Goals, Guidelines, and Constraints Facing Monetary Policymakers: An Overview

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The rate of inflation in the consumer price index over the past three years has been low and stable, averaging 2.8 percent and never exceeding that average by more than one-half percentage point in any quarter. Attending this success on the inflation front has been a gradual decline in the unemployment rate to a level that most economists agree is consistent with full employment. In broad terms, the Fed appears to have achieved the low-inflation "soft landing" that it sought.

Attaining this desirable economic state was not an easy task. Along the way, the Federal Reserve had to balance the often competing goals of price stability and full employment, relying on a broad set of indicators to guide monetary policy in a changing financial environment. Maintaining this desirable state presents significant challenges as well. As Donald Kohn suggests in his comments on a paper by William Poole, "a central bank believing that it had learned sufficiently from its history to guarantee that it would not repeat its mistakes would be suffering a serious attack of hubris."

Looking forward, central bankers in the United States and abroad must grapple with a broad array of questions about how best to conduct monetary policy. How much should the goal of price stability be emphasized relative to the goal of employment stability? Does central bank independence aid in achieving either or both of these goals? Does a stable, short-run trade-off between inflation and unemployment exist, and can it be exploited by the central bank? And whether such a short-run trade-off exists or not, is there a long-run trade-off in the variability of employment and inflation? What instrument should the central bank manipulate in order to achieve its short-run and long-run goals? What indicators will prove most reliable in signalling the level and direction of change of the central bank's ultimate goals?

In June of 1994, the Federal Reserve Bank of Boston sponsored a conference to address these questions. The five papers presented at the

conference fall into three broad areas. First, John Taylor and Jeffrey Fuhrer each discuss the efficiency of U.S. monetary policy, taking as given that policy has both inflation and (in the short run) output targets, and that monetary policy adjusts an interest rate instrument in response to deviations of inflation and output from their target values. William Poole's paper (which by itself constitutes the second group) suggests ways in which the monetary aggregates may still be useful for the conduct of monetary policy. The third group, which comprises papers by Charles Goodhart and José Viñals and by Guy Debelle and Stanley Fischer, examines international evidence in order to shed light on the questions of central bank independence and accountability. A concluding panel considered ways in which monetary policy could be improved, in light of the discussion in the preceding sessions.

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As one might expect, it was impossible to reach a consensus on many of the issues. Opinion ranged widely about how much emphasis should be placed on stabilizing employment relative to prices. One view suggested that the Fed cannot reliably affect any real variables and thus should not try to control them; the other worried about the seemingly exclusive focus on price stability and suggested that monetary policy must be responsible for prompt and appropriate management of real variables. Laurence Ball and Jeffrey Fuhrer reached exactly opposite conclusions about whether gradual or "cold turkey" disinflations were less disruptive. Finally, the assembled group disagreed about the nature of the "monetary transmission mechanism"—how changes in monetary policy instruments, such as the federal funds rate, affect the ultimate goals of policy.

Still, several broad conclusions emerged from the proceedings. First, many conference participants agreed that U.S. monetary policy had been quite successful over the past 15 years. The use of an interest rate instrument to bring inflation under control while minimizing disruption to output and employment has been a winning strategy. Second, most agreed that the role of the monetary aggregates in the conduct of monetary policy has been and should remain downgraded. Finally, most conference participants agreed with the broad conclusions of the Debelle and Fischer paper, namely that clear articulation of the central bank's goals is desirable, while constraints that dictate how the goals should be achieved are not desirable.

How Efficient Has Monetary Policy Been?

John Taylor's paper, "The Inflation/Output Variability Trade-off Revisited," considers the trade-offs between inflation and output that monetary policy faces in pursuing its ultimate goals. If no long-run trade-off exists between inflation and real output, as Milton Friedman and Edmund Phelps first suggested and most economists today accept, and if we acknowledge considerable uncertainty about the nature of the short-run inflation/output trade-off, then is there any such trade-off that may be reliably exploited by monetary policy? If not, then monetary policy should focus exclusively on inflation (or the price level) and ignore the consequences, if any, for the real economy.

The Inflation/Output Variability Trade-off

Taylor suggests that we consider the inflation/output variability trade-off. Its essence is straightforward: Keeping the inflation rate extremely stable about a target may entail accepting much greater fluctuations of GDP about potential (or unemployment about the natural rate), even in the long run. If so, monetary policy may wish to balance its effects on inflation and output variability.

The Taylor paper provides a simple motivation for the long-run trade-off. The motivation is based on a textbook macroeconomic model in which output depends on real interest rates, inflation responds to deviations of GDP from potential, and monetary policy sets the short-term nominal interest rate in response to deviations of inflation from target and deviations of output from potential. The combination of the aggregate demand equation and the policy response implies that the output gap is negatively related to deviations of inflation from its target: If

inflation exceeds its target, monetary policy will raise interest rates and depress output.

