

**Introduction to Frameworks for Central Banking in the Next Century**  
A Special Issue of the *Journal of Economic Dynamics and Control*

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The conference upon which this volume is based was held at the Hoover Institution at Stanford University on May 29 and 30, 2014, in conjunction with the 100<sup>th</sup> anniversary of the founding of the Federal Reserve. (See Table of Contents of the volume below). The original idea for such a conference came out of discussions we had with Lee Ohanian, John Cochrane, Steven Davis and Charles Calomiris. After reviewing other Centennial conferences that had been held, or were being planned, at the Fed or other organizations such as the National Bureau of Economic Research, we concluded that a conference focused on the need for clearly-understood rules for central banks—including legal limits, institutional structures, mandates, traditions, procedures, or formulas—and not solely on discretion would fill an important gap, especially if it focused on policy recommendations and was based on data, theory and history of the past 100 years.

The resulting conference—as reflected in the papers, discussions, panelists’ remarks and comments from the floor—indeed filled that gap. The experienced researchers and policy makers offered many original contributions and insights which, in our view, will be influencing policy and research for many decades to come.

This special issue of the *Journal of Economic Dynamics and Control* consists of

- formal papers prepared in advance and revised after the conference,
- written discussions of each of these papers
- written remarks by speakers and panelists at the conference on policy and history.

We organized the papers and discussions in a logical order and we have interspersed the discussions between the papers, followed by all the individual panelist's remarks. The discussants and panelists went well beyond commenting on the prepared papers, and the individual titles on these shorter contributions demonstrate this.

As a general matter, the findings are consistent with, and would encourage, a more rules-based policy for the Federal Reserve. As a result they would, as many of the papers argue, improve economic performance in the United States and the global economy. Here is a quick summary of some of the specific findings.

David Papell's paper with Alex Nikolsko-Rzhevskyy and Ruxandra Prodan is a natural leadoff to the special issue. It gives a rigorous statistical foundation for the overall theme of the conference. The paper uses a battery of statistical techniques to determine when in history monetary policy was rule-like, and it shows that the rule-like periods coincide remarkably well with periods of good economic performance. A clear policy recommendation emerges directly from these statistical findings: use rules-based monetary policy whenever you can.

Monika Piazzesi's paper comments on Nikolsko-Rzhevskyy, Papell, and Prodan. While it basically agrees with NPP, it argues that the paper does not answer the question about whether policy rules need to be modified in financial crises. Piazzesi's paper contrasts and compares several different ways to modify policy rules, including some that have recently been proposed. It shows that the correct adjustment ultimately depends on how banks adjust to balance sheet shocks, for which much research and modelling is needed. By raising novel questions about the policy relevance of the NPP paper, the paper also makes a contribution to the large empirical literature on policy rules.

Richard Clarida considers open economy issues. He shows that policy rules work quite well in an international setting, and lead to a smooth operating global monetary system with small spillovers. He also argues that a policy rule framework will re-emerge as the preferred de facto if not de jure construct for conducting, evaluating, and ultimately for communicating monetary policy. Here his use of the word de jure is important for it suggests that some legislation may be needed to bring these reforms about and keep them in place.

Maurice Obstfeld's paper is primarily a discussion of the paper by Clarida, but it takes on the use of open economy new Keynesian models more generally. While sympathetic in principle with such models it criticizes a number of assumptions including the Calvo model's approach to wage and price stickiness and the absence of international and domestic shocks. The assumption of divine coincidence is particularly criticized. By candidly and clearly pointing out problems with the modeling approach, the paper provides a useful guide to future research.

Lee Ohanian puts monetary policy rules in the context of big real economic shocks that are caused in large part by other economic policies—a situation which many have argued characterizes the economic situation today. His focus is upon the unstable interwar period. He finds that discretionary Fed policy responses to the major shocks of the 1930s have, in some cases, negatively impacted the economy. Also timely is his warning that overestimating the risks of deflation can lead monetary policy astray.

Martin Schneider examines the role of inflation shocks in a world where markets are incomplete and frictional. This allows for redistribution effects within sectors. Within the household sector redistribution between borrowers and lenders can affect consumption, savings and welfare. Within the firm sector, changes in the price level can affect total factor productivity and labor wedge movements.

Andrew Levin considers communication about policy rules. He recommends that a good communications strategy for systematic monetary should recognize that the reference policy rule may change over time. He usefully focuses on the possibility of a change in the terminal or equilibrium federal funds rate, such as a decline from four percent, close to what is now assumed by most FOMC members, to a lower percent as suggested for example by Richard Clarida.

Otmar Issing, former chief economist of the European Central bank, in discussing Levin's paper reflects on the development of the communications strategy of the ECB. The ECB, established in 1999, quickly developed state of the art communications policy that gave it the transparency to follow its rule-like low inflation goal.

In his paper on the case for using interest rates on reserves as its key policy instrument to return the Fed to more rule-like policy, John Cochrane recommends three things: first that the short-term interest rate should be in the future determined by setting the interest rate on reserves; second, that the rate should be adjusted according to a policy rule; and third, that the resulting large reserve balances at the Fed should not be used for discretionary interventionist policies, such as quantitative easing, which he argues have done little good. Political economy considerations render the third point hard to achieve in practice.

