

Monetary Policy: From There to Here to Where?

Mark Sniderman

Drawing from his long experience participating in the policymaking process at the Federal Reserve, chief policy officer Mark Sniderman shares his views on how the Federal Reserve's framework for conducting monetary policy has evolved over the past decade. He explains how changes in economic theory have helped shaped this new framework and how lessons learned from the Great Depression and Japan's recent struggle with deflation have contributed. This *Commentary* is based on a speech delivered at the Global Interdependence Conference, Tokyo, Japan, on December 4, 2012.

The Federal Reserve's framework for conducting monetary policy has evolved significantly during the past decade. Its evolution has been strongly influenced by developments in economic theory, lessons from the Great Depression, and ongoing economic challenges in Japan. Although much has been written about the Federal Reserve's use of unconventional monetary policy in response to the global financial crisis, I would suggest that this response is a very natural progression in applying economic knowledge and experience. Basing unconventional policies on knowledge and experience does not, of course, guarantee unqualified success, but it should provide a high degree of confidence in the Federal Reserve's approach to policy over the past few years.

I will elaborate on this perspective in this *Commentary* and conclude with some thoughts about the potential costs and risks associated with U.S. monetary policy.

Insights from Rational Expectations Theory

I'll begin with a quick review of how economic thinking has evolved over the past few decades. By necessity, this review will be highly selective, focusing on the developments that I regard as the most important for conducting monetary policy, and will concentrate on what economists call *rational expectations*.

That phrase is just a shorthand way of saying that the behavior of people and businesses inside our economic models must accord with the way the economy actually performs. For example, people cannot be modeled as systematically underestimating the inflation rate that the model generates; they know how the real economy actually works and cannot be persistently fooled.

The rational expectations revolution in economics took shape in academic circles in the 1970s, but had not yet affected the development and implementation of economic policy, including monetary policy. In those days, we didn't fully appreciate that our models rested on several flawed principles and that we were not characterizing monetary policy in a very satisfactory way. One major flaw was that models typically generated inflation expectations that were inconsistent with other equations specifying how economic actors behaved.

Another flaw was in the use of policy models. Nobel laureate Robert Lucas demonstrated that economic models estimated under one policy regime could not be relied on to provide accurate predictions about the economy if policymakers were to behave differently in the future than they did during the past. That meant that we should not rely on such models to assess how the economy would perform if the strategy driving monetary policy were to change.



Third, we did not realize the usefulness of defining monetary policy as a rule for systematically adjusting a variable under the central bank's control—for example, the federal funds rate or the monetary base—in response to the economy's movements away from desired outcomes, such as full employment and price stability.^{1,2} We did not fully appreciate that the public would be formulating its own “rule” of central-bank behavior and acting accordingly. The seminal work of Nobel laureates Finn Kydland and Edward Prescott spawned a literature that taught policymakers how to use rules as “commitment devices” for implementing policy strategies that would be durably optimal through time.

Clearly, monetary policy as practiced had failed to stabilize inflation and inflation expectations. The rational expectations revolution attracted policymakers' attention because it showed promise in solving a problem that the reigning framework could not—namely, that inflation had been accelerating for nearly a decade and was undermining the real economy's performance.

The rational expectations literature developed quickly during the 1980s, but it took some time for its insights to change the way the Federal Reserve and other central banks thought about designing and implementing monetary policy.³ Let's face it: “Conventional wisdom” becomes conventional because it usually produces acceptable results. For decades, central bankers had thought that monetary policy was most effective when the public was only dimly aware of the strategies being used. Montagu Norman, the secretive governor of the Bank of England in the 1920s, is famously quoted as saying, “Never explain, never apologize.”

In the United States, the Federal Open Market Committee, known as the FOMC, did not begin to issue statements after some meetings until 1994, and did not issue them after every meeting until 1999. Needless to say, the conversion to a new monetary policy framework took a while; new ideas were debated, evaluated, and modified to fit into a consistent framework that could satisfy both theorists and practitioners. Today, these insights are taken for granted as the stock-in-trade of working economists.