This simple characterization of the macroeconomy makes it easy to see why a trade-off between inflation and output variability may exist. When the economy is subjected to a price shock that raises the inflation rate, for example, the amount of output disruption that will occur depends on the response of monetary policy to inflation and output deviations. The more vigorously the Fed moves the interest rate to offset deviations of output from potential, the smaller will be the variability of output and the larger will be the variability of inflation. The converse is also true. Thus this simple model, coupled with alternative monetary policy behaviors, suggests a trade-off between the variability of inflation and the variability of output that monetary policymakers may be able to exploit in the long run. Based on rough calibration of the model to recent history, Taylor suggests that an approximately balanced response to inflation and output deviations would yield roughly equal variance of inflation and output.

The essence of Taylor's inflation/output variability trade-off is straightforward: Keeping the inflation rate extremely stable about a target may entail accepting much greater fluctuations of GDP about potential. If so, monetary policy may wish to balance its effects on inflation and output variability.

Taylor also discusses other potential long-run trade-offs, especially the effect of inflation on potential GDP, which is ruled out in the simple model that he uses. Reviewing work by Fischer (1993) and Motley (1994), he suggests that the link between inflation and productivity growth merits additional study.

Finally, Taylor considers the possibility that output fluctuations affect long-run growth, an idea that dates back to Schumpeter (1939). The notion that recessions might provide opportunities for firms to make structural adjustments that enhance productivity—a "cleansing effect"—has recently been advanced by Davis and Haltiwanger (1990) and Caballero and Hammour (1991). Taylor finds this link from fluctuations to growth unpersuasive, since a good deal of restructuring (through "job destruction") occurs during years when output is at or above potential. In addition, he suggests that greater output variability would have no net effect on the amount of restructuring, as larger positive fluctuations would decrease job destruction, while larger negative fluctuations would increase job destruction. The net effect of increased variability on productivity-enhancing restructuring would be zero.

Discussant Laurence Ball agrees with Taylor that monetary policymakers ought to focus more on medium- to long-term strategy than on the short-run trade-offs involved in the Phillips curve. Thus, the attention to the variability of inflation and output is appropriate. He also applauds the simplicity of the model used to motivate the variability trade-off but cautions that, while the model may be quite useful for normative purposes, it may be less useful for positive purposes. The reason is that the model assumes that inflation always reverts to the monetary authority's fixed inflation target whereas, over the past several decades, the inflation target appears to have moved around with a good deal of persistence. Understanding monetary policy has largely been a matter of understanding why the inflation target has changed, Ball suggests. Thus, while the model may fit the behavior of the economy since the late 1980s quite well, it is unlikely to fare well in explaining the behavior of the economy from the 1970s, when the inflation target apparently drifted up, through the 1980s, when the target declined precipitously under the direction of Fed Chairman Paul Volcker.

Ball, however, expresses some doubt that policymakers face a "painful trade-off between more variable output and more variable inflation." He notes that if demand shocks—shocks to Taylor's I-S curve and policy rule—are the only important sources of fluctuations, then it is, in principle, possible for the Fed to eliminate all of the variability in both output and inflation. In Taylor's simple model, in the face of a demand shock—an unexpected surge in defense expenditures, for example—the Fed can, by raising the interest rate tremendously, offset any effect of the shock on output *and* on inflation. Ball recognizes that Taylor's model abstracts from important features of the economy that make it very difficult in practice for policymakers to completely offset demand shocks.

In the face of significant supply shocks—unexpected increases in the inflation rate in Taylor's model—Ball professes agnosticism about the presence of a trade-off between inflation and output variability. He notes, however, that in Taylor's simple model, the sum of the deviations of output from potential after a supply shock is invariant to the particular policy response chosen. The *timing* of the deviations can be affected: A policy that puts greater weight on output will spread the output deviations over a longer, smoother path. This reduces the variance of output, but not the sum of the output losses. Simply put, Ball questions whether two years of 1 percent lower output are preferable to one year of 2 percent lower output. Measured by variability, the first outcome would be preferred.

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Finally, Ball suggests that a policy that tried to minimize output variability might not actually produce less output loss, although Taylor's model implies that it would. The reason is related to Ball's finding (Ball 1994) that moving inflation back gradually to its target is more costly than a rapid decrease in inflation. If so, then a policy that tried to minimize output variability by gradually reducing inflation after a supply shock could actually *increase* the output loss.

