Eyes on The Prize

BY RICHARD H. CLARIDA

The role of expectations in monetary policymaking.

When most people think about October, they think about football games on crisp weekend afternoons or perhaps the World Series. But this time of year, as during every October, economists are also trading opinions on the winners of the Nobel Prize in economics. The prize for 2011 was awarded to Tom Sargent of New York University and Chris Sims of Princeton University. Upon hearing the news, my immediate reaction was a resounding "Well, it's about time!" Sargent and Sims, working contemporaneously but mostly independently, developed in the 1970s and 1980s the empirical and statistical tools that economists and policymakers use daily to study and estimate the impact of monetary and fiscal policy actions on the economy and on financial markets—aware they are functioning in a world in which firms, investors, and households are also making forecasts of those policy actions.

Sargent and Sims were also early to recognize the importance of, and the potential pitfalls arising from, monetary and fiscal policies that depend upon policymakers themselves forecasting those private sector forecasts in setting a path for interest rates or government spending. If forecasting the forecasts of others sounds circular, that's because it can be, and as a result the mathematics are not always easy (think "fixed point theorems for compact sets over countable states of nature"). But Sargent and Sims, along with previous Nobel prize winners Robert Lucas and Ed Prescott, developed the framework, really the paradigm, that economists use today. This framework offers crucial insights into recent central bank actions—and market responses.

Richard H. Clarida is C. Lowell Harriss Professor of Economics and International Affairs at Columbia University and Global Strategic Advisor to PIMCO. He served as Assistant Secretary for Economic Policy at the U.S. Treasury from February 2002 to May 2003.

THE INTERNATIONAL ECONOMY

THE MAGAZINE OF INTERNATIONAL ECONOMIC POLICY
888 16th Street, N.W., Suite 740
Washington, D.C. 20006
Phone: 202-861-0791 • Fax: 202-861-0790
www.international-economy.com
editor@international-economy.com

SHAPING MARKET EXPECTATIONS

The world's major central banks certainly use Sargent's and Sims's methods for estimating and evaluating "old normal" monetary policies that set a path for the short-term interest rate to hit an inflation target. From their results, we know private sector expectations of this policy path for interest rates are crucial to macroeconomic outcomes and thus to the success—or failure—of the policy.

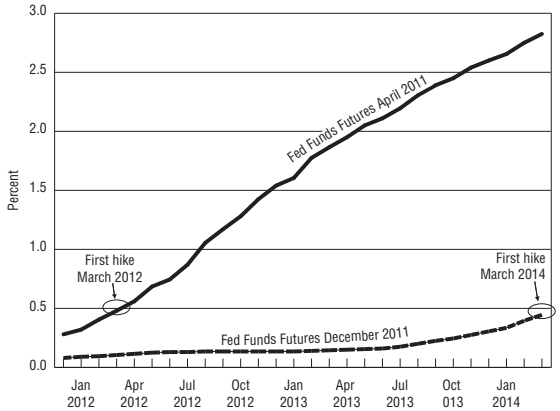
So when we hear central bankers today talking about extended periods or measured paces, they are channeling Sargent and Sims (via Michael Woodford, Sims's one-time colleague at Princeton), using forward guidance to reinforce and, in practice, often shape market expectations that will lead to desired outcomes for inflation and unemployment. The Fed boldly deployed this approach in its August 2011 statement:

> *"The Committee currently anticipates that economic conditions—including low rates of resource utilization and a subdued outlook for inflation over the medium run—are likely to warrant exceptionally low levels for the federal funds rate at least through mid-2013."*

Why was this a bold statement? Because for the first time since it began to issue policy statements (in 1994), the Fed indicated it expected to keep the fed funds policy rate at or below its effective lower bound of zero to 25 basis points for a *specified interval of time,* that is, "at least through mid-2013." This went beyond the less precise language in several previous statements, which said the policy rate would remain at the current level for "an extended period." The August statement was clearly an effort to influence private sector expectations and, together with surprisingly weak U.S. macro data released in spring and summer (which confirmed that resource utilization was likely to remain "low" and the outlook for inflation over the medium run was likely to remain "subdued"), the statement did shift those expectations substantially—see Figure 1.

Figure 1 Expected path of Fed policy rate from fed funds futures strip

Fed fund futures as of December 2011 indicate the first rate hike isn't expected until March 2014, a significant shift from April's expectations.



Source: Bloomberg

MACRO SURPRISES: DIRECT AND INDIRECT EFFECTS

In turn, the weaker-than-expected U.S. data and the August Fed statement language explained much of the decline in U.S. bond yields that occurred during this period. Motivated by Sims's work on macroeconomic surprises, Figure 2 plots an index of U.S. macro surprises (such as GDP announcements out of line with expectations, with negative readings indicating a run of negative surprises over a three-month window) versus the change in the ten-year Treasury yield. Historically, much of the movement in bond yields is correlated with the flow of macro data surprises. This reflects the direct effect of the macro data on bond yields, as well as the indirect effect on expectations about how the data will influence Fed policy.

NONTRADITIONAL TOOLS TO SUPPLEMENT FORWARD GUIDANCE

So while forward guidance is one policy instrument available to the Fed, there is a limit to its effectiveness, which is why the Fed has pursued other policy options since hitting the zero lower bound. After all, talk is cheap, and if ensuring macroeconomic stability were as simple as getting central bank rhetoric right, we would want our central bankers to be English majors, not economists (and yes, I'm aware of the punch line one could insert here, but in the interest of comity, I will decline).

