FEDERAL RESERVE

When Talk Isn't Cheap

BY RENEE HALTOM

Can the Fed create economic growth ... just by talking?

For all the obsessive attention given to the fed funds rate, the short-term interest rate that is the Fed's primary tool for influencing the economy, the rate is relatively unimportant in the scheme of things. Just ask Fed Chairman Ben Bernanke.

"Other than managers of bank reserves and some other traders in short-term funds, few people in the private sector have much interest in the funds rate *per se*," he explained in 2004. Instead, he said, what drives the bulk of economic activity is long-term interest rates, which are determined by markets rather than directly by the Fed. Those range from five-year car loans to 30-year mortgages, as well as corporate bond rates and the prices of interest-sensitive long-term assets such as housing and equities.

So how does the Fed have such powerful influence over the economy if its main policy lever is not directly relevant to most economic transactions? The answer is expectations. Long-term interest rates are determined in part by what financial markets expect monetary policy to do in the future, since the interest rate on a long-term loan depends on the short-term rates that are expected to prevail over the loan's life. That makes expectations for fed funds rates of the future more relevant to economic activity than the rate's level in the present. That also means most of the effect of changes to the fed funds rate comes before the decisions are actually made, when private forecasters start to anticipate them and build them into long-term rates.

As a result, the Fed is very careful about its communication with the public, providing as much information as possible about future policy through speeches, policy statements, and press releases without unduly committing to a course of action that could change and therefore disrupt financial markets.

Lately, Fed communications have had an even more important role. The target fed funds rate has been set essentially to zero since December 2008 in response to the Great Recession. The Fed has limited scope to push the fed funds rate lower; negative nominal interest rates are technically possible, but some argue they would significantly disrupt financial markets. Instead, with the economic recovery still weak, the Fed has tried to keep long-term interest rates low by creating the expectation that the fed funds rate will stay at zero for a long time to come, through what's known as "forward guidance" about future policy. But communications are an inherently imprecise tool, so a central bank's words can hurt if policymakers are not careful.

Embracing Expectations

To speak clearly about policy, a central bank must have a coherent framework for thinking about it. The lack of such a framework kept monetary policymakers more or less silent in the decades after the gold standard collapsed, according to Fed history expert and former Richmond Fed director of research Marvin Goodfriend, now at Carnegie Mellon University. Many central banks engaged in virtually no communication with the public until the 1990s, giving the Fed a reputation it is still trying to shake for running the economy by pulling intentionally mysterious policy levers like the wizard in Oz. The Fed has fought that perception over the last 20 years by being increasingly open about its views on policy. Areas of disagreement used to include the root causes of inflation and how much power policymakers had to manage business cycles. What helped resolve these and other questions was a greater appreciation among economists for the role of expectations in driving economic activity.

It wasn't that economists didn't always believe expectations were important; it's just that they are exceedingly difficult to model mathematically. To model any decision that spans time, as virtually all economic questions do, one needs a theory of how expectations are formed. But expectations are unobservable and shaped by countless, sometimes subtle bits of information. And then one has to factor in the effects of policy on a person or a firm's behavior, which requires a way to capture the circularity in which people's knowledge of policy changes behavior, but policy's effect on behavior might in turn change policy.

Early economists wanted to deal with expectations but didn't know how. As a result, expectations didn't appear in the first formal theories of macroeconomic stabilization policy, with economists figuring, as John Maynard Keynes did, that the economy was beholden to "waves of optimism and pessimism" that were important but undefinable. But theories that didn't deal with expectations sometimes led economic policy astray. In the 1960s and 1970s, monetary and fiscal policies were based on the Phillips curve, the empirical regularity in that period where inflation and unemployment usually moved in opposite directions. This pattern in the data suggested to policymakers that they could always achieve a lower rate of joblessness simply by bumping up the rate of price increases. Unfortunately, those policies only showed, contrary to the Phillips curve, that inflation could rise without any beneficial effect on unemployment, in the 1960s as policymakers failed to anticipate the inflationary effects of some combined efforts to simulate the economy, and in the 1970s as the Fed failed to adequately tighten policy in response to oil price shocks, cementing inflation into the public's expectations.