Optimal Policy Responses to Inflation and Output Fluctuations

Jeffrey Fuhrer's paper on "Optimal Monetary Policy and the Sacrifice Ratio" focuses on an age-old question: Is it less costly to disinflate gradually, or rapidly? In the small macro model developed previously in Fuhrer and Moore (1994), he finds that gradual disinflation is less costly. The reason is that, in a world in which wages and prices are predetermined by contracts, previously negotiated contract wages and prices cannot adjust immediately to the announcement of a disinflation. The more quickly and vigorously the Fed disinflates, the more contracts it catches unexpired. When these contract wages and prices cannot adjust to a monetary contraction, quantities of labor hired and goods produced must adjust, and thus the disinflation causes more disruption to the real side of the economy.

According to estimates presented in the paper, the U.S. central bank (the Federal Reserve) has recently chosen monetary policies that emphasize inflation far more than they emphasize deviations of output from potential. The consequence has been that the "sacrifice ratio"—the shortfall of output below potential, per percentage point decrease in the inflation rate—has been quite high during the disinflations of the past 12 years. The paper suggests that the sacrifice ratio could have been lowered substantially by increasing the emphasis on output fluctuations in the Fed's reaction function.

If the Fed were already responding optimally to inflation and output fluctuations, increasing emphasis on output fluctuations would of necessity yield improvements in the variability of output at the expense of increased variability of inflation about its target. But could the responses required to reduce the sacrifice ratio also yield decreases in the variability of both output and inflation about their targets? Fuhrer argues that they could. Because vigorous inflation responses of the Fed have been suboptimal—they did not result in the smallest inflation and output variability combination attainable—the Fed could alter its responses to inflation and output so as to lower the sacrifice ratio *and* decrease the variability of inflation about its target. Thus, the Fed could achieve improvement on all fronts by suitable reaction to its ultimate goals.

Fuhrer finds that gradual disinflation is less costly than rapid, because previously negotiated contract wages and prices cannot adjust immediately, and thus rapid disinflation causes more disruption to the real side of the economy.

N. Gregory Mankiw finds three broad areas of disagreement with Fuhrer's paper. The first is motivation: Why should we care about the sacrifice ratio in the way Fuhrer has defined it? In the typical discussion of the sacrifice ratio, one wishes to minimize the output loss during a one-time reduction in the inflation rate. But this paper looks at the ongoing effect of a particular monetary policy rule on the sacrifice ratio. In this context, a larger sacrifice ratio means a larger output loss when the inflation target falls, but it also implies a larger output gain when the inflation target rises. A better measure for this type of ongoing concern for output volatility is the variance of inflation, also considered in the paper.

Mankiw doubts that gradualism is less costly than cold turkey, and he argues that credibility effects may be extremely important in determining the cost of disinflations.

The second disagreement is with respect to methodology. Mankiw suggests that, because expectations enter the model only through the wage contracting mechanism and through the effect of long-term interest rates in the I-S curve, the model may still be subject to instability across policy regimes, that is, the Lucas critique. In addition, Mankiw finds some of the identifying restrictions imposed by the rational expectations assumption in this model to be akin to Sims's "incredible" identifying assumptions. Mankiw stresses that we do not know enough about the price-adjustment process to trust the policy conclusions that arise from a particular rendering of the sticky-price paradigm. He argues that we need to find rules that are robust across a wide variety of competing models.

Finally, Mankiw doubts the paper's main conclusion that gradualism is less costly than cold turkey. Citing cross-country comparisons by Ball (1994, forthcoming) that impose little structure on the data, he feels more comfortable with the empirical regularity found there, which indicates that more rapid disinflations are less costly. In addition, Mankiw argues that credibility effects, ignored in the Fuhrer paper, may be extremely important in determining the cost of disinflations. He cites the disparity between the Council of Economic Advisers' forecasts of inflation for the five years beginning in 1981 and the actual outcomes for those years as evidence that the Volcker policy was "not credible even to the Administration that had appointed Volcker" and thus may have played a role in the recession that accompanied the disinflation.

Summary discussant Martin Eichenbaum points out the similarities between the frameworks used by the Fuhrer and Taylor papers. Both assume that monetary policy uses the short-term nominal rate as its instrument, that the inflation rate responds sluggishly to aggregate demand, that policy-induced rises in the short-term rates are mirrored in long-term real rates, that long-term real rates affect aggregate demand, and that monetary policy affects inflation through its effect on aggregate demand.

Eichenbaum points out that the common structure employed by Fuhrer and Taylor ignores many of the financial market imperfections—credit crunches, liquidity constraints, and the like—that academics and Fed Chairman Alan Greenspan have alluded to in recent policy discussions. He considers the lack of direct evidence in support of the assumed monetary transmission a weakness of both papers.

Second, Eichenbaum suggests that while the models used in both the Taylor and Fuhrer papers imply an inflation variability/output variability trade-off, both papers should have included some direct evidence of the trade-off.

Eichenbaum concludes that any empirical rendering of a Fed reaction function should include a reaction to the forward-looking information in commodity prices.

