns the role of leadership. This conference is a celebration of Paul Volcker's leadership.

Central bank leadership requires at times a willingness to push hard enough to get the job

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done—and recognition of how hard is too hard. The central bank does not want to get itself fired through changes in law or appointments that undermine the bank's authority. Pushing hard enough but not too hard is obviously a dicey act at times, requiring political judgment and acumen, but it is nevertheless one that central bank leadership must be able to pull off successfully.

I appreciate, at a much deeper level today than I did at the time, the extent of Paul Volcker's achievements in the 1979-82 period. Saying that is not meant to imply a negative comment about his achievements in later years. But certainly 1979-82 was a critical period in U.S. monetary history. I know that Paul Volcker did not do the job alone—support from President Reagan was critical. That said, there was no guarantee that President Carter would appoint Paul Volcker. Volcker was a logical, but not inevitable, appointment. President Carter could instead have appointed a Chairman who would have continued the policy of drift. The inflation rate would have continued to rise, and the pain of unwinding the inflation would have been greater.

The Great Inflation is understandable, but was not unavoidable. Stronger leadership by Chairman Martin would have cut short the early development of inflation. Chairman Burns could have stopped it. The intellectual and political environment of the 1960s and 1970s certainly had a lot to do with making the Great Inflation possible. Still, the Great Inflation was not inevitable.

Leadership really does matter.