# Commentary: Understanding the Greenspan Standard

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No matter what metric you use, the Greenspan era gets exceedingly high marks for economic performance. The era always will be remembered for its price stability—with declining and now low, stable inflation—and for its economic stability—with only two historically short, mild recessions and three long expansions. An indication of how different things are in the Greenspan era is that the current expansion is already one of the longest in American history.

Alan Blinder and Ricardo Reis have provided us with a comprehensive evaluation of the Greenspan era, shedding light on key policy issues and controversies. I particularly liked their behind-the-scenes review of the move toward greater transparency. And I agree with their overall evaluation of Alan Greenspan that "when the score is toted up, we think he has legitimate claim to be the greatest central banker who ever lived."

**Evaluating policy with a monetary policy rule**

The core of the Blinder-Reis paper is an evaluation of monetary policy through the lens of a policy rule, in particular the Taylor rule. Blinder and Reis find that this rule fits the Greenspan era very well.

They then use the estimated rule for a number of purposes. They use it to identify key episodes, defined as the deviations from the rule.

They also use the rule to back out Alan Greenspan's implicit estimate of the natural rate of unemployment and to assess the correct response to a change in productivity growth. They also use the rule to assess whether fine-tuning has been "resurrected."

Their use of a policy rule as an analytical device to study monetary history is part of a growing body of literature, including work by Clarida, Gali, and Gertler (2000); myself (1999, 2002); and more recently, Janet Yellen's (2004) commentary on Alan Greenspan's (2004) own review of the period and Laurence Meyer's (2004) book on practical decisionmaking at the Fed. Studying history this way demonstrates the analytical power of policy rules, and historians, economists, and policymakers should find it fascinating. I could quibble about econometric technicalities; for example, there are pitfalls in estimating residuals when you include two lagged dependent variables in the policy rule regressions. But Glenn Rudebusch (2005) has covered that issue very well.

Instead, I would like to focus on the Blinder-Reis policy interpretation of the analytical results. In my view, Federal Open Market Committee (FOMC) monetary policy decisions under Alan Greenspan's leadership have been guided by a clear set of monetary policy principles. Good judgment and leadership have been essential to implementing these principles, but the principles are by no means a secret. These principles, along with their judicious implementation, are a major reason for the extraordinary economic performance during the Greenspan era. In contrast, when Blinder and Reis describe FOMC decisions in their paper, they stress pure discretion rather than principled decisionmaking, saying that "FOMC decisions are made one meeting at a time, without precommitment to any future course of action and often without much indication as to what those future actions might be. The secret to Greenspan's success remains a secret."

## Econometric allegory or literal description

To understand the reasons for this different interpretation, note first that while Blinder and Reis use a policy rule for their analysis of the Fed's interest rate decisions, they are emphatic that the Fed itself does not use such a rule to make interest rate decisions. As they put it, "As an empirical matter, the monetary policy decisions of the Greenspan era are well-described by a Taylor rule…. But any Taylor rule for the Greenspan Fed needs to be interpreted as an econometric allegory, not as a literal description of how the FOMC (or Greenspan) actually reaches a decision."

Blinder and Reis do not say what they mean by a literal description, but presumably they are imagining the FOMC mechanically following a policy rule. For example, they say, "Once you have estimates for all the parameters in [the policy rule], you don't need Alan Greenspan's astute judgment to produce interest rate decisions; a handheld calculator would do." Nothing could be further from the truth. When I first proposed this policy rule I was emphatic that "such rules cannot and should not be mechanically followed by policymakers," and that remains my position. Rather I suggested other, more practical approaches to using policy rules that could build on and give support to good judgment by policymakers; I argued that these practical approaches would yield many of the benefits of policy rules that had emerged from monetary policy research—including the work of Milton Friedman, Robert Lucas, Edward Prescott, and others—on policy evaluation, consistency over time, and accountability.

## Using policy rules as a cross-check in policy deliberations

One suggestion was for the Fed staff to present the recommendations of policy rules to the FOMC along with simulations of interest rate paths from the rules in future periods. If the policy rules gave different readings from the current instrument settings, then the FOMC could have a healthy discussion of why they were different. This would serve as an essential "cross-check" if the decisions were

out of line; the simulations would focus discussion more on expectations and implicit contingency plans. This cross-checking approach started being used by the FOMC during the 1990s, and it is still being used. In fact, cross-checks—policy rules are one of many—are a key characteristic of the Fed under Greenspan and are one reason why policy has worked well.

For an example already in the public record, consider the FOMC meeting on Feb. 3, 1999, where Govs. Meyer and Gramlich, and then-staff member Kohn discussed why their estimate of the Taylor rule was calling for higher interest rates than the actual settings. Upon reflection, it turned out that the reason was not the policy rule per se, but the estimate of the nonaccelerating inflation rate of unemployment (NAIRU). I quote Don Kohn speaking at that meeting:

> *As it happens, a 4½ percent NAIRU also would help reconcile the current stance of monetary policy with the results of Taylor-type rules. Gov. Gramlich noted at the last meeting and Gov. Meyer yesterday that the versions of this rule the staff calculates all tend to show that the federal funds rate is too low. This undershoot results from the existence of a large gap of actual over potential output, by standard calculations. If the NAIRU is at the lower 4½ percent level, however, the gap about disappears, and the current funds rate is more nearly consistent with the committee's past pattern of reactions to actual and forecasted levels of output and inflation and with Taylor's rule.*

Later in that meeting, the chairman would make his own skeptical position in the NAIRU clear, saying, "Using NAIRU in our structural models is in effect like using a phantom."