Eichenbaum then explores a vector autoregression (VAR) analysis of the three variables considered in the Taylor and Fuhrer papers. He finds that, for a particular ordering of the variables in the VAR, a positive shock to the funds rate causes a *rise* in the inflation rate. He suggests that this puzzling correlation arises because commodity prices are excluded

from the reaction function. The positive response of inflation to an increase in the funds rate in the three-variable model is really masking a positive response of the funds rate to a rise in commodity prices—which preceded rises in inflation in the 1970s—and a subsequent fall in inflation.[1] Thus, Eichenbaum concludes that any empirical rendering of a Fed reaction function should include a reaction to the forward-looking information in commodity prices.

Comparing Direct and Intermediate Targeting

William Poole provides a monetarist perspective on the question of where monetary aggregates should fit into the current policy process. Focusing on the past dozen years, Poole acknowledges both the problems with the behavior of monetary aggregates and the success in using an interest rate instrument to conduct monetary policy. However, he counsels that recent experience does not preclude effective use of a monetary aggregate in the conduct of monetary policy. He suggests that "there is a strong case for paying much more attention to M1 than has been true in recent years."

Poole proposes a modification of current monetary policy that builds on the successful use of the interest rate instrument but allows a role for money growth targets.

Poole suggests two explanations for the breakdown between money growth and inflation in recent years. The first is that, in an environment of low inflation and low nominal interest rates, the penalty for holding non-interest-bearing money is small. As a result, fluctuations in the stock of money created by the central bank are largely absorbed by the public; they do not translate into higher inflation.[2] The second is that a consequence of a well-executed monetary policy is that the observed correlation between monetary policy instruments and policy goals will be zero. If the Fed has moved its policy instruments (monetary aggregates) so as to pin its ultimate goals at their targets, then one will not be able to observe any correlation between the instrument settings and the ultimate goal, since the goal has not moved from its target. A corollary to this proposition is that a search for the best monetary aggregate by comparing correlations of aggregates to policy goals will be unsuccessful if the Fed is doing a good job.

Poole points out that monetary policy when using an interest rate instrument is less predictable and more difficult to communicate to the public than monetary policy when using a monetary instrument. Generally, a 1 percentage point decrease in money growth yields a 1 percentage point decrease in inflation and nominal interest rates in the long run. The simplicity of the monetary prescription for lowering inflation is lost when using an interest rate instrument, however. In order to lower inflation, the Fed must first *raise* nominal interest rates, then lower them. And Poole argues that we cannot say with any confidence how much of an increase in rates is required to lower the inflation rate 1 percentage point.

Poole suggests that the difficulty of the Fed's job under an interest rate regime is compounded by the interaction of the Fed's expectation of how its actions will affect the credit markets with the credit markets' expectations of how the Fed will act. He asserts that it may be impossible to build a model that incorporates this simultaneity of expectations and implies a reliable rule of thumb such as the 1 to 1 rule implied by a monetary aggregates approach.

A Proposed New Role for Money Growth Targets

In light of the preceding observations, Poole proposes a modification of current monetary policy that builds on the successful use of the interest rate instrument but allows a role for money growth targets. He suggests that the Fed should allow the federal funds rate to "vary within a considerably wider band, perhaps 100 basis points, between FOMC meetings," as the demand for bank reserves fluctuates, keeping the supply of bank reserves on a

[1] In contrast, the impulse responses for Fuhrer's model reported in Fuhrer and Moore (1994) show that inflation *falls* following a positive shock to the funds rate.

[2] One standard description of the link from money creation to increased inflation is as follows. If the Fed wishes to increase the stock of money, it must induce the public to hold the money by reducing the cost of holding money—the interest rate on alternative means of storing value. A fall in the interest rate raises demand for interest-sensitive spending, which may increase aggregate demand sufficiently to put upward pressure on prices.

steady path. The advantages of this policy, according to Poole, would be twofold. First, the transition to higher or lower interest rates would be smoother than the discontinuous path followed by rates under the current regime. Second, movements of credit market rates could once again provide important information to the Fed, as rates would reflect the markets' assessments of the significance of incoming data, not only "market speculation on how the Fed will respond to the data."

Benjamin Friedman reads the history of using the monetary aggregates to guide monetary policy somewhat differently. In response to Poole's two-pronged defense of monetary aggregate targeting, Friedman voices several objections. First, he argues that the objection that "no baseline prediction exists . . . as to how much . . . inflation will rise if the central bank, say, lowers interest rates by 1 percentage point" is invalid; the two papers in the first session of this conference provide examples of models that do exactly that. Conversely, a stable money demand function, the cornerstone of the baseline money model, is nearly impossible to find in the U.S. data. Thus, the empirical support for the interest rate approach is arguably stronger than that for the monetary aggregates approach. In addition, Poole's objection to a policy that *permanently* fixes the nominal interest rate carries little force, because no one has ever suggested that the central bank pursue such a policy.

