

SETTING A FRAMEWORK FOR MONETARY POLICY

Alan C. Stockman

Eduard Bomhoff's paper is a hands-on attempt to work toward improving policy rules. This kind of research is exceedingly important. I have some quarrels with specific details of Bomhoff's model, his assumptions, and the way he chooses to simulate it, and I will outline my objections here. But I also want to use the general framework behind Bomhoff's research to discuss its implications for the basic question of whether we should try to construct better forecasting models within a discretionary policy regime or try to improve the policy rules.

Bomhoff's paper extends previous work by Robert Barro on the relative merits of money-supply targeting and interest-rate targeting. In particular, he extends the analysis to include sticky prices, an endogenous real interest rate that can be affected by monetary policy, and multiple interest rates (long-term and short-term rates) in the demand for money function (as suggested by the work of Karl Brunner and Allan Meltzer). He incorporates estimates of the sizes of real-life shocks into his model and examines their implications. Bomhoff concludes, in contrast to Barro, that interest-rate targeting raises the variance of forecast errors of inflation above the variance that would be obtained under money-supply targeting. He also finds that the (unconditional) variance of inflation is higher under interest-rate targeting than under money-supply targeting.

Comparing different policy rules and extending models to incorporate realistic features that might affect the conclusions are important. It is also important to evaluate alternative policy rules under a variety of models, since economists disagree about which model is "best."

Cato Journal, Vol. 12, No. 1 (Spring/Summer 1992). Copyright © Cato Institute. All rights reserved.

The author is Professor of Economics at the University of Rochester and a Research Associate of the National Bureau of Economic Research.

I have several specific objections to the analysis in Bomhoff's paper, however.

Objections to Bomhoff's Analysis

First, the model is not complete; it leaves unexplained certain key assumptions. There are two interest rates in the money demand function: a short rate and a long rate. I have no serious objection to this. But the paper assumes that only the short-term interest rate (and not the long rate) responds in the short run to economic disturbances. This is a strange assumption: It is well known that long-term interest rates often change rapidly. In fact, many economists regard it as a puzzle that long-term interest rates do not remain more stable in the short run.¹

It is common in the literature to link short-term rates and long-term rates through some theory of the term structure, such as the expectations theory (or some extension that involves liquidity premia on long rates). Any such theory implies some relation between long-term and short-term interest rates, reflecting arbitrage and speculation in financial markets. Bomhoff assumes that any such relation is broken in the short run by shocks that affect the supply or demand for money. That is the source of the arbitrary term A in equation (5), which Bomhoff assumes moves to equilibrate the money market in the short run. But he does not include a theory of why the relations generated in financial markets between returns on short-term and long-term interest-bearing assets should be affected in this way. One might expect, instead, that the entire term structure of interest rates rises and falls to equilibrate the money market in the short run.² That is, interest rates may adjust to equilibrate the money market, but the relations between various interest rates would be unaffected. Just as we expect short-term interest rates on relatively riskless assets (such as U.S. treasury bills) and more risky assets (such as low-grade commercial paper) to be related by a risk premium that is roughly unaffected by shocks to the money market, so we should also expect interest rates on assets of various terms to be related by term premia that are roughly unaffected by shocks to the money market. How would Bomhoff's results differ if he eliminated his assumption that long-term rates remain constant (so that term premia would remain

¹For example, many studies a few years ago found large responses of long-term rates (as well as short rates) to money-supply announcements.

²That idea would appear to be more consistent with the money-announcement results mentioned in footnote 1.

stable)? I do not know the answer, but it would be worth studying, at least subject to my second objection.

Bomhoff's model assumes that the economy is completely isolated from events in foreign countries. In particular, there are no international financial markets in the model. So there are no connections between home and foreign interest rates. This could be a serious omission, because world financial markets create connections between interest rates in different countries. The links between these rates may not be tight, because there are information and transactions costs of arbitraging these markets. But even loose links create connections between these rates. In particular, the world real interest rate places limits on the size of interest-rate changes in any one country. Those limits are missing from Bomhoff's model.