Having Fed staff members present policy rules as part of the FOMC deliberations has had useful byproducts. For example, it has created a framework for analyzing different approaches to communicating about policy. As Michael Woodford's (2005) paper for this conference

makes clear, the decision to mention a "considerable period" in August 2003 was an effort to inform the market of how long the FOMC would hold the federal funds rate lower than would otherwise be implied by the usual practice, as described by a policy rule.

**Monetary policy principles with and without mathematics**

The other suggestion was to think of the policy rule as a set of principles to follow. Several good monetary principles are imbedded in the algebraic Taylor rule. One principle is the goal of "price stability," defined in the rule as a low inflation rate (my example was 2 percent, but as a principle, it could be nonnumerical, or it could be something that would decline over time, say from 5 percent to 2 percent, as in my 1993 example). Another is the "greater than one" principle in which the interest rate promptly would be raised by more than any increase in the current inflation rate (the actual response coefficient was 1.5 in the algebraic rule). A third principle is that the interest rate should react to conditions in the real economy (in the algebraic rule, the actual coefficient was 0.5 on real output measured as a deviation from potential GDP). This principle implies two other principles: one is the need for preemption, where you may have to adjust interest rates even before inflation starts to increase, and the other is the need to react strongly if the economy starts to fall into recession.

In my view, all of these principles have been used by the Fed in practice during the Greenspan era. As evidence, I quote from Alan Greenspan's (2004) own review where he says there has been "an unrelenting focus of monetary policy on achieving price stability," and that "a key objective has been to ensure that our response to incipient changes in inflation was forceful enough… in the face of an incipient increase in inflation, nominal interest rates must move up more than one-for-one."

To go further with this "principles" approach, observe that some principles of monetary policy cannot be written down mathematically, but they are principles nonetheless. For example, one relates to

the problem that interest rate rules can be misleading at very high or very low rates of inflation, where one has to focus on quantities and emphasize Milton Friedman's principle that inflation is ultimately a monetary phenomenon. And there is also the asymmetry in the risks associated with deflation, which may require larger or longer lasting interest rate changes than would otherwise be necessary. Another principle is that of injecting large quantities of liquidity in a liquidity crisis or a payments crisis, as occurred in 1987, 1998, and 2001. Providing liquidity in this way is actually a very old principle of monetary policy.

If you think about policy this way, equating deviations from an algebraic policy rule with discretion is just wrong. Monetary policy works best if it is based on certain principles. Some of these principles can be formulated in mathematical terms. Others cannot. There clearly are advantages if principles have a precise or mathematical representation, for then, one can do econometric comparisons over time. And it well may be that monetary researchers will find a way to express some of these principles mathematically and incorporate them into policy rules. I always have been reluctant to put asset prices directly into policy rules, but someone may find a way to do so in the future, and this could help policymakers in practice.

**Implementing the principles**

How does the Fed actually implement these policy rule principles without mechanically following the rule? Implementing principles is a difficult job in any area of public policy and requires judgment and good sense. A good analogy, used in my 1993 paper, is how the courts practically implement the principles embodied in patent law.

I believe the literal description by which the FOMC has achieved the "greater than one" principle, for example, is close to the following. The Fed staff uses models, such as their FRB/US model. When there is an increase in inflation, or a forecast of an increase, the Fed staff, by

simulating the model, will show the FOMC that an increase in the funds rate will be needed to reverse it or prevent it.

Now, according to any good model that treats expectations and price adjustment sensibly (and FRB/US certainly is in this category), this will require an increase in the *real* interest rate, and will, therefore, require increasing the federal funds rate by more than one-for-one with the increase in inflation. So, if the Fed is using its model this way, as I believe it is, then the "greater than one" principle would be implemented by this procedure. To the extent that this process is regularized at FOMC meetings, then the Fed is effectively following the principles imbedded in the policy rule.

**Reinterpreting the results**

With this interpretation, one gets a characterization of monetary policy during the Greenspan era, which is consistently principles-based. Periods during which the Fed is "on the rule" are just as interesting, and they offer just as much to learn from, as periods when it is "off the rule," in contrast to the interpretation of Blinder and Reis who say that "the most interesting episodes are when the Federal Reserve under Greenspan departed most from its estimated 'rule,' that is, when it exercised the most discretion." Three "on the rule" episodes worthy of careful study are the increase in the federal funds rate in the late 1980s; the increase in the funds rate following the 1990-1991 recession, especially in 1994-1995; and the increase in the funds rate during the past year. There has been a great deal of learning over time. The first increase was by the right amount, but it may have been delayed a bit by the 1987 stock market crash. The second increase was more preemptive but not with a lot of information provided. The third increase has been well-telegraphed. The same kind of learning about implementation pertains to the two "on the rule" easing periods around the two recessions of the Greenspan era. The second one was more timely and more aggressive than the first.