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Second, Friedman dismisses Poole's explanation of the vanishing money–income correlation. Friedman points out that, even if the Fed had pursued an optimal monetary policy, the *partial* correlation between money and income—the correlation holding the effects of other variables on income constant—would not be driven to zero; in fact, it would increase. Thus, the estimates of the partial correlation between money and income are not consistent with Poole's optimal monetary policy story.

Donald Kohn focuses on Poole's proposal to fix the supply of reserves and allow the federal funds rate to fluctuate within a band in response to changes in the demand for reserves. Kohn argues that the unpredictability in the demand for reserves would yield a volatile funds rate that often hit the upper or lower end of its band, imposing significant uncertainty on financial markets. He also asserts that it would be neither more nor less difficult to obtain information from asset prices under the fluctuating funds rate regime; market prices would still be determined in part by expectations of short-rate movements, now with the added burden of anticipating reserves demand.

Kohn argues that no feasible alternative is available to the present practice of using a short-term interest rate as a policy instrument and looking at all kinds of information to gauge progress.

Policymakers have drawn two important lessons from the experience of the past 25 years, Kohn argues. First, no feasible alternative is available to the present practice of using a short-term interest rate as their policy instrument and looking at all kinds of information to gauge their progress. Second, given the lags in the monetary transmission mechanism, policymakers must be ready to move their instrument quickly in response to new information.

Lessons from International Experience

Charles Goodhart and José Viñals's paper "Strategy and Tactics of Monetary Policy: Examples from Europe and the Antipodes" provides a comprehensive taxonomy of the current and projected issues facing monetary policymakers in Europe, Canada, and Australia/New Zealand. They first document that in virtually every country, price stability has become the primary objective for the central bank. Interest-

ingly, where legislation has accompanied the focus on price stability, it is rare to find a precise definition of price stability. Most, although not all, arrangements allow the central bank to respond to other economic conditions, often with the stipulation that the prime directive be accomplished first.

Price Stability: The Central Bank's Primary Goal

As Goodhart and Viñals note, much of the support for an independent central bank with a primary objective of price stability has come from the theoretical economics literature. The time inconsistency argument, for example, asserts that central banks under pressure from the electorate will consistently accept unexpected output gains at the cost of increased inflation, thus building in an inflationary bias. While this bias towards inflating is widely cited as an argument in favor of legislating price stability as the only goal of the central bank, relatively little empirical backing for the inflationary bias exists, and thus some have questioned the exclusive focus on price stability. As an alternative, many economists have suggested a nominal GDP target, which gives equal weight to prices and to deviations of output from potential. Goodhart and Viñals point out that central banks nonetheless have overwhelmingly opted for the price stability goal, perhaps because potential GDP is hard to estimate; data on GDP are available only with a lag and are subject to revision; and a focus on price stability underscores that central banks cannot be responsible for real variables in the long run.

Goodhart and Viñals document that in virtually every country, price stability has become the primary objective for the central bank, and point out the possibility of a deflationary bias.

The paper goes on to review the more detailed issues pertaining to the achievement of price stability: Should the central bank target the price level or the rate of change of prices? Should central banks adopt target ranges for prices, rather than point targets? At what horizon should the central bank announce that it intends to attain its goal? Which index (producer prices versus consumer prices, for example) should be used as the measure of price performance? Should explicit contracts that reward central bankers for good performance be used to provide the incentive to achieve the goal?

Next, Goodhart and Viñals address the merits of direct versus intermediate targets in achieving price stability. Citing Persson and Tabellini, they argue that "An inflation contract . . . generally dominates contracts based on intermediate monetary targets." Nonetheless, relatively few direct inflation targets are observed among central banks clearly concerned with price stability. Apart from historical accident, one reason may be that the effect of monetary policy on prices occurs with considerably more delay than the effect on monetary aggregates or other financial variables. Thus, use of a financial aggregate as an intermediate target could provide an earlier signal that policy has deviated from the agreed-upon course. Most European countries have made the exchange rate their primary target, on the grounds that it responds instantaneously to interest rates and is widely understood by the public. The larger and less open countries, such as Germany, France, and the United Kingdom, have chosen monetary targets, primarily in their belief that monetary aggregates are reliably linked to nominal variables, can be controlled by the central bank, convey information to the public about the stance of monetary policy, and thus facilitate monitoring by the public of monetary policy.

Goodhart and Viñals point out the possibility of a *deflationary bias* among central banks committed to price stability.[3] Given uncertainty about both the structure of the economy and the shocks that might perturb the economy during the delay between policy action and its effect on prices, central banks may attempt to lower inflation to its target level quickly, so as not to suffer derailment at the hands of unpredictable events. In fact, the experience in both Canada and New Zealand is consistent with this hypothesis: Both central banks have reduced inflation to, or below, their target levels in advance of the agreed horizon.