An impressive number of Nobel Prizes were awarded to economists — Milton Friedman, Edmund Phelps, Robert Lucas, Edward C. Prescott, Finn Kydland, and Thomas Sargent — who developed theories of expectations in the 1960s, 1970s, and 1980s. This body of work provides some of the best examples of how economic theory can improve real-world policy. Expectations in models went from nonexistent to "adaptive" — people expecting what happened in the past to continue — and from there to "rational." Rational expectations, still the dominant model today, suggests that people form expectations for some future variable by looking at the relevant decisionmaker's incentives. For example, since the central bank is charged with managing inflation, people form inflation expectations by considering how the central bank will address that issue. (People might not be able to do the same calculus that economists can, but the theory says they act through intuition as if they do).

For policy, the primary outcome of this work was the realization that the Phillips curve was a temporary trade-off at best; inflation would reduce unemployment only if it came as a surprise, tricking people into thinking they were getting paid higher real wages than they were, and thereby leading them to consume more and spur employment. But surprising people, especially repeatedly, is hard to do. Not only do expectations for future inflation help determine the inflation rate today — for example, people demand higher wages if they expect prices to rise — but also people can rationally anticipate when a central bank has an incentive to create inflation. Therefore, the central bank can keep inflation expectations, and thus actual inflation, anchored only by following an anti-inflation policy rule and making that rule well known to the public.

This research suggested that central banks should reverse their tradition of being opaque. Prior to the 1990s, the Fed didn't so much as announce its policy decisions to the public, let alone explain those decisions or provide a hint of future policy. But the public's tolerance of secrecy was also waning. The Fed was sued in the late 1970s for publication of the policy directive, the marching orders of the Federal Open Market Committee (FOMC) to the trading desk in New York. The Fed eventually won in courtrooms, but not in the eyes of Congress. In the early 1990s, Rep. Henry Gonzalez (D-Tex.) led a charge to publicize details of the Fed's policy meetings. Many scholars made cases for transparency on democratic grounds, if not also on economic ones.

The Fed's reason for its eventual decision to announce policy for the first time, in 1994, was more immediate: It hadn't raised rates in five years and feared the move would disrupt markets. The Fed has become considerably more transparent since then. The FOMC's post-meeting press release, known as the FOMC statement (see sidebar on page 8), started including an assessment of the likely future course of interest rates in 1999. A few years later, it began to reveal how each member voted.

Fed communication now extends far outside the FOMC statement. Meeting minutes help markets anticipate what will be done before the next meeting. Individual FOMC members give speeches to explain how their views compare to the consensus. Four times per year, the Fed publishes three-year projections for GDP, unemployment, and inflation created by the staffs of each FOMC member. That's a composite of 19 different forecasts if all the seats of the FOMC are filled, indicating the extent to which there is uncertainty on the economy's health. Where Fed chairmen used to decline interviews as a rule, Chairman Bernanke started holding regular press conferences in 2011 and has even appeared on the television program *60 Minutes*. Most recently, the Fed for the first time provided quantitative information about its plans by announcing in January 2012 a goal of 2 percent average inflation and stating that it viewed an unemployment rate between 5.2 percent and 6 percent as the best sustainable rate the current structure of the economy could achieve.

> **Sometimes communication *is* the policy.**
>
> – Fed Vice Chair Janet Yellen
> April 2013

Making Policy Predictable...

The Fed's moves have become so predictable that markets have a pretty good idea of what will happen by the time the FOMC meets. A 2006 study by San Francisco Fed economist Eric Swanson found that financial markets and private forecasters became less surprised by FOMC decisions after the Fed started announcing them. Private forecasts of the fed funds rate grew more precise even several months before an FOMC meeting, and markets became more certain about their forecasts as evidenced by the hedges made on them. In contrast, forecasts of variables like GDP and inflation did not grow more precise over the same period, suggesting that the improvement was due to a better understanding of the FOMC's objectives and not more economic certainty in general during that time.

