

Federal Reserve Bank of Cleveland

Waiting for Policy Rules

by Joseph G. Haubrich

Don't just do something, stand there!

—Daniel Berrigan, S.J.

As the U.S. economy continues in the midst of a record expansion, with low inflation and low unemployment, it is hard to find fault with the policies of Federal Reserve Chairman Alan Greenspan. Yet the very success of the past decade points out by contrast the problem of sustainability. Without the technology to clone Greenspan or download the collective wisdom of the current Federal Open Market Committee into a computer, is there any way to preserve the current good times?

One approach, used at several central banks around the world, institutes a specific policy rule, such as a target for the inflation rate or for the money supply. The advantages—and disadvantages—of removing discretion from the central bank and instituting a rule have long been a topic of discussion in both government and financial circles. Proponents of rules can cite fairly compelling instances in which policy has failed and strong theoretical arguments against discretion.¹ Indeed, to proponents, the manifest reluctance of many central banks to adopt rules appears puzzling.

But most discussions ignore the central problem of *when* to adopt rules. Even if a rule is preferred to discretion, there are several reasons why policymakers might—and should—delay committing to a rule. Most discussions also ignore the related problem of when to drop the rules. Once the importance of timing is recognized, the value of delaying the commitment to rules can be appreciated. Policymakers' recalcitrance to change,

far from indicating the triumph of politics over good sense, represents an appropriate response to an uncertain future.

■ The Case for Rules

People easily recognize the need for commitment in the face of temptation, whether it takes the heroic form of Ulysses lashing himself to the mast or one more mundane, such as removing Solitaire from the computer or throwing out the chocolate cake. The need for commitment also applies to governments and central banks; as both face temptations to act at a given moment in ways that run counter to their long-range goals, commitments or rules provide a means of resisting temptation and staying the course.

Economists refer to the tendency to yield to temptations that undermine a desired goal as the dynamic inconsistency problem. Simply put, the long-range plans people (and governments) make often fall apart because people are free to reassess the situation at any given moment and choose a new course of action that seems preferable at the time. One small piece of cake won't ruin the diet, and so, reassessing the situation at each meal, the dieter eats the cake, ruining the diet. The long-term plan (that's the dynamic part) is inconsistent because what looks best in the short run, when the choice is made, does not add up to what is best in the long run.

For example, central banks are sometimes tempted to exploit the so-called inflation–output trade-off. Because unexpected inflation has been noted to boost output, even a central bank with a desire to keep inflation low may attempt to cause a bit of it to help bring down a high

Should central bankers be free to decide what policy actions they will take and when they will take them, or should they agree to an explicit policy rule and stick to it? The discretion-versus-rules debate is an old one, but unfortunately, it has rarely addressed the fact that the benefits of moving from one regime to the other depend on the timing of the move. This *Economic Commentary* explores the value of waiting to adopt rules and the way it is affected by uncertainty.

unemployment rate. So it increases the money supply. The public, however, almost always anticipates this tendency, so far from being unexpected, the inflation caused by the central bank is quite expected, and unemployment doesn't fall. The end result is higher inflation and no change in the unemployment rate.

Why would conscientious policymakers attempt such a futile exercise, one that typically provides, no less, the opposite result from the one they wish to achieve? The temptation arises because the benefits from the long-run policy come from changing peoples' expectations (here, getting them to expect low inflation). At any given moment, however, people's expectations are fixed, and the policymaker hopes to use that to his or her advantage. An explicit commitment to an inflation target—a rule—would prevent the central bank from succumbing to the temptation of higher inflation.²

Likewise, bank regulators face temptations to act in ways that work against the long-range goals of the overall regulation effort. For example, a commercial bank on the verge of failure presents a regulator with a difficult dilemma. Bailing the bank out is undesirable lest other banks, expecting a rescue, become sloppy in their risk management. But the possibility of a financial panic and damage to the payments system might lead the regulator to make the rescue. So long as the decision to bail out failing banks rests with the regulators, dynamic inconsistency will be a factor; temptations will be succumbed to. Because banks understand this, they know the possibility of a rescue exists, and they feel free to take riskier positions than they would otherwise.