Finally, Goodhart and Viñals discuss the impact of a monetary union on monetary strategy and tactics in Europe. Countries currently differ significantly

[3] This hypothesis provides an interesting counterpoint to the *inflationary bias* of central banks suggested by Barro and Gordon (1983).

with regard to implementation of monetary policy: Reserve requirements, the discount window, and open market operations are used to differing degrees across Europe. Considering the diversity of current practice, the need to unify both policy formulation and policy execution remains a daunting task for the European Monetary Institute.

Cooper stresses that a central bank should remain accountable to the political process even though reasonably independent of it.

Richard Cooper points out that the excellent price stability performances by the central banks in the United States and Japan—the first an independent bank with no explicit targets, the second a central bank with little independence—run counter to the generalizations drawn in the Goodhart and Viñals paper. He also criticizes the easy acceptance that Goodhart and Viñals grant to price stability as the central bank's primary objective. Cooper stresses the importance of the central bank's role in maintaining the smooth functioning of the financial system in the face of large real and financial shocks, and also the "lubrication" that inflation can provide in allowing real wage adjustments when nominal wages are difficult to reduce.

Cooper points out the importance of the distinction between the independence and the accountability of a central bank. The central banks of the United States and Germany, he claims, are reasonably independent of the political process, but they are still accountable to it. The design of the European System of Central Banks essentially makes the central bank completely independent of the political process. Cooper finds this institutional arrangement "highly undesirable" because it removes a degree of longer-term accountability to the political process from the central bank's actions. Finally, he dismisses other rationalizations of the focus on price stability—money only affects prices in the long run, inflation decreases real growth and productivity—as lacking in empirical support.

The Costs and Benefits of Central Bank Independence

Guy Debelle and Stanley Fischer's paper "How Independent Should a Central Bank Be?" answers the question with a blend of sensible interpretation of empirical regularities and compact theoretical analysis. The authors stress the multidimensional nature of central bank independence. In particular, they distinguish between *goal* independence and *instrument* independence. They argue that the optimal outcome may be one in which a legislative body sets the central bank's *goals*, but the central bank sets its *instruments* however it believes it can best attain the prescribed goals.

Debelle and Fischer begin by reviewing the results that relate measures of central bank independence and macroeconomic outcomes for various countries. They find that independence is negatively correlated with the rate of inflation: Countries with more independent central banks generally experience lower inflation rates. In addition, countries with greater central bank independence appear to attain better economic performance, perhaps because they are generally better disciplined and thus suffer fewer and smaller self-inflicted shocks. Thus, independence appears to be a "free lunch": Increased central bank independence yields better inflation outcomes with no loss to output.

Debelle and Fischer distinguish between goal independence and instrument independence for a central bank, arguing that the optimal outcome may be one in which a legislative body sets the goals, but the central bank sets its own instruments.

Having said this, Debelle and Fischer turn to a comparison of German and U.S. performance during recent disinflations. Many believe that when a more credible central bank announces a disinflation, expected inflation will fall, prices will adjust in line with the newly expected inflation rate, and output will not

suffer. Thus disinflations should be noticeably less costly in countries with credible central banks. The Bundesbank—widely viewed as the most credible central bank in the world—should have earned a "credibility bonus" that would allow it to disinflate with less cost than a central bank without such credibility. Debelle and Fischer, drawing on work by Ball (1994), find that German disinflation has been purchased at a *higher* cost than U.S. disinflation, particularly in the case of the 1981–86 episode. In addition, they find that this relationship extends beyond the U.S.-German comparison. For the countries in their sample, the output loss associated with a disinflation is higher for countries with greater central bank independence. This finding suggests a cost to greater independence, and is consistent with their conclusion that independent central banks must be held accountable for their actions, so that they do not pursue price stability to the exclusion of aggregate demand management.

In discussing Debelle and Fischer's paper, Robert Hall points out an intriguing irony in the evolution of macroeconomic theory and monetary policy implementation. Soon after the academic community warned of the inherent inflationary bias of central banks—which arises "for the same reason that a judge will impose too lenient a sentence on a miscreant—the crime has already been committed and the sentence can't deter it"—central banks proceeded to relentlessly wring inflation from most of the developed countries in the world. Thus, the prediction made by believers in the inflationary bias not only was not borne out, it was sharply contradicted by central banks around the world.

Hall suggests that the best solution is to appoint central bankers with our preferences and to build in incentives that penalize chronic inflation.