An important constraint on forward guidance is that to be credible, it must (in the language of Ed Prescott) be "time consistent." This means the public and the markets must expect today that the central bank will, *at that future date,* deliver on the policy that it promised earlier. And note how carefully the sentence from the August Fed statement was drafted, no doubt in part to lend it more credibility: *"The Committee currently anticipates that economic conditions…are likely to warrant exceptionally low levels for the federal funds rate at least through mid-2013"* (emphasis mine). "[E]conomic conditions are likely to warrant" indicates the Fed is not—yet—making an unconditional promise to keep the policy rate at zero to 25 basis points. Instead, the Fed majority who voted in favor of this state-

ment—and there were three dissenters who voted against—expected in August 2011 that the Fed would want, because of macroeconomic conditions expected to prevail in the future, to keep the policy rate at zero to 25 basis points at least through mid-2013, and it chose to share that expectation with the public.

A second possible constraint on monetary policy in general and forward guidance in particular is that monetary policy independence could be limited by fiscal policy commitments. Both Sargent and Sims have discussed this, Sargent in his classic paper "Some Unpleasant Monetarist Arithmetic" and Sims in his later work on the fiscal theory of the price level.

Their research argues that under certain circumstances, fiscal policy constrains monetary policy to such an extent that monetary policy cannot anchor the price level—and thus cannot anchor the public expectations of the price level—independently of fiscal policy. Under these conditions, forward guidance itself, if it is to be credible, must be consistent with fiscal policy.

While few if any central bankers today will acknowledge that fiscal policy limits their ability to target inflation or to anchor inflation expectations, their actions reveal how they must rely on nontraditional monetary policies to do so. The Fed, for example, has embarked on two rounds of quantitative easing—in November 2008 and November 2010—and one round of "Operation Twist" (selling short-term Treasuries in exchange for longer-term) in September 2011. An uncanny correlation exists between the Fed's preferred measure of the public's long-term inflation expectations—five-year breakeven inflation five years in the future—and the timing or initial announcement of a quantitative easing or twist program (see Figure 3).

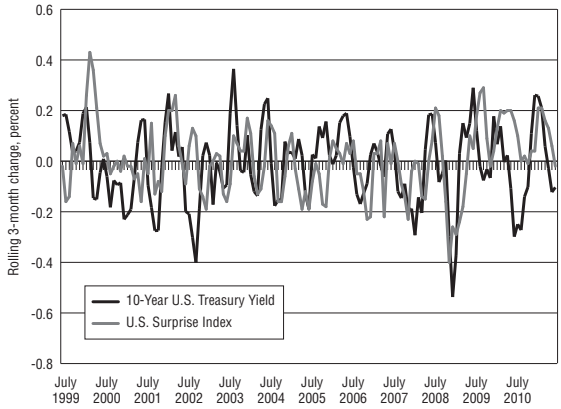
In the four years since August 2007, when fallout from the subprime crisis went global (forcing central banks around the world to inject liquidity into credit markets), there have been exactly three times when the five-year five-year forward breakeven inflation measure has fallen below 2 percent, and in each instance the Fed announced a quantitative easing or twist program soon thereafter.

This correlation is not a coincidence. The Fed's mandate is to deliver price stability, which means avoiding deflation and keeping inflation expectations well anchored. As market expectations of inflation five years in the future drift below 2 percent, and with the Fed unable to lower the policy rate because of the zero lower bound, it has chosen to stabilize expectations via these quantitative programs. While the cost-benefit calculus behind these programs is a subject of much debate, their timing and purpose should not be.

So yes, expectations matter for macroeconomics. Stated this way, it sounds obvious, but before Sargent and Sims, economists and policymakers had no rigorous way to incorporate expectations into their statistical models. Now they do and the models are undoubtedly better for it. But they are just that, models. And like any statistical models, their parameters are creatures of the macroeconomic environment that prevailed when they were estimated, which in most cases was during the great moderation. But so long as we assume the future will be like the past… ◆

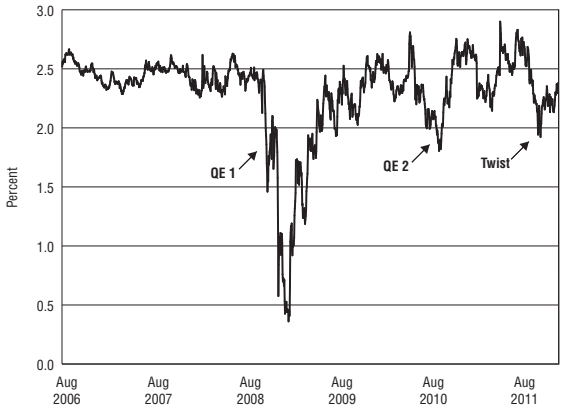
Figure 2 Bond yield correlations with macroeconomic surprises

Surprises to the upside or the downside, whether in macroeconomic data or policy actions, display correlations with bond yields over the long term.



Source: Author's calculations, Bloomberg. Data as of July 2011.

Figure 3 Five-year, five-year forward breakeven inflation below 2 percent predicts timing of QE/Twist operations



Source: Author's calculations, Bloomberg. Data as of December 2011.