This alternative interpretation leads naturally to the study of the most important difference in policy in the Greenspan era compared with the great inflation era: namely that the interest rate response to inflation was less than one-to-one in earlier periods. The emphasis on preemption may be part of the reason for the difference. In this regard, it should be noted that the larger coefficients in a policy are not evidence of a resurrection of fine-tuning.

If there are criticisms that can be detected using this interpretation, they would involve moving back "on the rule" too slowly following the ends of the periods of special easing, such as the 1987 stock market crash and the 1998 liquidity crisis. Coming back off those special easing periods more rapidly may have brought excesses into control in a more timely fashion. More "after action" research of these and other similar periods with the aim of obtaining more precision about the "liquidity provision" principle would be useful.

**International monetary issues**

Most of the international considerations in the Blinder-Reis paper relate to the decision to cut the federal funds rate in 1998 after the Russian default. I disagree with the view that this decision was based on global considerations beyond simply reducing risks to the U.S. economy. According to Alan Greenspan, speaking at the FOMC meeting in February 1999, "our 75-basis-point action last fall was directed at countering a freeze-up of financial markets, which constituted a demonstrable threat to the stability of our economy."

However, there are many other international issues in the Greenspan era worthy of study. As Ronald Reagan said at Alan Greenspan's swearing-in ceremony in 1987, "Chairman Greenspan will have to work closely with the heads of foreign central banks. With the entire globe becoming a single and highly competitive marketplace, Chairman Greenspan will play an important role…." President Reagan was right.

Alan Greenspan has had an important role in the Group of Seven (G7) meetings of central bank governors and finance ministers, always a voice of reason, always stressing good economic policy principles. He has been involved in exchange rate issues, including diplomatic efforts on the Chinese currency peg and problems relating to current account adjustment. He has worked on International Monetary Fund (IMF) reform, including finding innovative ways to clarify the limits on exceptional access with an overall budget constraint. I believe that these efforts have not been emphasized enough by historians of the period. The efforts have contributed greatly to the improved economic performance of the world economy, and, thereby, the U.S. economy, in recent years. That there was no contagion from the Argentine default made it unnecessary even to consider whether a cut in interest rates in the United States was needed, as in the case of contagion following the Russian default. Clearly, it is better that there was no contagion in the first place than to have had to deal with the damage, especially in the weeks after 9/11.

## Concluding remarks: Principles and leadership

In conclusion, I believe that the lessons learned from the successful economic performance of the Greenspan era are that one should focus on implementation of key principles: price stability should be front and center; the interest rate should rise by more than an increase in inflation; policy should react to the state of the real economy, which is part of a preemption strategy to keep from falling behind the curve, recognizing that there is a great deal of uncertainty about potential GDP; injecting liquidity, and perhaps a cut in the federal funds rate, is needed when there is a liquidity crisis or payments crisis; communicating about future policy contingencies can improve economic performance; monetary policy makers need to diligently and relentlessly cross-check their models and their data; and close contact with central bankers in other countries and work with the international financial institutions is essential for good monetary policy.

Some principles are embodied in policy rules, but others are not. If you do not keep this in mind when you do historical policy evaluation and instead simply focus on the deviations from policy rules as the interesting episodes driven by pure discretion, then you are apt to miss these important principles. Indeed, I was surprised that none of the above principles are in the Blinder-Reis list. The Greenspan notion of risk management is in no way at odds with this view of principles. As Alan Greenspan has said: "In essence, the risk management approach to monetary policy making is an application of Bayesian decisionmaking."

Keeping focused on the goal of price stability is the first and most important principle. There is no tradeoff here: that goal is essential for maintaining long-term sustainable economic growth. Moreover, we have learned that a byproduct of improved price stability is better output stability (as I argued in my 1998 Homer Jones lecture), a finding that first became noticeable after the successful preemptive actions against a rise in inflation during the mid-1990s.

While my comments have focused on monetary policy principles, it is essential to note that in order to implement such principles you need good judgment and leadership. Leadership is needed to take and stick to positions in the face of criticism, to recruit good people, to motivate high-quality work, and to bring people together for a consensus. In these aspects of leadership, Alan Greenspan also deserves very high marks.

Regarding what Blinder and Reis call the "excessive personalization" of monetary policy, to me, it is hard to separate that from good leadership. For example, you cannot separate the Fed's then-controversial position on productivity growth in the late 1990s from Alan Greenspan's personal convictions as a highly skilled and experienced economist. That Alan Greenspan's leadership is grounded in substance has been a huge positive for policy.

Though we are accumulating more and more lessons learned, we always will need personal judgments in monetary policy decision-making. The world will continue to face new types of events where no one will have had all the relevant experience, but even in these cases, perhaps I should say, especially in these cases, principles will help in making the right decisions.

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