

Making Monetary Policy in an Uncertain World

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After yesterday's session, it almost goes without saying that the economy poses a moving target for policymakers. For central bankers, change should not be threatening so long as the implications of that change for key macroeconomic relationships are well understood. Unfortunately, the odds that they are well understood are slim. The evolution of saving propensities, the composition of wealth, views on the extent of risk and aversion to that risk, government spending and taxing policies, and myriad other factors all have profound and imperfectly understood implications for various links in the chain of the monetary transmission mechanism. As a result, change tends to be synonymous with uncertainty.

An unwelcome consequence is that setting monetary policy in an uncertain world implies that sometimes things go right and sometimes they go wrong. I shall focus mostly on the latter because, following John F. Kennedy's dictum that victory has a thousand fathers and defeat is an orphan, probably not enough attention has been paid to learning lessons from adverse outcomes. But first I will discuss monetary policy under uncertainty in somewhat more general terms to draw out two implications relevant to current experience. I will then consider the interaction between the determination of policy by central bankers and the formulation of expectations about

that policy by market participants, emphasizing the circumstances when those outcomes diverge.

Monetary policy under uncertainty

Any discussion about monetary policy under uncertainty turns quickly to Brainard's principle of attenuation: If the central bank is unsure of the magnitude of the effect on spending of a change in its instrument, it should change that instrument less than it would were it sure.¹ When information accretes slowly, such an attenuated response to an economic surprise could also explain policy gradualism or the tendency for changes in the policy rate to run in one direction for considerable periods.²

A substantial volume of work since 1967 has shown that attenuation and gradualism are not universal prescriptions for the conduct of policy under uncertainty. Two exceptions, in particular, seem to be relevant. The first occurs when uncertainty about the macroeconomy relates mostly to the determination of inflation. If central bankers are unsure about the degree of persistence of the inflation process, their policy may well best be aggressive and prompt to ensure that any adverse shock does not become embedded in inflation dynamics.³ This responsibility to be aggressive in the face of a shock is symmetric—prompt action is required to cushion against an inflationary or a disinflationary impetus.

The second exception concerns a fundamental asymmetry: Monetary policy ease, as calibrated by the federal funds rate, stops at the zero lower bound to nominal interest rates. While policymakers have various means for providing monetary accommodation even when the nominal interest rate is zero, they might still want to avoid becoming pinned at the zero bound because of the uncertainties regarding the quantitative significance of such alternatives. Research with models that explicitly account for the zero bound usually arrive at a paradoxical sounding conclusion. The best way of avoiding it is to be aggressive in easing before potential adverse shocks, even if the

short rate is already quite low (see Reifschneider and Williams 2000). The logic is that anticipatory policy easing puts the economy on its surest footing to withstand adverse blows and lessens the chance that the pernicious dynamics of rapidly falling inflation and an attendant rising real interest rate will ever be set in motion.

These two exceptions to Brainard's principle of attenuation have a certain "hurry up and wait" aspect that may prove trying to the impatient. If enough policy accommodation has been put in place early in the economic cycle, the correct policy advice may be to coast at that degree of ease even though the economy may not yet have achieved an acceptable performance. Such a stance follows because the previous actions working their way through the policy transmission mechanism may be sufficient to deliver the most favorable attainable outcome over time.

How surprises happen

As to the interaction of the decisions of policymakers and market participants, it is important to remember that the Federal Reserve's control of the federal funds rate has direct consequences for only a small segment of spending. That control, however, can be a powerful lever if market participants reliably embed the current and expected future path of the overnight rate into the full range of asset prices. But investors will only act on sensible beliefs. That is, a central bank's decision must be seen by them as consistent with a reasonable view of likely economic outcomes, a sense of how to weigh those potential outcomes given the attendant risks, and a predictable policy response to that economic scenario. The three elements of this process suggest three ways that the process could go off track.

First, if market participants have a view of the economy that differs from that of the central bank, disappointment is sure to set in. Such disparity may have existed in the latter part of the 1990s, when investors seemed slow to understand that the likely step-up in productivity growth implied lessened pressures on unit costs, thereby

alleviating inflation risks in the near term but also calling for a higher equilibrium real rate over time, consonant with an elevated return to capital. Or it may have been the situation in the second half of 2000, when market participants seemed to detect softening in spending and had priced in policy easing well before it was forthcoming.

Second, even if the central bank and market participants share the same view as to the likely outcomes for the economy, they may differ as to how to characterize the risks associated with those outcomes. For example, the possibility of a significant adverse tail event that might trigger pernicious and nonlinear dynamics could require weighing that possibility more heavily in policy choice than an equally likely (or unlikely) outcome that had more predictable consequences for the economy. As a result, the mean—an equally weighted average of possibilities—would no longer be the appropriate summary statistic describing the prospects for the economy. Part of the pronounced response to the announcement following the May meeting this year may have been associated with a realization by market participants of the extent to which the FOMC wanted to avoid certain events and its willingness to shade policy if necessary below that which was consistent with the mean outcome for the economy.

The final source of confusion is when market participants' understanding of the policy rule differs from the rule actually applied. Such misperceptions may arise because the policy response of the central bank to the economy is likely to change over time with economic events. Most clearly, the extent to which the Federal Reserve had to lean against inflation pressures through the 1980s was due to the need to counter outsized inflationary expectations. Bringing the trend rate of price increases down required being asymmetric—by greater tightening against inflationary shocks than easing to offset comparable-sized disinflationary shocks. With inflation now running at what most people would call a working definition of price stability, the need to be asymmetric regarding inflationary and disinflationary shocks has been removed, with obvious consequences for the policy reaction function.