So how have these and other advances in economic thought transformed central banking? Today, monetary policy is understood to be more than decisions, made at individual policy meetings, to adjust the short-term interest rate. Instead, it is thought of as a forward-looking endeavor. We recognize that businesses and consumers make decisions based partly on their expectations of how the central bank will behave. They will form expectations of our goals and how we are likely to respond to future economic and financial conditions. These expectations become embodied in the prices of all financial assets. Consequently, the term structure of interest rates reflects the public's expectation of the entire sequence of short-term policy rate decisions.

Transparency is important in a democracy, not only for its own sake, but also because it leads to better economic outcomes. Drawing on insights from rational expectations,

central banks now recognize that the public can make wasteful economic decisions if it must constantly guess how the central bank will respond to changing circumstances. Fundamentally, if people do not trust their central bank to make good decisions, they will act to protect themselves from what they perceive to be those decisions' harmful effects.

Today, best practices in central banking require policymakers to be explicit about their objectives and to gain the credibility necessary to achieve them. To be credible, central banks must have objectives that can feasibly be achieved through time; they must have policy tools that can get the job done; and they must provide the public with the information it needs to understand how the central bank is likely to respond to evolving conditions. Central bankers have learned that as awkward as it might be on occasion, transparency—not secrecy—is their friend over the longer term.

Let me emphasize this point in another way: Central banks realize that an important part of their business is to manage the public's expectations about monetary policy. If central banks can consistently deliver what they promise, they will build credibility that is highly useful in challenging times—for example, when they must deviate from past practices to accomplish their objectives.

Rational expectations theory developed at a time when the United States was grappling with high inflation. Policies that were “supposed” to work did not, which created a climate that was receptive to innovation. However, there have also been deflationary periods that proved to be fertile ground for monetary policy innovation. Consider the U.S. experience during the Great Depression as well as the more recent experience in Japan, which has been experiencing subpar growth and mild deflation.

Lessons from the Great Depression and Japan

The Great Depression was a global event that still fascinates economists some 75 years later. Remarkable as it may seem, economists still disagree about what caused it. Fortunately, there is considerably more agreement about some of the forces that transmitted and amplified the original tremors, turning them into an economic earthquake.

Misguided monetary policy ranks high on the list. Milton Friedman's research led him to conclude that the Federal Reserve transformed what would otherwise have been an ordinary recession into a depression by allowing the money supply to decline by one-third between 1929 and 1933. Other researchers contend that the Fed compounded its initial failure through benign neglect for more than a decade, beginning in 1932.⁴ Its mistake, say the economic historians, was the false belief that monetary policy becomes completely ineffective once short-term interest rates fall to zero.

Many lessons have been drawn from the Great Depression. In a speech two years ago, Federal Reserve Board Chairman Ben Bernanke discussed several that he had taken to heart, one of which I want to highlight today.⁵ Chairman Bernanke stressed that policymakers must respond to

severe financial crises forcefully, creatively, and decisively. He noted that early in the Great Depression, policymakers essentially failed to respond to the failing economy at all. As he put it, “They were insufficiently willing to challenge the orthodoxies of their day.” He noted that Franklin Roosevelt, defying the conventional economic wisdom of his day, decided to take the United States off the gold standard. That decision allowed the dollar to depreciate and thus helped to increase production and end deflation. The big takeaway here is that monetary policy need not be powerless just because the short-term interest rate is near zero.

Academic research conducted since the Great Depression has coalesced into a more general framework for explaining how central banks can offset recessionary and deflationary pressures when short-term interest rates approach zero. One strategy would be to convince the public that these rates would remain low for a considerable period; for example, until deflationary pressures lessened. Another strategy would be to resist deflationary pressures and stimulate economic growth through large-scale asset purchases, thereby increasing bank reserves and reducing interest rates along the yield curve at maturities commensurate with the assets purchased.

The Bank of Japan (BOJ) has adopted all of these strategies at various times since the late 1990s to combat deflation and strengthen economic performance. It has promised to keep rates low until deflation pressures dissipate and launched its first large-scale asset purchase program in 2001. This program was dramatically expanded in the next few years; it essentially ended in 2006 after early signs that deflation was abating. In 2010, in response to re-emerging deflation and slowing economic growth, the BOJ launched a comprehensive monetary easing program and bought roughly \$1.1 trillion in Japanese government bonds and other assets.