Edward Prescott, in his comment on Cochrane's paper, supports paying a small amount of interest on bank reserves. He also supports making the Fed's interest rate policy more rule-like. Also, to reduce financial instability, he advocates separating commercial banking from investment banking by creating a system of 100% reserve backed narrow commercial banking as once advocated by Milton Friedman.

Marvin Goodfriend's historical review of the Fed's first century and the interaction between monetary policy and credit policy leads him to recommend a new "Fed-Treasury Credit

Accord” which would have a “Treasuries only” asset acquisition policy with exceptions only in the case of well-specified lender of last resort actions. This would deal with the recurrent mission creep problem where a limited purpose institution takes on other actions for which it was not granted independence.

Athanasios Orphanides agrees with Goodfriend that the Fed needs rules and boundaries to avoid discretionary actions. Also he posits that the Fed should avoid using credit policy. However he raises the issue of the difficulty during a financial crisis of interpreting the legal boundaries of action and ensuring that rules and boundaries are respected. The example of the misuse of credit policy during the Cypriot banking crisis in 2013 makes his case.

Michael Bordo’s key policy recommendations nicely dovetail with Marvin Goodfriend’s. He recommends, based on an examination of the history of lender of last resort policy at the Fed, that, in order to prevent and deal with crises, the central bank needs to lay out and to announce in advance a systematic rule for its lender of last resort actions, linking his policy recommendation to what has worked and what has not worked in practice.

Jeffrey Lacker’s paper is largely a discussion of the paper by Michael Bordo, and it usefully builds on Bordo’s findings. A major point of the paper is to propose a way to distinguish between monetary policy and credit policy, based on whether or not the size of the Fed’s stock of high powered money changes. The paper shows why central bank involvement in credit allocation should be avoided. The paper draws on the experience in the recent crisis and longer Fed and central banking history.

The next five contributions—from Esther George and a policy panel consisting of George Shultz, Charles Plosser, Thomas Sargent and John Williams—focus on how one takes rules- based policy from theory to practice.

Esther George's contribution makes three important points relevant to the practical use of policy rules. First, it argues that promoting financial stability requires combining "macro" prudential rules or strategies with the judgment that comes from the "micro" examination of individual financial firms. Second, it stresses the role of well-trained experienced examiners in forming this judgment. Third, it argues that in designing monetary policy rules economists need to take better account of how interest rate policy affects risk taking.

George Shultz presents some fascinating practical insights based on his long experience in government service of the importance of following a rule-like framework. He cites the example of not bailing out the Penn Central railroad in 1970, the pitfalls of adopting wage price guidelines in the 1970s and the success of Paul Volcker's anti-inflation policy in 1979.

Charles Plosser's paper is based on his policy experience of recent years. It proposes changes in how central banks use policy rules in practice. Rather than simply report the results of the rules internally, the Fed should report various policy rules it is considering and show the impacts of these rules with models. The proposal is novel and will generate much useful research and discussion

Thomas Sargent's paper surveys the literature on policy rule proposals, including two rules proposed by Milton Friedman, an interest rate rule proposed by Taylor, and a free banking rule proposed by Becker as an alternative to a 100% reserve requirement rule. It shows how rules that are used in practice—including lender of last resort rules—actually evolve over time from practical experience, with normative proposals playing a role, but not necessarily the dominant role. The paper thereby covers new ground and will stimulate new thinking on monetary policy research.

John Williams's paper draws on both policy experiences and research contributions. It shows that the policy rule approach to monetary policy has made major inroads into policy decisions at the Fed over the years, even including certain of the unconventional policies of recent years.

The final three papers in the special issue were part of a panel on The Methodology of Economic History for Evaluating Monetary Policy. Barry Eichengreen makes the case for the importance of economic history in understanding and evaluating monetary policy actions in times of crisis. Based on his research on the interwar period he underscores the importance of context, politics and institutions in explaining the disastrous policy mistakes that were made.

Niall Ferguson presents several famous examples from monetary history where central banks opted for discretion over rules. He argues that much of Walter Bagehot's criticism of the Bank of England in the nineteenth century was for not following the correct discretionary policies, that Fed Chairman Martin followed discretionary monetary and credit policy in the 1950s and 1960s, and that the recent discretionary expansion of the Fed's balance sheet has considerable resonance to the 1940s.

In the final contribution of the volume, Allan Meltzer surveys the history of Federal Reserve independence from the fiscal authorities. In its early years the Fed had considerable independence within the context of the gold standard rule, but by the 1930s and 40s became totally dependent on the Treasury. A return to 'independence within the government' in the 1950s gave way to monetization of fiscal deficits in the 1970s. With Paul Volcker and Alan Greenspan the Fed regained its independence and followed rule-like behavior. Fed independence from the fiscal authorities lapsed in the Great Recession, and the Fed since departed from rule-like behavior. As with the lead article by Nikolsko-Rzhevskyy, Papell, and Prodan and many of

the other contributions in this volume, the clear policy implication of this concluding piece is to return to rules-based monetary policy in the future.

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