What is a central bank to do?

The best solution for dealing with potential discrepancies between the views of central bankers and those of market participants is to get both parties to speak more clearly and listen more closely to each other. Over time, the FOMC has significantly increased the amount of information it releases about its policy setting. The announcement of policy action has expanded over its nine-year life to include a description of the economic outlook, an assessment of risks to the FOMC's dual objectives, and details of the voting outcome. Outside that formal announcement, Board governors and Reserve Bank presidents speak frequently in various public forums and often answer questions from elected officials and the press. Indeed, over time, the frequency of this kind of communication has increased. So, too, has the attention these comments receive in various media—as easily witnessed by the presence of two satellite transmission trucks out back.

While central bankers are trying to speak more clearly, market participants also need to listen more attentively. In particular, they need to hear a message contained in virtually all speeches by Federal Reserve officials: “The views expressed are my own and are not necessarily shared by others in the Federal Reserve System.” Except for official testimonies of the Chairman or the other governors, which are typically reviewed by the entire Board, most of what is said in a policymaker's speech represents one person's opinion. If a few speakers in a row share a similar outlook or stress the same issue, the reason is probably that the speakers individually think the topic is important, not that they have been induced to keep “on message.” The truth is that monetary policy is made by 19 people whose views on the way the economy works span a wide band in the economic spectrum, and when they speak, they speak for themselves.

Over the years, monetary policymakers have listened more closely to the message from markets. Inferring policy expectations from money market futures prices has become a cottage industry across the Federal Reserve System. Recently, the availability of options on many

of these futures opened a window to gauge market conviction about those expectations. And the availability of surveys of market participants' expectations and real-time data on economic releases has helped us answer the questions, "What did market participants know, and when did they know it?"

Despite the effort on both sides of the public-private divide, surprises sometimes happen. Their occurrence raises the issue of whether policymakers should take into account prevailing market expectations when setting policy. Indeed, one could ask the extreme question: If efficient markets best synthesize all available information, why would a central bank ever dare to deliver a policy outcome diverging from that embodied in financial market prices? This question, often asked inside and outside policymaking circles, has three complementary answers.

First, as the Romer's demonstration of the usefulness of Greenbook forecasts suggests, markets may not always have superior information or act on that information.⁴ An intriguing aspect of the problem is whether market participants use the information they have efficiently. The formation of market expectations about the economy as it relates to policy choice by the FOMC has the following three properties:

- There are a few (usually two) likely choices for the policy outcome of an FOMC meeting.
- The announcement of the policy action is usually fixed in time (with the rare exception of intermeeting moves).
- Some members of the private sector are viewed as experts in divining policy intention.

These conditions are precisely the ones found in models of information cascades, in which investors defer to received wisdom about a likely action and fail to use their private information efficiently (as in Bikchandani, Hirshleifer, and Welch 1992). Why policymakers should

feel obliged to validate expectations based on the actions of traders who are taking positions because other traders who read something in the newspaper are also doing so is not obvious.

Second, the exercise of getting the message from market prices is not trivial in a world of time-varying risk premiums and market dynamics that might be amplified by technical considerations such as hedging of mortgage portfolios, which has grown rapidly in recent years.

Third, at a more basic level, the anchoring of expectations would be an open issue if monetary policymakers were to look for the likely course of interest rates from market participants, who, in turn, are trying to infer what policymakers will be doing.⁵ To rely exclusively on market prices to inform policy decisions is like looking into a mirror. Someone ultimately has to be responsible for forming a view on the economy and framing the policy response. In the United States, the Congress has determined that this responsibility should fall to the Federal Reserve.

That the central bank should not abdicate its responsibility for setting interest rates by transferring it to the market is one issue that has an easy answer. Another is whether it should at least be responsive to messages from the market. The policy multiplier at the heart of Brainard's principle of attenuation represents a chain of three factors—how aggregate demand responds to a change in financial conditions, how financial conditions move in response to a policy surprise, and how large is the surprise triggered by a given policy action. Any uncertainty about the way the economy will respond to a policy action should incline the central bank to avoid major policy surprises because it is the potential for an outsized reaction that makes the consequences for spending unpredictable. Anyone doubtful that such considerations enter into the policy debate should refer to the FOMC transcripts of 1994. In the early stages of policy tightening that year, Committee members placed considerable weight on not getting too far ahead of market expectations because of a concern about an outsized market reaction.

That attenuation principle, of course, represents a tradeoff between the benefits of an expected result attending a policy action and the risks attending that action. As a result, the principle does not mean that central bankers should never surprise markets, but only that they should be judicious in doing so. In a changing economic environment, where both the possibility of surprising market participants and the uncertainty about their response are high, such considerations may loom especially large.

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Endnotes

¹The original paper is Brainard 1967. For a clear description of its importance in policy choice, see Blinder 1998. Much work on monetary policy and uncertainty has been done since. For a review, see Sack and Wieland 2000. Note that Blinder refers to Brainard's result as the principle of "conservatism" in central banking. "Attenuation" strikes me as a more neutral term.

²That statement itself is controversial, as can be seen by comparing Rudebusch 2001, who argues that the finding of gradualism is an artifact of the estimation technique, and English, Nelson, and Sack 2003, who hold that gradualism still survives after the appropriate econometric treatment.

³Söderström 2002 provides an example in a conventional dynamic macro model.

⁴See Romer and Romer 2000, who show that the Board staff forecast systematically outperformed that of market participants.

⁵Reinhart 1991 examines the problems associated with a policy rule keyed exclusively to financial market expectations.

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