Deciding that this action was insufficient, the BOJ recently announced another asset-purchase program and a program to stimulate financial institutions’ lending to the private sector.⁶ Clearly, the BOJ has been experimenting with various communications and asset-purchase programs to provide the necessary policy stimulus. Nevertheless, as Japan’s current situation shows, overcoming the zero-interest-rate boundary can be elusive. The nation’s experience reveals that designing effective communications and policy strategies is harder for central banks than economics textbooks might suggest.⁷

Federal Reserve Monetary Policy

Let me turn to the implications of what I have said so far for U.S. monetary policy. I hope to illustrate how the evolution of economic thought, combined with lessons taken from the United States during the Great Depression and from Japan during the past 20 years, have influenced the Federal Reserve’s strategy for addressing the U.S. economic collapse and its aftermath.

In the United States, the first signs of financial instability appeared in the summer of 2007, but it was not until the

following summer that the full magnitude and nature of the problem became evident. As market liquidity dried up and market functioning became impaired, the Federal Reserve lowered its policy interest rates and focused on lending to illiquid institutions. Nevertheless, the economy plunged into the deepest recession the country had seen since the Great Depression.

By the end of 2008, the federal funds rate, the Federal Reserve’s primary policy interest rate, had been reduced to essentially zero and could be reduced no further. However, in a departure from the Great Depression era, the modern Federal Reserve did not perceive the zero lower bound on interest rates as a barrier to further action. Chairman Bernanke in particular had studied the Great Depression carefully and had also paid close attention to Japan’s challenges in overcoming the zero-interest-rate floor.

The Federal Reserve’s strategy, which quickly emerged, was based on two components: large-scale asset purchases and communications. I will begin with asset purchases. The Federal Reserve’s decision to buy longer-term assets on a large scale was designed to approximate the actions it would otherwise have taken using its conventional policy tool, the federal funds rate. The key point here is that this balance-sheet approach does not focus primarily on increasing reserves to the banking system, but rather on depressing the yield on risk-free assets relative to risk assets. The result should be that more credit is directed to private-sector investments, such as corporate debt and equities, and to the mortgage market.

The Federal Reserve announced its first round of quantitative easing (QE1) in November 2008. Several months later, the FOMC decided to ease financial conditions further, and by the end of 2009, it had announced plans to purchase up to \$1.75 trillion in U.S. Treasury securities, debt issued by housing-related, government-sponsored enterprises, and the mortgage-backed securities they insure.

However, despite the easing in monetary conditions achieved through these unprecedented steps, the economy failed to gain traction the following year. Equally worrisome, inflation fell below 1 percent and the risk of deflation was rising. To strengthen the economic recovery and head off the risk of deflation, the FOMC announced a second round of quantitative easing (QE2) in November 2010. With this initiative, the FOMC purchased an additional \$600 billion in longer-term U.S. Treasury securities, bringing cumulative asset purchases to about \$2.35 trillion.

Now let me turn to communications strategy. As the FOMC engaged in nontraditional policy actions, it explicitly recognized the value of enhancing its communications with the public. To that end, the Federal Reserve has been giving the public an unprecedented wealth of information regarding its objectives, the economic outlook, and its expectations regarding the likely path of the federal funds rate several years into the future. The chairman holds press conferences to introduce and explain these economic and policy



projections. Through these innovations, communications have become much more frequent and detailed than they were before the financial crisis. These communications will enable the public to better anticipate how the Federal Reserve will likely respond to changes in the economic outlook.⁸

One important communications innovation was the FOMC's January 2012 announcement that it had established numerical values for its dual mandate objectives of price stability and maximum employment. The FOMC determined that 2 percent inflation and an unemployment rate of 5.2 to 6.0 percent are the values it considers most compatible with efficient economic performance over the longer term. It noted that inflation is controllable by monetary policy, but the longer-run unemployment rate is determined primarily by nonmonetary factors.

As early as 2010, the FOMC also recognized the importance of communicating about its strategy for withdrawing extraordinary policy accommodation. Later, in 2011, the FOMC published principles that will guide the return to policy normalization and has been testing the tools it will use when the time comes.⁹ In doing so, the Federal Reserve has not only followed good risk-management practices; it has also recognized that a sound exit policy is critical to the credibility of its strategy.¹⁰ In this sense, the FOMC's statement regarding its exit principles helps it "commit" to removing its extraordinary policy accommodation in a prudent manner. The statement could also bolster credibility for the expansion of policy easing that was already underway.

