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- Fuerst, T. (1992). Liquidity, loanable funds and real activity. *Journal of Monetary Economics*. Forthcoming.
- Lucas, R. E., Jr. (1990). Liquidity and interest rates. *Journal of Economic Theory* 237–264.
- Romer, C. and D. Romer. (1989). Does monetary policy matter? A new test in the spirit of Friedman and Schwartz. *NBER Macroeconomics Annual*, 1989.

## Comment

JOHN B. TAYLOR  
Stanford University and NBER

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Ben Bernanke and Rick Mishkin have put together a useful data base on money growth, targets for money growth, and monetary policy decisions in six different countries during the 1970s and 1980s. The tables, charts, and narrative—based on central bank reports and contemporary commentaries—have great potential to help students of monetary economics and monetary policy sort out macroeconomic events during this period.

An example of this potential is Bernanke and Mishkin's demonstration that money growth accelerated in Japan and Germany in the late 1980s, and that in both countries, attempts to stabilize exchange rates led to this acceleration. This finding deserves careful analysis by those interested in the conduct of monetary policy. According to many macroeconomic theories, these increases in money growth should have brought about an acceleration of inflation and perhaps another boom-bust cycle. In fact, inflation did accelerate in the late 1980s and early 1990s. Hence, exchange rate stabilization in the 1980s could be a cause for the deterioration in macroeconomic performance in Japan and Germany in the early 1990s. A careful analysis of the data could determine whether the timing, magnitudes, and absence of other factors affecting inflation could establish such a causal connection. There are many other examples offering a wealth of interesting research projects.

### 1. *The need for a theoretical framework*

Bernanke and Mishkin, however, do more than simply present the facts. They use their data base to develop *positive* and *normative* "hypotheses." They carefully distinguish between the two types of hypotheses.

The positive hypotheses are verbal descriptions of the empirical regularities that they observe in the time series data and in the central bank records. In general, I have little disagreement with their informal characterizations of the data in these positive hypotheses. I would prefer, however, that they use statistical methods to establish these regularities,

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rather than relying solely on an “eyeball” approach. For example, one of their positive “hypotheses” is that central banks tend to adopt money targeting when inflation increases; in other words, Bernanke and Mishkin argue that there is a time series correlation between the strictness of money targeting—perhaps measured by the size of the deviation between money growth and target—and the inflation rate. If so, one should be able to establish this correlation for each of the countries with time series methods.

The author’s normative hypotheses are more troublesome, in my view. To be sure, Bernanke and Mishkin are cautious in emphasizing that their normative hypotheses are “not to be treated as conclusions,” but rather as “suggestive propositions that are advanced for further discussion, analysis and testing.” Nevertheless, the development of even preliminary hypotheses from raw data requires a theoretical framework—a model that unfortunately the authors do not provide. Without such a model, I must admit I find it difficult to assess the causal connection between their data and their hypotheses, and thereby even discuss the results. I do not mean to say a full-blown econometric model, or even a set of equations, is necessary to establish the plausibility of such a connection. Presumably that would come in later research, perhaps along the lines being pursued at the Brookings Institution multicountry model comparison project. But to establish even a preliminary causal relationship, it is necessary to provide at least a few words on such things as the relationship between money growth, inflation, and real output. By way of comparison, in an earlier case study of monetary policy—the Friedman and Schwartz monetary history, models were used to make the connection between the facts and the policy hypotheses.

Bernanke and Mishkin refer to papers by Poole as well as Kydland and Prescott in their analysis. Yet these two papers use entirely different macroeconomic frameworks—one Keynesian and the other new classical—which have very different implications concerning the relationship between money growth inflation and real output.

## 2. *Definition of policy rules*

Bernanke and Mishkin set the stage for their analysis with a discussion of the rules versus discretion debate. This is a good place to begin, but unfortunately I disagree with their characterization of policy rules and their distinction between rules and discretion. Their definition of a policy rule includes only rules with *fixed* settings, such as a  $k\%$  rule for money growth. They state, e.g., that, “Monetary rules do not allow the monetary authorities to respond to unforeseen circumstances.”

