

# Preface

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The chapters in this book were prepared and presented to help inform an important review of monetary policy undertaken by the Federal Reserve in 2019. Like the Fed's review, the book focuses on the evaluation of strategies, tools, and communication practices for monetary policy. The chapters address two related questions that are central to an evaluation of policy. First, can a given strategy be improved upon, for example, by altering the degree of data dependence, by reconsidering monetary tools or instruments, or by changing communications about the strategy? Second, how robust are different policy strategies? The aim of the conference and this book is to present the latest research developments and debate these crucial policy questions. It is meant to be an integral component of the monetary policy review, and of the academic and policy community's ongoing evaluation of this review and its underlying strategic issues.

The results went well beyond our expectations. The formal presentations were original and insightful. The market symposium and policy symposium were exciting, with many novel points and suggestions. And the discussions—all recorded and transcribed here—by academic researchers, market participants, members of the media, and monetary policy makers covered much new ground. All of this, in our view, adds greatly to the review of policy that the Federal Reserve began. We are also confident that the results will be useful and relevant to a similar review by the European Central

Bank, which is now currently under way, and to broader understanding of how monetary policy should be conducted.

The leadoff chapter is by Richard Clarida, vice chair of the Federal Reserve Board. He considers the impact of models and markets on the strategy of monetary policy, emphasizing the key question of data dependence. “Data dependence” states that monetary policy should react to economic events as they come along rather than follow a preannounced track, but it should react in a predictable way. Data dependence needs to be clear about what data to respond to and what reaction depends on it, or it can appear to be whimsical and introduce uncertainty into the economy.

Clarida argues that there are two forms of data dependence. The first describes how the instruments of monetary policy should react to the numerical difference between actual economic outcomes and target outcomes for inflation or unemployment. This is a normal rule-like question, and getting the right sign and size of response is essential. That the interest rate should react by more than one to one with the inflation rate is an example of rightsizing mentioned by Clarida.

The second type of data dependence considered by Clarida involves measurement of the key benchmarks in the policy rule: the equilibrium rate of interest and potential GDP, or the natural rate of unemployment. The rule in the first type of data dependence states that the deviation of the interest rate from the natural rate should react to the deviation of GDP from potential, or the deviation of the unemployment rate from the natural rate. One needs to measure those benchmarks as well as the actual unemployment and inflation rates in order to properly set monetary policy. In recent years, empirical research has suggested that both the equilibrium interest rate and the natural rate of unemployment should be adjusted down. That research has also shown, however, just how difficult it is to define and measure these quantities

Clarida emphasizes that both types of data dependence are part of rules-based monetary policy, not a reason to abandon strategies for monetary policy. Clarida does not argue for altering the degree of data dependence, but rather for making it more accurate and embedding it into a rules-based framework. The more accurate and precise is the dependence of policy on data, better the policy strategy will be.

The second chapter is also about data dependence and policy strategy. Here Andrew Lilley and Ken Rogoff make the case, as their title has it, for implementing effective negative interest rate policy. When one plugs real-world inflation or output data into policy rules for the interest rate, one sometimes finds that the rules prescribe negative interest rates. Lilley and Rogoff argue that negative interest rates are no reason to hold the rate at zero or above.

They consider regulatory changes that would allow the interest rate to go more easily to -2 or -3 percent, including steps to stop people from holding large amounts of cash, which pays a better rate, at 0 percent, and potentially undermines negative interest rate policies. They recognize, however, that regulatory lags and other resistance might prevent this change, and thus consider alternatives to negative interest rates, such as quantitative easing (QE) to drive down longer-term interest rates, helicopter money, forward guidance, and a higher inflation target. This part of the paper presents a valuable and balanced summary of the pros and cons of such “unconventional” monetary policies. The authors point out, however, that recent research indicates that quantitative easing may have had little or no effect in the United States, at least outside of the normal lender-of-last-resort role of the central bank and beyond its effect as a signal of how long the Fed is likely to keep interest rates at zero.

Lilley and Rogoff then go on to consider removing the zero or effective lower bound constraint, stating that the “elegant and effective tool to restore monetary policy effectiveness at the zero bound would be unconstrained negative interest rate policy, assuming

all necessary legal, institutional, and regulatory changes were first instituted.” But they stress that “no country yet has taken the steps necessary to have the kind of deeply negative rates we are discussing here (say, minus 2 percent or more).” The discussion of possible regulatory changes is insightful and valuable, as is their discussion of layering and their response to critics of negative rates, including Monika Piazzesi later in this book. Anyone interested in the zero or effective lower bound on the interest rate—which is anyone interested in monetary policy—should read and consider this chapter carefully.

In his commentary on Lilley and Rogoff, Andrew Levin agrees that “QE and other unconventional monetary policy tools are complex, opaque, and ineffectual,” and he therefore proceeds to argue that reform is needed. He proposes a more extensive use of digital cash, drawing on his work with Michael Bordo, to allow negative interest rates to be used more widely.

Chapter 3 also deals with the lower bound on interest rates. Entitled “Tying Down the Anchor: Monetary Policy Rules and the Lower Bound on Interest Rates,” its authors, Thomas Mertens, of the San Francisco Fed, and John Williams, president of the New York Fed, use an econometric model to evaluate alternative policy rule and find the one that works best.

Mertens and Williams consider three types of monetary policy rules: (1) a standard inflation-targeting interest rate rule in which the Fed reduces its response to higher inflation and output, in order to bias the economy toward higher interest rates and inflation and thereby reduce the probability of hitting the lower bond; (2) a rule in which the average inflation target is higher than with standard inflation targeting, though the strength of responses to deviations is unchanged; and (3) price-level targeting rules, in which the Fed allows substantial inflation after a low-inflation episode, until the price level recovers to its target, and vice versa. A variant of rule (2) has a similar flavor. It is an interest rate rule that “makes up

for past missed stimulus due to the lower bound” by allowing the central bank to condition its interest on the sum of past shortfalls in interest rate cuts, as identified in earlier work by Reifschneider and Williams.