The FOMC's policy statement following its September 2012 meeting very clearly illustrates its use of communications to augment and enhance its decisions about balance-sheet actions. At its September meeting, it decided to initiate a third asset-purchase program. Rather than announce a program of a specific size, the FOMC indicated it would purchase additional agency mortgage-backed securities at a pace of \$40 billion per month. If the labor market outlook did not improve substantially, the FOMC would continue to buy agency mortgage-backed securities and undertake additional asset purchases until such an outcome is achieved—being mindful, of course, of its price-stability objective. In addition, the FOMC said that it expects a highly accommodative stance of monetary policy to remain appropriate for a considerable time after the economic recovery strengthens and, in particular, that exceptionally low federal funds rate levels are likely to be warranted at least through mid-2015.¹¹

In this statement, we can see all of the elements of the FOMC's policy strategy at work: forward guidance about the likely path of the federal funds rate, asset purchases on a large scale, and a linkage between the scale and pacing of the asset purchase program and the evolving economic outlook. The total amount of assets to be purchased will depend on how the economic outlook evolves, as well as the FOMC's assessment of the program's relative benefits and costs.

Nevertheless, it is clear by now that the Federal Reserve's balance sheet has dramatically expanded already. Has the strategy been successful? Research on the effects of our balance-sheet operations indicates that they have been keeping 10-year Treasury yields well below what they otherwise would have been.¹² The same can be said for yields on mortgage-backed securities. These benefits have not compromised the FOMC's commitment to price stability: Inflation has been running in the 2 percent range lately, and inflation expectations appear to be well anchored.¹³ Furthermore, simulations using the Federal Reserve's FRB/US macro model indicate that GDP growth would have been notably weaker, and unemployment notably greater, without QE1 and QE2.¹⁴

Of course, the full scope of the announced policy actions in the United States and Japan has yet to play out. As of now, neither country has fully achieved its policy goals. It is quite possible that quantitative easing programs and forward guidance have less impact on actual economies than they do on models of them. As Federal Reserve Board Governor Jeremy Stein recently observed, some tenets of corporate finance theory suggest that large-scale asset purchases might have diminishing returns over time.¹⁵

Some skeptics call for abandoning asset purchases and low-interest-rate policies entirely, while others suggest various modifications of current policies. For example, the economist Michael Woodford maintains that asset purchases per se have not, and cannot, affect spending. In his view, purchases do not lead to asset-price changes in financial markets, but might operate by signaling that interest rates will remain low for a long time. He believes that the only mechanism able to induce more spending is a commitment to keep rates low for longer than would normally be expected on the basis of prior practice, along with a tolerance for higher short-term inflation.¹⁶

In fact, many different theories of monetary policy transmission are being proposed, and more empirical testing of these hypotheses is needed. The longer the low-interest-rate environment persists in countries around the world, the more we should be able to learn about how economies perform in these conditions. Policymakers have theories and models to inform them, but their challenge is to forge a coherent and workable strategy from differing perspectives and incomplete evidence. As we implement policies, we should carefully evaluate their efficacy and not become dogmatically entrenched in particular theories and models.

I hope my remarks illustrate how developments in economic theory, combined with insights learned from the Great Depression and Japan's recent experiences, have produced the policy strategy the Federal Reserve uses today. Central bankers in the United States, Europe, and Japan have demonstrated great willingness to overcome the "orthodoxies of their day." Nevertheless, the final chapters of their stories have yet to be written. Thus far, no country has emerged from the application of these new and unconventional techniques and renormalized its policy operations.