Yet there are several reasons why central banks can't be entirely transparent about future policy. For one thing, the economic forecast is uncertain. Central bankers must make all statements contingent on future developments, which accounts for the notorious precision and many terms of art with which the Fed speaks. That has given central bankers a reputation for being indecipherable, and sometimes for good reason. Former Fed Chairman Alan Greenspan would intentionally speak in riddles in his testimonies before Congress, a venue in which he was obligated to respond to questions that had no clear answer. "Every time I expressed a view, I added or subtracted 10 basis points from the credit market," he told *Bloomberg Businessweek* in August 2012. So when asked a nuanced question, "I would continue on resolving the sentence in some obscure way which made it incomprehensible."

A perhaps clearer way for a central bank to provide

information about the future is to give markets an idea of how it would react to different economic environments — what economists call the central bank's policy rule or reaction function. This gives markets a sense of the central bank's overall strategy given several possible contingencies — what rational expectations say people need to form accurate expectations about the future — rather than just the near-term outcome of that strategy under present conditions, as a rate forecast alone would provide. Markets are said to "do the work of the central bank" when they can infer from incoming economic data how the Fed is likely to move, pricing in policy changes before they actually take place and allowing the Fed to stabilize the economy with fewer costs. In a 2001 book, former Fed Vice Chairman Alan Blinder and several coauthors argued that bond rates had begun moving up and down according to the economic forecast, acting as a macroeconomic stabilizer even when the fed funds rate changed little. Donald Kohn, another former Fed Vice Chairman, and economist Brian Sack, formerly of the New York Fed, showed in 2003 that the Fed Chairman's bi-annual testimonies before Congress, which tend to focus on longer-term issues affecting monetary policy, affected 10-year Treasury yields, a signal that markets have more clarity about how the Fed is likely to behave even far into the future.

Central banks have come to appreciate that the public's awareness of monetary policy's longer-term goals helps the central bank to achieve them. For example, with the Fed's strong anti-inflation reputation, inflation expectations remained low through events such as rising oil prices in 2005 and aggressive monetary policy since the recent recession. In the past, such events might have spun inflation expectations out of control and driven inflation higher, so an awareness of the Fed's goals may have allowed the Fed to avoid some costly rate increases. Of course, the Fed's goals have been credible only because they tend to prove accurate; talk is followed up with action.

... In Unpredictable Times

It is, of course, harder to make policy predictable in extraordinary times. Today the Fed is contending with an inability to lower rates further — since the fed funds rate is at the

The Voice of the FOMC

Lately, the FOMC's policy announcements have included these key components. (Historical FOMC statements are available at http://www.federalreserve.gov/monetarypolicy/fomccalendars.htm)

Press Release
Release Date: March 20, 2013
For immediate release

Factors Considered by the FOMC	Information received since the Federal Open Market Committee met in January suggests a return to moderate economic growth... Inflation has been running somewhat below....
Economic Outlook	Consistent with its statutory mandate, the Committee seeks to foster maximum employment and price stability. The Committee expects that, with appropriate policy accommodation, economic growth will ... the Committee continues to see downside risks to the economic outlook. The Committee also anticipates that inflation over the medium term likely will run at...
Information About Other Actions	To support a stronger economic recovery and to help ensure that inflation, over time, is at the rate most consistent with its dual mandate, the Committee decided to continue... Taken together, these actions should...
	The Committee will closely monitor incoming information on economic and financial developments in coming months. The Committee will... until such improvement is achieved in a context of price stability...
New Policy Decision and Forward Guidance	To support continued progress toward maximum employment and price stability, the Committee expects that a highly accommodative stance of monetary policy will remain appropriate for a considerable time after the asset purchase program ends and the economic recovery strengthens. In particular, the Committee decided to keep the target range for the federal funds rate at 0 to 1/4 percent and currently anticipates that this exceptionally low range for the federal funds rate will be appropriate at least as long as the unemployment rate remains above 6-1/2 percent, inflation between one and two years ahead is projected to be no more than a half percentage point above the Committee's 2 percent longer-run goal, and longer-term inflation expectations continue to be well anchored. In determining how long to maintain a highly accommodative stance of monetary policy, the Committee will also consider other information, including additional measures of labor market conditions, indicators of inflation pressures and inflation expectations, and readings on financial developments. When the Committee decides to begin to remove policy accommodation, it will take a balanced approach consistent with its longer-run goals of maximum employment and inflation of 2 percent.
Vote	Voting for the FOMC monetary policy action were... : Voting against the action was... who was concerned that...