A commitment on the part of the regulatory authority to let banks suffer the consequences of their own business decisions would take the rescue decision out of the hands of regulators and make banks less willing to take on riskier positions than they would accept on their own. With banks taking on only the risk they can afford to accommodate, it might even lead to a safer banking system.

Thus, a statute or constitutional amendment requiring zero inflation or preventing bank bailouts provides a commitment in the same way that a distraught father, tired of his daughters neglecting their homework to watch Pokemon, makes a commitment by moving the television into the garage.

■ Now or Never?

The perspective of dynamic inconsistency produces an important insight: rules are often better than discretion for achieving goals requiring a lot of discipline. Too often though, the decision to adopt rules is cast as a once and for all, now or never decision. This is almost never the decision actually facing policymakers. Rules might be adopted today, but they might be adopted tomorrow. (Actually, that is good news for advocates of rules, since otherwise the problem would be moot, having been decided at the founding of the Federal Reserve in 1914, if not at the Constitutional Convention of 1789.)

What difference does this timing question make? It may make sense to commit to rules right away in some cases, but not always. It may not be best to adopt a rule for zero inflation at the trough of a

serious recession. It may not be best to move the television to the garage just before the big special on the History Channel. Timing matters if there is some possibility of *regret* that adopting rules was a bad idea, at least in the short run.

If there is a possibility of regret, then, for the time being, discretion looks better relative to rules, and we wait to commit. Because a commitment to zero inflation would prevent us from using monetary policy to get out of a possible recession next year, we delay the commitment. When the television is in the garage, we can't tune into the last quarter of *Monday Night Football* if it turns out to be an exciting game, so we wait to decide. Discretion today gives us an option, and that option has value. If next year is not a recession, or if the football game is boring, we can adopt the rule and commit then. The possibility of regret is essential to this argument, though, because if there is no chance we will regret the commitment—if it is not possible for monetary policy to get us out of a recession, or if we never want to watch TV—then adopting a rule right away is the right thing to do.³ Whenever there is the possibility of regret, however, the option of discretion has value.

Nonetheless, the possibility of regret does not mean that discretion is always better than rules. In the long run, the commitment to zero inflation is better. If we had to choose once and for all, now or never, we'd choose rules. On balance, rules are better—just not right now. This creates the option to wait if the decision is not now or never.

This option to wait, the timing option, gives policymakers a legitimate reason for not adopting rules right away. Looking at the rules-versus-discretion question from the perspective of options can tell us a lot more than this, because we know what the important influences of an option's value are—what makes it more or less valuable.

Being an option, the value to waiting is very sensitive to uncertainty. It is worth taking a little time to see why this is so. An option gives the *right* but not the obligation to do something. Perhaps best known in the financial world are stock options such as puts and calls, which give you the option to sell or buy the stock at a predetermined price. But options are much more pervasive than

that. An empty car factory gives a firm the option to start producing more cars (they can, but don't have to). A marriage proposal gives one person the option to get engaged. The ability to commit to a rule gives the central bank the option to adopt a zero-inflation rule.⁴

The effect of uncertainty on option values is best illustrated by considering the case of stock options. For example, consider a call option that gives the holder the right to one share of Haubrich.com at \$10. Haubrich.com, being a risky sort of Internet startup, has a 50 percent chance of being worth \$15 tomorrow and a 50 percent chance of being worth \$5. The expected value of the stock is \$10, and a rational investor would pay \$2.50 for the option, since there is a 50 percent chance of a \$5 profit (\$15 less the "strike price" of \$10).⁵ Let's suppose the stock got riskier, so it now has a 50 percent chance of being worth \$20, and a 50 percent chance of being worth \$0. (Note that its expected value is still \$10.) The option is now worth \$5, from a 50 percent chance of a \$10 dollar profit. The option allows the investor to profit from the upside of the risk, but avoid the downside. That is the particular value of options. If it's not worth buying the stock, don't exercise the option. If it's not yet worth starting up the plant, don't exercise the option. If it's not worth committing to the rule, don't exercise the option.