Hall regards the conclusions drawn by the Debelle and Fischer paper as "schizophrenic" with regard to the relationship between central bank independence and output volatility. Early in the paper, they suggest that the pursuit of hawkish policies has no cost in terms of real performance. On the other hand, their final figure shows that hawkish countries appear to have more severe recessions. Germany and the United States have low output *variances* but the largest output *sacrifice ratios* during disinflations. Thus, any conclusion about the costs of maintaining central bank independence depends critically on the measure of output loss used.

With regard to the theoretical section of the paper, Hall points out that the Debelle-Fischer model violates Friedman's natural rate law. Sustained and fully anticipated inflation stimulates output in their model and creates a bias towards inflationary monetary policies.

Finally, Hall emphasizes that he agrees with the basic conclusion of the paper. We should not appoint central bankers who reflect our own preferences, since they will tend to produce too much inflation. One approach is to appoint inflation hawks, as in Rogoff (1985); the problem with this approach is that hawks will consistently underrespond to recessions. The best solution is to appoint central bankers with our preferences and build in incentives that penalize chronic inflation.

Panel Discussion

The conference closed with a panel discussion among five eminent macroeconomists. The panel revisited and expanded upon many of the themes taken up in the preceding sessions.

Paul Samuelson warns against lashing ourselves to the mast of a fixed policy rule; having seen any number of proposed rules come and go, he is skeptical that any rule is likely to perform well in practice. A little good sense goes much further. He sees no necessity that the Fed pursue a single goal, arguing that "God gave us two eyes and we ought to use them both." Rather, he suggests that to run the Fed, you need to focus on both the price level and the real output profile. He argues against reading too much from movements in the bond markets; they are, after all, only a reflection of our own actions. To do so would be to behave like a monkey who discovers his reflection in the mirror and "thinks that by looking at the reactions of that monkey—including its surprises—he is getting new information." Finally, he counsels against trying to isolate the central bank too much from the democratic process. This strategy cannot work in the long run; if the people are sufficiently displeased with the actions of the central bank, any legislation that shields the Fed will be overturned.

James Tobin agrees with many other participants that monetary policy did "pretty well" in the Volcker era. However, he observes that the economy has spent considerably more years producing below its potential than above it. Part of the explanation for this phenomenon, Tobin asserts, is that the public believes that a recovery is defined as a period of nonnegative growth in GDP, instead of growth at or above the rate of potential. Tobin suggests that the result of this misconception is that "pressure for expansionary policy vanishes once the quarterly real growth report is positive." Tobin advises further that, because the link between the federal funds rate and the real economy is somewhat tenuous, the Fed should consider conducting open market operations in longer maturities that are "closer to the points of meaningful contact between the financial and real economies."

Tobin expresses dismay at the widely supported proposition that central banks ought to ignore real growth and employment and focus exclusively on price stability. Monetary policy must worry about real outcomes, Tobin argues, because it is unlikely that fiscal policy will be flexible enough to effectively manage them. Finally, Tobin cautions against using zero inflation as the default target, citing several arguments—the downward rigidity of nominal wages, the policy constraint of the zero floor of nominal interest rates, and upward biases in standard measures of inflation—in favor of a *positive* target rate of inflation.

Robert Barro urged the central bank to focus exclusively on control of nominal variables such as the price level, monetary aggregates, and nominal GDP, rather than real variables such as employment and real GDP. Nominal variables are the proper domain of monetary policy, he asserts, because monetary policy has "uncertain, and usually short-lived and minor, influences over . . . real variables." But for a price stabilization program to be successful, it must be attended by a credible commitment to the goal. Otherwise, the temptation will always be to accept ex post the real-side advantages that attend unexpected and unfavorable price shocks, thus deviating from the path of price stability. A commitment will likely be viewed as more credible the more binding are its legislative underpinnings; therefore, Barro cites the growing support of legislated, independent central banks as a reasonable means of committing to a rule.

Lyle Gramley also emphasized the successes of monetary policy in the 1980s, suggesting that they were attributable to the sharper focus on price stability as the goal of monetary policy, and to more forward-looking monetary policy. In addition, Gramley strongly advocates the use of an interest rate instrument to conduct monetary policy. This would decrease the cost to businesses of highly variable interest rates and improve overall performance relative to a monetary aggregates strategy. Finally, he argues for legislated definition of the Fed's goals, as suggested by Debelle and Fischer.

Bennett McCallum suggests that the Fed use policy rules, not as external constraints imposed on policymakers' behavior, but as benchmarks for use in the decision-making process. McCallum favors a rule in which the monetary base is adjusted so as to attain a nominal GDP target. He suggests a GDP target because keeping GDP growth close to target would

Panel Comments

Samuelson counsels against trying to isolate the central bank too much from the democratic process.

Tobin observes that the economy has spent considerably more years producing below its potential than above it.

For a price stabilization program to be successful, Barro noted, it must be attended by a credible commitment to the goal.