They show, by simulating the policy rules in the model, that the price-level targeting rule and the Reifschneider-Williams make-up-for-shortfalls rule work best among the alternatives. They conclude by noting that “further work is needed to evaluate their robustness by analyzing them within different economic models.” They also recommend quantitative assessment of the policy with an estimated larger-scale model.

In Chapter 4, Jim Hamilton offers “Perspectives on US Monetary Policy Tools and Instruments,” which points out that quantitative easing does not seem to have affected interest rates and the economy. This finding supports statements by Lilley and Rogoff and by Levin summarized above, and also comments by Peter Fisher in this book.

Hamilton presents empirical evidence in time-series charts that the longer-term interest rate rises during periods when the Federal Reserve is engaged in large-scale purchases of domestic bonds, rather than declining as the Fed expected. See especially Hamilton’s figure 4.2. This finding suggests that other Fed research—presented for example at the Chicago Fed review conference—should focus on explaining this reverse impact. The policy impact of quantitative easing on long-term interest rates is a key part of the Fed’s review, and a key part of its contingency plan for a future zero bound episode.

With Volker Wieland, we contribute chapter 5, which focuses on the robustness of current policy. The chapter compares the interest rate prescriptions that result from the rules published since 2017 by the Fed in its semiannual *Monetary Policy Report* with the actual path of the federal funds rate. These rules include the Taylor rule, a “balanced-approach” rule, a difference rule that responds to growth rather than levels of inflation and unemployment, and two rules

that take particular account of periods with near-zero federal funds rates by implementing a forward-guidance promise to make up for zero bound periods with looser subsequent policy. The chapter evaluates these monetary policy rules in seven well-known macroeconomic models—a small New Keynesian model, a small Old Keynesian model, a larger policy-oriented model, and four other models from the Macro Model Data Base. We regard robustness across models as an essential part of the evaluation process.

The chapter reports that departures—a measure of discretion—from all the rules reported by the Fed were small in most of the 1980s and 1990s, a period of relatively good macroeconomic performance. However, such discretion began to grow again in the early 2000s, though not as large as in the 1970s, and this discretion amplified prior to the 2007–09 recession.

The chapter shows that the rules in the Fed's *Report* work well. However, some are not very robust. The first difference rule does very well in forward-looking New Keynesian models but very poorly in backward-looking Old Keynesian models. The chapter also shows that many of the Fed's reported rules are close to the inflation-output volatility curve of optimal rules. Any rule may be better than no rule.

In commenting in the chapter, David Papell notes that, in general, deviations from rules are very large in poor performance periods and very low during periods with good performance. He also shows the importance of robustness by demonstrating how results from different models are much different from one another.

An important tradition of the monetary policy conferences held at the Hoover Institution in recent years has been the inclusion of market participants and policy makers into the debates and discussions. In keeping this tradition, this book contains two fascinating symposia along these lines.

The first symposium is on the interaction of markets and policy. It brings market participants directly into the discussion, including

Mickey Levy, Scott Miner, and Laurie Hodrick, with an overview and introduction by George Shultz. The key issue addressed by all three presenters is that policy makers must take the interaction of markets and policy strategies into account when designing monetary strategies. As Hodrick puts it: “The interaction of markets and policy is actually a full circle. Not only are firm valuations affected by Fed policy . . . but the Fed also interprets data from the economy, including stock market price levels, as additional noisy signals with which to set its policy.” Levy and Miner offer suggestions for improvement that, in our view, would improve policy outcomes and should be seriously considered by the Fed. As Levy recommends, “The Fed must take the lead to break its negative self-reinforcing relationship with financial markets by taking steps to rein in its activist fine-tuning of the economy and focus on a strategy for achieving its dual mandate.” Miner argues that the Fed should “allow more volatility in short-term rates through revised open market operations policy or setting a wider fed funds target range. This would allow short-term rates to more accurately reflect changes in the market demand for credit and reserves.”

The second symposium is on monetary strategies in practice. It brings Fed policy makers into the discussion, including Jim Bullard, Mary Daly, Robert Kaplan, and Loretta Mester, with Charles Plosser as the chair.

Bullard presents a new overlapping generations model and shows how a policy rule of nominal GDP targeting is optimal. Nominal GDP targeting is similar to price-level targeting, in that it follows a period of less inflation with a period of inflation above target, and expectations of that future inflation may help to stimulate the economy during any current recession. In this logic, it is a new rationale for an old approach to policy, but one that still gets much attention. Daly addresses the lower bound on interest rates, as do Mertens and Williams, and concludes, after carefully considering alternatives, that “average inflation targeting [is] an attractive option.”

Kaplan considers the main reasons that inflation has been below the Fed's inflation target of two, and he draws the implication that "we don't want inflation to run persistently below or above our 2 percent target. Sustained deviations from our inflation target could increase the likelihood that inflation expectations begin to drift or become unanchored."

Mester addresses the broadest aspects of the Fed's review of its framework and concludes that "effective communication will be an essential component of the framework. I believe there are ways we can enhance our communications about our policy approach that would make any framework more effective." She has several suggestions; the first, which seems particularly important, is that "simple monetary policy rules can play a more prominent role in our policy deliberations and communications. . . . The Board of Governors has begun to include a discussion of rules as benchmarks in the *Monetary Policy Report*. . . . This suggests that systematic policy making is garnering more support." In many ways, this recommendation and assessment, which concludes the policy panel and the whole conference, highlights the theme of this book *Strategies of Monetary Policy*.