so-called "zero bound" — and with doubts about whether monetary policy is the appropriate medicine for the economy's weakness. At the dawn of the financial crisis, the Fed realized that "the FOMC could not simply rely on its record of systematic behavior as a substitute for communication," Fed Vice Chair Janet Yellen said in an April 2013 speech.

Another challenge to making predictable policy is that, since the crisis, there has been open disagreement within the FOMC not only about the best policy rule to follow, but also whether it makes sense to be operating under a single rule to begin with. "The simple rules that perform well under ordinary circumstances just won't perform well with persistently strong headwinds restraining recovery and with the federal funds rate constrained by the zero bound," said Yellen in November 2012. That same month, Philadelphia Fed President Charles Plosser, a longtime advocate of policy rules, argued that, with the Fed's powers of communication as an aid, unusual times are no reason not to have a rule in place. "I would argue that we use the rules as guides and then explain why the zero lower bound might suggest deviating from the prescriptions of those rules when appropriate."

Some argue the zero bound calls for a particular kind of deviation from the policy rule. The idea comes from a 2003 study that has recently garnered a lot of attention. Gauti Eggertsson of the New York Fed and Michael Woodford of Columbia University devised a model in which the central bank can boost economic activity at the zero bound by making a credible promise to keep rates at zero even after the economy recovers — that is, for longer than the policy rule would call for. The promise invites the private sector to borrow and spend because they expect that their incomes will recover before rates go back up. But essential to the strategy is that markets believe the central bank will follow through with making "too easy" policy in the future. That's not such an easy thing to convince the public of. After the central bank has enjoyed the boost to economic activity created by expectations, it's obvious that it will want to raise rates to contain inflation. Since the central bank can change course later, the public may dismiss its statements as mere "cheap talk." Thanks to people's ability to form expectations rationally, this is a problem faced by any party that wishes for inherently costless words to affect future outcomes, and an entire class of game theory research — beginning with work by Vincent Crawford and Joel Sobel in the early 1980s — was geared toward understanding how parties can make "cheap talk" credible.

One way a central bank might be able to overcome cheap talk is by making strong public statements, since its credibility would be damaged if it didn't follow through. And since the Fed has substantially ramped up its statements about the future since hitting the zero bound, many people suspect the Fed has been following the Eggertsson and Woodford strategy, though it has not explicitly said as much. Those announcements of forward guidance have appeared primarily in the post-meeting FOMC statements, and they have all but promised that rates will stay low for the foreseeable future. (They are not an outright promise since all policy decisions are contingent on future developments.) In December 2008, the FOMC stated that rates were likely to stay low "for some time," changed to "an extended period" in March 2009. In August 2011, the FOMC for the first time provided a calendar date of likely future policy changes: The statement said rates were likely to stay low at least through mid-2013. In January 2012, the date was pushed to late 2014, and in September 2012, it was pushed to mid-2015. Also in September 2012, the Fed added that rates would likely stay low even *after* the economy strengthened — precisely the sort of commitment that Eggertsson and Woodford prescribed — which the FOMC later suggested would be after unemployment falls to 6.5 percent provided that inflation doesn't rise above 2.5 percent.

Preliminary studies have found that forward guidance has initially been credible. Recent research by Swanson and San Francisco Fed President John Williams found that when the Fed hit the zero bound in December 2008, private forecasts expected rates to stay there for only a few quarters. But after the Fed introduced a calendar date in August 2011, private sector forecasts pushed the date of monetary policy "liftoff" out to seven quarters or more. Yields on 10-year Treasuries immediately dropped by about three-tenths of a percentage point.