To some extent, the differential between U.S. and foreign interest rates may change to equilibrate the U.S. money market in the short run (as Bomhoff's model implicitly assumes.) But because world financial markets place limits on arbitrary changes in this differential, one of two other things must happen. Either world interest rates must change to equilibrate the U.S. money market or something else must change to equilibrate that market. (A third alternative is that nothing equates the money market in the short run; disturbances to supply or demand in that market leave people with more or less real money than they would like to hold for a short period of time.) If world (and U.S.) interest rates change to equilibrate the U.S. money market, then they also change to help equilibrate money markets in other countries as well. Interest rates in all countries would then respond to world money-market conditions rather than conditions only in the United States. This would suggest an entirely different model than the one Bomhoff analyzes in his paper. It also raises a number of questions that economists have not yet satisfactorily answered. For instance, to what extent do money supply (or demand) changes in any one country affect the short-run differential between interest rates in that country and interest rates in other countries? Why do investors in world financial markets not arbitrage away any short-term changes in interest-rate differentials (adjusted for exchange-rate changes, of course) across countries? Can the Fed affect the world real interest rate? There has been a large literature on these questions, but existing studies have not yet produced reliable answers.

My third objection is related to the objective function that Bomhoff considers in conjunction with his assumption of sticky prices. In a world of sticky prices, monetary policy can have real effects on the economy—on real output and employment as well as on real interest

rates. Since Bomhoff holds that the price level is sticky, we should care about the level of real output (and perhaps its variance) relative to the natural level of output, and not just inflation (or its variance) and nominal interest rates. It would be surprising if political forces led central banks to ignore the real output effects of their policies in such a world. And there is much evidence from real life that central banks pay considerable attention to what they regard as the real output effects of their policies (whether these effects are real or imaginary), particularly in countries with lower degrees of "independence" of central banks from the political process.³

Fourth, it is not clear that it makes sense to use the unconditional variance of the price level to evaluate policy. If a policy makes the price level nonstationary, then the variance of the price level does not exist. For this reason, Bomhoff uses the variance of the inflation rate (the rate of change of the price level). Now consider two policies. Policy A creates a stable long-run price level, so that any increase in the price level is eventually followed by a decrease (in technical terms, the price level is $I(0)$), but with some erratic short-run movements in prices. Now consider policy B, which produces a long-run inflation rate of 10 percent per year (the price level is $I(1)$), but which is very stable over time. If we compare the (conditional or unconditional) variance of the inflation rate or its predictability, we might find that the variance is lower under policy B. But is policy B better than policy A? Not necessarily: It seems quite reasonable to me to prefer policy A. Policy A allows people to sign long-term contracts in nominal terms that more closely approximate real contracts, because there is no long-run price-level drift. Fixed-rate mortgages under policy A would create inflation-adjusted mortgage payments that tend to remain flat over time; policy B would make inflation-adjusted payments start high and decline over time. So policy A has some clear advantages over policy B, but Bomhoff's criteria might favor policy B.

The key question is why we want "stable money," and exactly what we mean by that term. It could mean a stable level of prices, a stable inflation rate, or a stable expected inflation rate (but with forecast errors creating nonstationarity in the price level). Or perhaps it is a code for stable real GNP or other things. The answer is important because it affects the way economists should evaluate alternative

³As a related matter, Bomhoff does not consider the possibility of a policy of targeting a price level. Yet, with his criterion, such a policy would be a natural thing for the central bank to try to do. Below, I will discuss the merits of a target zone for the price level, which is a modified version of price-level targeting.

monetary rules and alternative monetary institutions. Arbitrary measures such as variances of inflation or forecast errors, and other similar measures, may tell us little about the benefits and costs of alternative monetary rules. And they may shed little light on the debate between proponents of rules and proponents of better discretionary policies.

Rules versus Discretion

While studies like Bomhoff's can contribute to our understanding of the effects of various monetary rules, there are always economists and policymakers who advance serious arguments in favor of discretionary policy. (By serious arguments, I mean arguments that we should take seriously.) The key argument for discretion is this: No rule can cover all unforeseen events and complications. Discretion is not perfect, but it can respond to surprises and complications.

It might actually be true that a policymaker with some discretion can do better than the monetary rules that economists have proposed, just as economic forecasters can often do better by adding discretionary "fudge factors" (based on their nonquantifiable judgments) to their formal statistical forecasts. Unfortunately, the debate on rules versus discretion often gets reduced to a debate in which one side favors rules without discretion and the other side favors discretion without rules.⁴

Most participants in these debates have missed the important point: The case for rules does not rest on the notion (though it may be true) that discretion is worse than rules. Rather, the case for rules rests on the inability of discretionary policymakers to keep things from getting out of hand.⁵ Imagine a dog in a yard. It may be wise to give the dog some discretion on where to walk or run, so some discretion may be the best institutional arrangement. But if the dog is without a leash, he may run into the street and get killed. (The dog may lack an ability to commit himself not to go in the street in the face of some overwhelming temptation.) So although some discretion is good, a rule (a leash) is also good if the rule (leash) prevents the dog's running from getting out of hand (into the street).