A nonfinancial example of how uncertainty affects the value of an option is the familiar "two-minute drill" in football. Often when a team is behind with only a few minutes left to play, its offensive strategy changes markedly, and the team passes more, sends the receivers on longer routes, and tries trickier plays such as the double-reverse. If this style of play gives a better chance of scoring, why don't teams use it during the entire game? The reason is that it is a high-risk strategy, and a team behind near the end of the game has a sort of option. If they score, they will win—if they don't score, they lose. Just like an option, if things go well, the team benefits, while if things go badly, it is no worse off than before. As a consequence, all the bad things that might happen with the two-minute drill—fumbles, interceptions, botched plays—though more likely, don't really matter, since the team is already behind. Just like the option holder, the team only cares about the upside, and so a high-risk strategy is good.⁶

What this means for the world of monetary policy is that uncertainty about the economic environment makes the option to wait more valuable and makes the policymaker want to wait even longer to adopt rules. If booms and recessions become more severe, then we are more likely to wait and commit later. The reason is that there is now more of a chance of a deep recession. The fact that there is also more of a chance of a spectacular boom doesn't matter—we'd commit to rules whether the boom was big or small.

■ Backing out, Reneging, Weaseling, etc.

An astute reader will by now be objecting that fathers and governments can rarely, if ever, make fully irrevocable commitments. This ability to move from rules back to discretion raises questions about the timing of the move back and about how the possibility of the move back affects the desirability of rules in the first place. With regard to timing, when regret becomes salient enough, that is, when the rule is really hurting us, it is time to move back. Thus, the television in the garage comes back when the Browns make the Super Bowl. Governments or central banks abandon rules to gain greater flexibility when they face difficult economic times. For example, in 1899 Argentina established a currency board, adopting a rule-based approach to monetary policy. In the wake of the Great Depression, the finance minister, Raul Prebisch, convinced the government to switch to the more discretionary regime of a central bank in 1935. This arrangement lasted until 1991, when seeking a way to curb hyperinflation, Argentina returned to rules and reestablished a currency board.

The ability to back out makes people more willing to commit—it's not like you have joined a Trappist monastery and given up TV forever, it's in the garage. If you need to, like Argentina in the Great Depression, you can back out of the monetary policy rule. In effect, it adds an option value to the *rules* side of the question—an option to renege on the rule. But there are further considerations.

It is costly to make a commitment, whether that be passing a constitutional amendment or lugging the television out to the garage, and it is also costly to back out of the commitment, either by overturning the amendment or lugging the television back.

Considering costs adds some nuances to the question of when to commit to rules. Naturally, a cost to committing makes us less willing to commit. Any cost of backing out also makes us less willing to commit because it won't be so easy to get out of the rules if we later regret our commitment. Reneging costs have two effects: a direct effect that delays the switch from discretion to rules (since it's costly to back out), and an indirect effect that delays the switch from discretion to rules (since it will be harder to back out when we regret the rule).

Overall, commitment and reneging costs combine to create a sort of inertia in the policymaker—a tendency to continue with the current policy, whether that be rules or discretion. If the central bank has adopted rules, it won't abandon those rules, be they zero inflation, fixed exchange rates, or what have you, to fight a minor shock or an unemployment rate 0.1 percent above the average. It would cost too much to do so. But it is also likely that the central bank may let inflation get a bit out of hand before it commits to a rule, since commitment is costly. Inertia does not mean that the central bank never commits to rules, but that it will move more slowly and commit less frequently.⁷

Inertia means that a given constellation of inflation and unemployment rates may call forth very different policies depending on whether the central bank started in rules or discretion. The distraught father may not bring the television in from the garage to watch a rerun of *ER*, but it might induce him to delay moving it out until the morning.

Even with inertia, though, the central bank's ability to switch in and out of rules can play havoc with the public's expectations. A small change in inflation or unemployment may mean little—or it may mean the central bank is nearing or crossing a boundary that will usher in a radically different regime. Part of the difficulties in assessing the public's mood may result from “inflation scares” when people begin to worry that a change from the low-inflation rules regime is imminent.