It is too soon to know how much this talk affected economic activity, but forward guidance appears to have been successful in substantially pushing down long-term interest rates, even when it was accompanied by no change in the fed funds rate. At the same time, this type of forward guidance presents two ironically opposing risks to the economy: First, that forward guidance will signal that the Fed has backed off from its inflation objectives, permanently upending inflation expectations. And second, that people will take the Fed's commitment to easy policy as a sign that the economy is in worse shape than they thought, causing them to scale back spending as a precaution. These risks are absent in models, which assume the central bank's true intentions are perfectly clear.

Use Your Words

The FOMC statement continues to evolve at a rapid pace. In December 2012, the FOMC dropped the reference to a calendar date through which the fed funds rate was expected to stay at zero. In place of the calendar date, the FOMC tied the course of future policy to specific economic thresholds. It stated that rates were likely to stay low until unemployment fell below 6.5 percent (compared to today's rate of near 8 percent) as long as the market's medium-term inflation projections didn't rise above 2.5 percent (compared to its average of just under 2 percent since the recession).

These actions, too, have not been without criticism from within the FOMC. Richmond Fed President Jeffrey Lacker argued that the Fed has a limited ability to reduce unemployment for long, and a single indicator can't provide a

continued on page 19

complete picture of labor market conditions — so for both reasons, the unemployment rate is an inappropriate basis for policy changes. Plosser argued that, while the thresholds provide a clear near-term forecast for the fed funds rate and in that sense could improve transparency, thresholds do not equip financial markets to understand how policy will behave after the thresholds are met.

The debate reflects not only that communications are an inherently imprecise policy tool, but also that monetary policy is an imprecise science. In deciding how and what to communicate, the Fed must balance the benefits of making policy predictable with the risk that too much specificity, like thresholds for a limited set of economic variables, will obscure the fact that a complex array of data is behind policy decisions. The recent FOMC minutes reveal that the committee continues to discuss the risks and benefits of new communication strategies, and Chairman Bernanke even established a subcommittee headed by Yellen in 2010 to analyze these very questions, because with limits on movements in the fed funds rate, "sometimes communication *is* the policy," she said in April.

Among the questions on the table: While the Fed has become clearer about its thinking in the moment and has adopted quantitative long-term goals, should it adopt an explicit policy rule that defines how it will behave to achieve those goals? Could it communicate a rule in a way that reduces uncertainty but allows policymakers to deviate from the rule when appropriate? And when is deviation appropriate? While the Fed has made significant beneficial strides in communication over the last two decades, the last several years prove that there are many more issues still on the table. **EF**

Readings

Bernanke, Ben S. "Central Bank Talk and Monetary Policy." Remarks at the Japan Society Corporate Luncheon, New York, N.Y., Oct. 7, 2004.

Crawford, Vincent P., and Joel Sobel. "Strategic Information Transmission." *Econometrica*, November 1982, vol. 50, no. 6, pp. 1431-1451.

Goodfriend, Marvin. "How the World Achieved Consensus on Monetary Policy." *Journal of Economic Perspectives*, Fall 2007, vol. 21, no. 4, pp. 47-68.

Gordon, Robert J. "The History of the Phillips Curve: Consensus and Bifurcation." *Economica*, January 2011, vol. 78, no. 309, pp. 10-50.

Kohn, Donald L., and Brian P. Sack. "Central Bank Talk: Does It Matter and Why?" Federal Reserve Board of Governors Finance and Economics Discussion Series No. 2003-55, Aug. 25, 2003.

Swanson, Eric T. "Have Increases in Federal Reserve Transparency Improved Private Sector Interest Rate Forecasts?" *Journal of Money, Credit, and Banking*. April 2006, vol. 38, no. 3, pp. 791-819.

Swanson, Eric T., and John C. Williams. "Measuring the Effect of the Zero Lower Bound on Medium- and Longer-Term Interest Rates." Federal Reserve Bank of San Francisco Working Paper No. 2012-02, January 2013.