The case for a rule is like the case for a leash. A leash does not prevent discretion; it merely limits discretion. It keeps the results

⁴It is sometimes said that in a complicated world, it is too hard to conduct good discretionary policy. But this issue cuts both ways—it is also harder to formulate good monetary rules. If the economy is subject to a great deal of uncertainty, there may be more times when simple rules limit policy in undesirable ways.

⁵There is also a well-known case for rules based on allowing policymakers to commit to future courses of action. The ability to commit expands the set of available options for policy, which can lead to better results.

of discretion from getting out of hand. The case for a commodity money, for example, is not that it produces optimal results in every situation, but that a commodity money prevents inflation from getting out of hand through political abuse of the supply of fiat money.

A Target Zone for the Price Level

In recent discussions of open-economy macroeconomic policy, there has been much discussion of "target zones" for exchange rates.⁶ Whatever the merits of those proposals, there is an important lesson that applies here: A "target zone" for the price level can combine the most important elements of discretion with the most important elements of rules.

A target zone for the price level would include two parts: (1) upper and lower bounds for the price level and (2) a rule that goes into effect if the price level ever exceeds those bounds, and forces the central bank to follow policies that return the price level to the bounds over some period of time in that case.⁷ The target zone is like a leash—it allows the central bank to use discretionary policies *as long as those policies do not allow inflation to get out of hand*, in the sense that the price level does not deviate too far from its target value. In this way, a target zone for the price level combines the most important benefits of discretion with the most important benefits of rules. A fixed target zone for the price level would create zero inflation in the long run (along with low nominal interest rates and the stability of long-run nominal planning) with the policy flexibility of discretion. If the central bank allows the price level to rise above the upper bound, the rule requires the central bank to follow a policy that slowly but surely guarantees that the price level will return to that target zone (perhaps within a couple of years, depending on the details of the proposal).

With the combination of rules and discretion afforded by a target zone for the price level, economists would want to continue the debate on the relative merits of discretionary policy within the target zone or further rules to restrict policy within that zone. Then the two rules that Bomhoff discusses—money-supply targeting and interest-rate targeting—could be evaluated within a framework in which the long-run inflation rate is zero with either policy. By adopting a target zone for the price level, we can fulfill the most important objectives of rules without taking a stand on the benefits or costs of short-

⁶I am not a fan of most target-zone proposals, but the application discussed below is somewhat different.

⁷For an example of this rule, see Gavin and Stockman (1992).

run stabilization policies, money-supply targeting, or interest-rate targeting. We can achieve the main goals sought by advocates on each side of the debate.

Reference

Gavin, William, and Stockman, Alan C. "A Price Objective for Monetary Policy." Federal Reserve Bank of Cleveland *Economic Commentary*, 1 April 1992.

MAKING MONETARY POLICY

Robert L. Hetzel

This paper describes the procedures the Federal Open Market Committee (FOMC) of the Federal Reserve System follows in formulating monetary policy. It then examines Fed policy actions over the period 1986 through summer 1990. The rate smoothing and monetary deceleration that have preceded past recessions preceded the 1990 recession.

FOMC Procedures

Objectives

The FOMC employs judgmental procedures in formulating monetary policy. That is, the FOMC does not make use of an analytical framework for decisionmaking whereby it specifies explicit objectives and an explicit strategy for ensuring that each meeting's policy actions are consistent with achieving its objectives. This paper constructs an analytical model of the FOMC's judgmental procedures. Such a description must make inferences about the objectives that matter to the FOMC and about the model that expresses the FOMC's view of the links between those objectives and its policy actions.

Statements by the FOMC consistently mention qualitative objectives for inflation and real growth. The FOMC would like "sustainable" real growth and it would like to "make progress" in moving toward price stability. Such statements are usually uninformative about the relative emphasis the FOMC places on achieving each objective. For example, when the FOMC emphasizes reducing inflation, it is not explicit about the acceptable behavior of real growth.

Cato Journal, Vol. 12, No. 1 (Spring/Summer 1992). Copyright © Cato Institute. All rights reserved.

The author is Vice President and Economist at the Federal Reserve Bank of Richmond. The ideas in the paper are solely those of the author and are not to be associated with the Federal Reserve Bank of Richmond or the Federal Reserve System. Helpful comments by Thomas Mayer and Bennett McCallum are gratefully acknowledged.