Gramley strongly advocates the use of an interest rate instrument to conduct monetary policy, and favors legislated definition of the Fed's goals.

McCallum suggests that the Fed use policy rules, not as external constraints, but as benchmarks in the decision-making process.

ensure a low average rate of inflation; the same cannot be said of achieving a target growth rate for a monetary aggregate. Using the base as the policy instrument is desirable, McCallum argues, primarily because it requires a very simple policy rule: Increase base growth when nominal GDP is below target, and decrease it when nominal GDP is above target. By contrast, an interest rate instrument requires a more complex rule, in part because what constitutes a restrictive interest rate depends on the rate of inflation and the state of the rest of the economy. For example, McCallum cites the confusing rule he tells his students: "If the Fed wants interest rates to be lower [through lower inflation], then it must raise the interest rate." McCallum has found that, in model simulations, his monetary base rule performs quite well.

Conclusion

At the first Federal Reserve Bank of Boston Conference in 1969, Paul Samuelson opened his comments with the declaration: "The central issue that is debated these days in connection with macro-economics is the doctrine of monetarism . . . the belief that the primary determinant of the state of macro-economic aggregate demand . . . is money." Twenty-five years later, the status of money in the thirty-eighth conference is far from central; indeed, William Poole's paper strives hard to find *any* role for the monetary aggregates in the conduct of monetary policy.

In his opening remarks for the 1978 Federal Reserve Bank Conference, Federal Reserve Bank of Boston President Frank Morris expressed dismay that "it will be a long time before we again have the complete confidence which we had in the early 1960s—that we knew exactly what we were doing." Judging by the comments of many of the 1994 conference's participants, we should have regained in the 1990s some of the confidence that we lost in the 1970s: "the Fed has performed well indeed in recent years" (William Poole); "the results of monetary policy in the 1980s were remarkably good" (Lyle Gramley). At the time of the conference, it appeared that inflation was under control, real growth was positive and sustainable, and the Fed had found a policy strategy that could keep it that way.

Nevertheless, participants expressed concern about whether the current success could be maintained in a dynamic, changing economy. As this conference pointed out, we are still quite ignorant about much of the way the economy works. Economists do not agree on the degree of emphasis monetary policy should place on prices versus output; they do not agree on the size of the output loss associated with further decreases in the inflation rate, or how to minimize that loss; and they do not agree on the mechanism by which monetary policy affects output and inflation. If monetary policy had to respond to a sizable supply shock, for example, these areas of ignorance would become more obvious weaknesses.

As with the 1978 conference, we did not expect this conference to produce the new synthesis that would dispel our ignorance. But we hoped that it would, as Frank Morris hoped, "generate a building block or two upon which a new synthesis will be based." The building blocks that emerged from this conference include a beginning understanding of the inflation/output *variability* trade-off that monetary policymakers face, a better understanding of the consequences of using a short-term interest rate as the instrument of monetary policy, and preliminary international evidence on the costs and benefits of central bank independence.

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Goals, Guidelines, and Constraints Facing Monetary Policymakers

At the Federal Reserve Bank of Boston's most recent economic conference on June 19, 20, and 21, 1994, bankers, economists, and other financial specialists met to consider three broad questions about the conduct of monetary policy. First, how efficiently has U.S. policy balanced the goals of price stability and full employment? Second, have rapidly changing financial markets made the use of intermediate targets, such as monetary aggregates, obsolete? Third, what can domestic policymakers learn from the tactics and strategies employed by foreign central banks? The conference agenda is outlined below.

How Efficient Has Monetary Policy Been?
John B. Taylor, Stanford University
Discussant: Laurence M. Ball, The Johns Hopkins University
Jeffrey C. Fuhrer, Federal Reserve Bank of Boston
Discussant: N. Gregory Mankiw, Harvard University
Summary Discussant: Martin S. Eichenbaum, Northwestern University

Comparing Direct and Intermediate Targeting
William Poole, Brown University
Discussants: Benjamin M. Friedman, Harvard University
Donald L. Kohn, Board of Governors of the Federal Reserve System

Lessons from International Experience
Charles A.E. Goodhart, London School of Economics
José Viñals, Bank of Spain
Discussant: Richard N. Cooper, Harvard University
Stanley Fischer, Massachusetts Institute of Technology
Guy Debelle, Massachusetts Institute of Technology
Discussant: Robert E. Hall, Stanford University

How Can Monetary Policy Be Improved? A Panel Discussion
Robert J. Barro, Harvard University
Lyle E. Gramley, Mortgage Bankers Association of America
Bennett T. McCallum, Carnegie Mellon University
Paul A. Samuelson, Massachusetts Institute of Technology
James Tobin, Yale University

The proceedings, Conference Series No. 38, will be published late this year. Information about ordering will be included in a later issue of this *Review*.

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