Footnotes

1. Before the rational expectations revolution, policy rules were advocated by monetarists who thought that central banks' discretion should be curtailed because discretionary monetary policy was the primary source of macroeconomic fluctuations.
2. Finn E. Kydland and Edward C. Prescott, 1977. "Rules Rather than Discretion: The Inconsistency of Optimal Plans," *Journal of Political Economy*, 85(3), 473–92.
3. John Taylor (2000) nicely summarizes this progression in economic thought. See "How the Rational Expectations Revolution Has Changed Macroeconomic Policy Research," Revised Draft: February 29, 2000; lecture presented at the 12th World Congress of the International Economic Association, Buenos Aires, August 24, 1999.
4. See, for example, Athanasios Orphanides, 2004. "Monetary Policy in Deflation: The Liquidity Trap in History and Practice," *North American Journal of Economics and Finance*, 15(1), 101–24.
5. Ben S. Bernanke, "Economic Policy: Lessons from History." 43rd Annual Alexander Hamilton Awards Dinner, Center for the Study of the Presidency and Congress, Washington, D.C., April 8, 2010. <<http://www.federalreserve.gov/newsevents/speech/bernanke20100408a.htm>>.
6. See the statements, "Enhancement of Monetary Easing" and "Measures Aimed at Overcoming Inflation," Bank of Japan, October 30, 2012. <http://www.boj.or.jp/en/announcements/release_2012/k121030a.pdf> and <http://www.boj.or.jp/en/announcements/release_2012/k121030b.pdf>. In addition, the Bank of Japan has taken new policy actions since the date of the speech this *Commentary* is derived from. See <<http://www.boj.or.jp/en/>>.
7. See Owen F. Humpage, "Communication, Credibility, and Price Stability: Lessons Learned from Japan," Federal Reserve Bank of Cleveland, *Economic Commentary*, 2012-09, 2012. <<http://www.clevelandfed.org/research/commentary/2012/2012-09.pdf>>.
8. See the speech by Federal Reserve Vice Chair Janet L. Yellen, "Unconventional Monetary Policy and Central Bank Communications," to the University of Chicago Booth School of Business, U.S. Monetary Policy Forum, New York, N.Y., February 25, 2011. <<http://www.federalreserve.gov/newsevents/speech/yellen20110225a.htm>>.
9. See the speech by Chairman Ben S. Bernanke, "Federal Reserve's Exit Strategy," before the Committee on Financial Services, U.S. House of Representatives, Washington, D.C.; February 10, 2010. <<http://www.federalreserve.gov/newsevents/testimony/bernanke20100210a.htm>> and minutes of the FOMC, June 21–22, 2011. <<http://www.federalreserve.gov/monetarypolicy/fomcminutes20110622.htm>>.
10. For illustrative projections of the balance sheet as guided by the exit principles, see Seth B. Carpenter, Jane E. Ihrig, Elizabeth C. Klee, Alexander H. Boote, and Daniel W. Quinn, 2012. "The Federal Reserve's Balance Sheet: A Primer and Projections," Board of Governors of the Federal Reserve System (November). <<http://www.federalreserve.gov/pubs/feds/2012/201256/201256pap.pdf>>.
11. The FOMC announced two changes to monetary policy at its December 2012 meeting. First, the asset purchase program was expanded to include long-term Treasury securities at an initial rate of \$45 billion per month. Second, in an effort to increase transparency, the FOMC replaced its date-based forward guidance with a description of economic conditions that were likely to be consistent with the exceptionally low federal funds rate.
12. See the speech by Federal Reserve Vice Chair Janet L. Yellen, "Perspectives on Monetary Policy," at the Boston Economic Club Dinner, June 6, 2012, especially footnotes 10 and 11. <<http://www.federalreserve.gov/newsevents/speech/yellen20120606a.htm>>.
13. The FOMC announced numerical objectives for price stability and maximum employment on January 25, 2012, to further increase its transparency, credibility, and accountability. <<http://www.federalreserve.gov/newsevents/press/monetary/20120125c.htm>>.
14. Hess Chung, Jean-Philippe Laforte, David Reifschneider, and John C. Williams, 2012. "Have We Underestimated the Likelihood and Severity of Zero Lower Bound Events?" *Journal of Money, Credit, and Banking* 44(s1), 47–82. <<http://onlinelibrary.wiley.com/doi/10.1111/j.1538-4616.2011.00478.x/abstract>>.
15. See the speech by Federal Reserve Board Governor Jeremy C. Stein, "Evaluating Large-Scale Asset Purchases," at the Brookings Institution, Washington, D.C., October 11, 2012. <<http://www.federalreserve.gov/newsevents/speech/stein20121011a.htm>>.
16. For a review of the literature and its implications for monetary policy, see Michael Woodford, "Methods of Policy Accommodation at the Interest-Rate Lower Bound," Columbia University, August 20, 2012. <<http://kansascityfed.org/publicat/sympos/2012/mw.pdf>>.

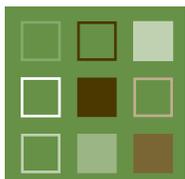


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