■ Conclusion

Economic policy takes place in a complex, changing world of uncertainty. Paradoxically, that may mean policymakers do best by establishing rules and committing to them. But that is not the end of the story. Policymakers face timing questions as well. Rules are good. Commitment is good. But not always. Knowing when to wait, and waiting for the right moment to commit is important. The firmest believers in the institution of marriage, especially, understand the need to wait for the right person, and the right time. Such a perspective can give a clearer light on why policymakers may at times be reluctant to change the course—be it rules or discretion. It may explain why small changes in the economy may drastically alter people's expectations. It may explain why changes in the uncertainty about inflation and unemployment may be more important for policy than today's levels.

Thus, in the current environment of strong growth and low inflation, the immediate need for a policy of loose money to rescue the economy from a recession seems remote, and this recommends a commitment to a monetary policy rule such as an inflation target. Potential uncertainty about the sustainability of the stock market and the relevance of the “new economy” based on the productivity gains of computers and the Internet might raise a cautionary flag, however. So, important as they are, rules are not the only option.

■ Footnotes

1. For a recent example, see Ben S. Bernanke, Frederic S. Mishkin, and Adam S. Posen, “What Happens When Greenspan Is Gone?” *Wall Street Journal*, January 5, 2000. Most recent discussions build on work done earlier, for example, William T. Gavin and Alan C. Stockman, “A Price Objective for Monetary Policy,” Federal Reserve Bank of Cleveland, *Economic Commentary*, April 1, 1992, and W. Lee Hoskins, “Defending Zero Inflation: All for Naught?” Federal Reserve Bank of Cleveland, *Economic Commentary* April 1, 1991.

2. The terminology of dynamic inconsistency comes from Finn E. Kydland and Edward C. Prescott, “Rules Rather than Discretion: The Inconsistency of Optimal Plans,” *Journal of Political Economy*, vol. 85, no. 3 (June 1977), pp. 473–91. An important application to inflation and unemployment was done by Robert J. Barro and David B. Gordon, “A Positive Theory of Monetary Policy in a Natural-Rate Model,” *Journal of Political Economy*, vol. 91, no. 4 (August 1983), pp. 589–610. For examples of the reasoning behind commitment (some of them rather sanguinary) to

areas such as international diplomacy and the arms race, see chapter 5 of Thomas C. Schelling, *The Strategy of Conflict*, New York: Oxford University Press, 1960. A good nontechnical description of dynamic inconsistency can be found in Herb Taylor, "Time Inconsistency: A Potential Problem for Policymakers," Federal Reserve Bank of Philadelphia, *Business Review*, March/April 1985, pp. 3–12.

3. Thus, proponents of rules generally believe that unanticipated inflation has much larger effects on output than does anticipated inflation, a question that itself is the subject of some debate.

4. The option approach to timing is from Robert McDonald and Daniel Siegel, "The Value of Waiting to Invest," *Quarterly Journal of Economics*, vol. 101, no. 4 (November 1986), pp. 707–28. A nontechnical introduction to the issues can be found in Avinash K. Dixit and Robert S. Pindyck, "The Options Approach to Capital Investment," *Harvard Business Review*, May–June 1995, pp. 105–15. Applications to monetary policy can be found in Joseph G. Haubrich and Joseph A. Ritter, "Dynamic Commitment and Incomplete Policy Rules," *Journal of Money, Credit, and Banking*, forthcoming. Application to broader policy questions, such as banking regulation,

currency boards, fiscal policy, and the gold standard, can be found in "Committing and Reneging: A Dynamic Model of Policy Regimes" by the same authors, Federal Reserve Bank of St. Louis, Working Paper no. 99-020A, 1999.

5. For simplicity, this example assumes a risk-neutral investor.

6. I thank Jeremy Siegel for this way of looking at football.

7. Since this inertia is the result of the option value, changes in uncertainty will affect it. Generally speaking, an increase in uncertainty will make the policymaker less likely to commit to rules, but also less likely to back out of rules once committed. The idea is that as uncertainty increases, the option value of waiting to change (be it from discretion to rules or vice versa) increases.

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