If there is anything we have learned from modern macroeconomic research it is that rules need not entail fixed settings as in constant

money growth rules. Bernanke and Mishkin appear to relegate feedback rules to the discretion class. Perhaps it is because they restrict themselves to such a narrow definition of policy rules that they feel that previous research on policy rules has been cast in “abstract and historical terms.” Many papers, however, have explored the effectiveness of feedback policy rules in practically oriented empirical models fit to historical data. In these papers the monetary authorities do react to unforeseen circumstances. Indeed, the “optimal” policy of Kydland and Prescott or the “rules” solution of Barro and Gordon in the time inconsistency literature can entail adjustment of the instruments in response to unanticipated shocks.

Eliminating contingency rules from consideration makes it difficult for me to interpret their concept of a hybrid policy, later in the paper. Is a hybrid policy simply a feedback rule? Or does it entail discretion in the sense of Kydland and Prescott?

### *3. Discussion of the normative hypotheses*

Bernanke and Mishkin observe that monetary policy has been run differently in the six countries and draw their “normative hypotheses” from these differences. The first hypothesis is that money growth targets are a useful medium term strategy as long as central banks do not “play games.” According to the authors, the countries that have most effectively resisted playing games are Germany and Switzerland, while the worst have been the United States, the United Kingdom, and Canada. Japan is an intermediate case.

Yet in terms of macroeconomic performance—low output variability and low and stable inflation—Japan would be ranked first, not in the middle. By some measures the United States would be ranked better than Germany: The recovery from the 1981–1982 recession was faster, and the inflation rate is currently lower. Hence, even the correlation between central bank policy and macroeconomic performance does not correspond with this first normative hypothesis.

Their second hypothesis is that the central bank should reverse the direction of money growth if it deviates from its target. Put differently, they argue that the central bank should avoid base drift. The only hard evidence in favor of this hypothesis that I could find in the paper is Switzerland, where money growth overshot in the late 1970s and then was offset by negative money growth in the early 1980s. On the other hand, research by Carl Walsh (referred to in the paper) has shown that whether base drift is a good policy depends on the nature of the shocks.

The third normative hypothesis is that central bank operating procedures do not matter much. I take this to mean that as long as the central bank is targeting money, it does not matter whether interest rates or

reserves are used as the means of controlling money. Clearly this conclusion depends on the regulatory environment and the stability of money demand. It cannot hold generally. Moreover, the hypothesis does not apply to monetary policies where money targeting is not essential. Clearly it makes a big difference how responsive the central bank's interest rate targets are to economic conditions. An operating strategy that focuses on interest rates rather than reserves usually leads to slower movement in interest rates.

#### *4. Concluding remarks*

When the editors of this volume asked me to comment on this paper, they suggested that it would be nice if I could draw on my recent experience in Washington to give a policy perspective to Bernanke and Mishkin's technical analysis of monetary policy. Having read the paper and completed my comments, I find the roles of the paper writers and this discussant to be the reverse of the editors' suggestion. The researchers, Bernanke and Mishkin, have written a paper that eschews models and technique, which endeavors to go directly to a policy-making perspective. This discussant, the former policymaker, is crying out for a model and techniques, prior to providing policy suggestions. My experience is that there are far too many policy papers in government that do not pay enough attention to economic models and theory. Policy papers with explicit empirically based theories are still a rare commodity. Perhaps future research can make use of the useful data base Bernanke and Mishkin have assembled to provide the technical analysis that is I feel greatly needed by policymakers.

### *Discussion*

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Bernanke responded to the Comment by John Taylor that the reversal of deviations from monetary targets would be bad policy by noting that monetary targets generally reflect changes in the underlying state of the economy. For example, monetary targets in Germany and Switzerland depend explicitly on predictions of velocity. Reversals of deviations should, of course, take into account changes in the targets. In response to the Comment by Martin Eichenbaum on sample selection bias, Bernanke explained that the sample was chosen simply based on the availability of data in the Federal Reserve Bank's database.

Catherine Mann echoed another concern expressed in the Comment by Martin Eichenbaum that the paper draws conclusions while lacking formality and an underlying theoretical framework. In response, Bernanke and Mishkin each emphasized that the point of their case study