

# Monetary Rules and Contracts: Why Theory Loses to Practice

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*The appeal of a simple rule is obvious. It would simplify our job at the Federal Reserve, make monetary policy easy to understand, and facilitate monitoring of our performance. And, if the rule worked, it would reduce uncertainty... But, unfortunately, I know of no rule that can be relied on with sufficient consistency in our complex and constantly evolving economy.*

—Paul Volcker  
Chairman of the Board of Governors  
of the Federal Reserve System

Chairman Volcker's view<sup>1</sup> probably captures the impressions of most central bankers concerning the wisdom of establishing a fixed rule or procedure for conducting monetary policy: "Sounds fine in theory, but it won't work in practice." Meanwhile, economists have been remarkably productive in producing arguments and refining their theories in favor of a monetary rule over the

years. Much of their research has pointed to ignorance, uncertainty, and credibility as critical factors underpinning a need for some sort of fixed rule—a contract—for conducting monetary policy. Nevertheless, no government or its central bank agent seems disposed to make *prior commitments* about future monetary policy actions. Discretion everywhere reigns over rules.

One reason for this may be that the literature on rules focuses almost exclusively on the potential benefits of establishing constraints on central bank behavior. While a rule might yield some benefits, establishing and maintaining a rule would prove a costly exercise. Indeed, when viewed from the perspective of some basic notions concerning contracts, the lack of a monetary-

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policy rule can be explained—at least in part—by the costs of negotiating and enforcing a policy contract.

#### WHAT IS A “RULE”—AND WHY MIGHT WE WANT ONE?

Debates frequently are prolonged because people fail to define their terms precisely; the same word consequently means different things to different people. The “rules vs. discretion” debate has suffered this difficulty. The very term “rule,” for example, has been used in a number of different senses, and has been loaded with meanings that tend to obscure some of the critical issues. In particular, the proponents of rules have been described as favoring a “passive” monetary policy, whereas advocates of discretion are seen as defenders of an “activist” approach. In fact, monetary policy can be rule-oriented—conducted according to a prespecified contract—but highly activist in reacting to external events.

A monetary policy rule specifies the nature of the relationship linking the instruments of policy (the growth rate of the monetary aggregates, for example)<sup>2</sup> to the policy objectives (the inflation rate is a possible objective) or to information related to the objectives (commodity prices might be a leading indicator of inflation). The rule might indicate there is no relationship—that policy instrument settings will not be changed regardless of what happens to the other economic variables. Such a rule obviously involves a passive approach to monetary policy. Alternatively, the rule might indicate that policy instruments will be changed in a particular way when something happens to the objectives or to other information variables—that is, there is feedback from the economy to the policy actions. For example, the rule could state that the money supply would be reduced by one percentage point for each one percentage point

rise in inflation, and vice versa. Such a rule represents an activist approach in the sense that monetary policy is responding to external events. It does *not* involve discretion, however, because the central bank is *precommitted* to respond in a particular way to changing external developments. Indeed, what makes for a rule is not inaction but rather the *imposition of constraints* on behavior. When constraints on behavior are accompanied by mechanisms which penalize deviations from the rule, then a rule becomes a contract. The monetary authority then *must* do what the rule says and not something else. Discretion then can be defined as the absence of any sort of rule or contract.

Contracts and rules are rife in our economy. People agree to show up for work at particular hours, pay their electric bills before the end of the month, and “love, honor, and cherish” their spouses. Each of these actions represents an agreement to give up some discretion—to establish a rule. When there is some cost to having a change of mind (getting fired, having the power shut off, or divorce proceedings), then the rule amounts to a contract.

Many economists, for varying kinds of reasons, have suggested that constraints ought to be placed on the central bank’s behavior. They cite lack of information, uncertainty, and credibility as factors which argue for a policy rule. A rules-oriented policy, it is claimed, would yield a more stable, less inflation-prone economy.

**Ignorance and Rules.** Some of the earliest arguments for a monetary-policy rule were based primarily on a view that central bank officials (and everyone else in the world!) lacked the information and knowledge necessary to make good policy decisions. Milton Friedman argued, for example, that although changes in money-supply growth had important effects on the pace of economic activity, the link between the behavior of money and the economy was hard to identify with any precision.<sup>3</sup> In particular, he argued that changes in money growth affected the economy only after a long lag. Furthermore, the length of the lag was highly variable. The central bank could estimate the length of the lag, but its prediction could be far

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<sup>2</sup>This discussion presumes the Fed can control the money supply with great precision, so that it can be thought of as a policy instrument. In the current institutional environment, the Fed lacks such a strong degree of control. In reality, therefore, the money supply should be thought of as a “target” to be influenced by policy instruments such as open-market operations and the discount rate. The main points of the “rules vs. discretion” debate can be addressed more clearly if this complication is ignored.

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<sup>3</sup>See Milton Friedman, *A Program for Monetary Stability* (New York: Fordham University Press, 1960).

off the mark since the observed lag length seemed to jump around a great deal. For example, the central bank might boost money growth today to stimulate the economy, expecting to see an effect in, say, six months. If the actual lag were 18 months, the stimulus might show up when the economy was already expanding, perhaps prompting a surge in the inflation rate. To avoid the risk of such destabilizing policy actions, Friedman recommended the central bank pursue a constant growth rate for money year in and year out. This so-called “fixed growth-rate rule” is an example of a passive policy rule. The money growth target is left unchanged regardless of incoming economic news. The intellectual cornerstone of this policy proposal is the lack of intellectual prowess: Monetary policy could be stabilizing in principle, but the central bank lacks the necessary information to make it work.

**Rational Expectations and Rules.** A more recent argument in favor of passive rules is based not on the central bank’s *lack* of information, but rather on a view that all relevant information gets fully exploited when people make economic decisions. This logic is especially important when applied to the exercise of forecasting, because it suggests that people do not rely on naive prediction methods. Rather, they take account of whatever information is relevant for determining what it is they want to forecast. The notion that people’s expectations reflect whatever economic theory suggests is relevant in forming a prediction is called the “rational expectations” hypothesis.<sup>4</sup> If expectations are rational, then, in principle, monetary policy cannot be used to stabilize production and employment. It only determines the inflation rate.

The notion that an increase in money growth yields at least temporary gains in output and employment has a long history in economics. Some economists have argued, for instance, that an *unexpected* increase in money growth stimulates

employment, because the monetary surprise raises inflation above what people were expecting, prompting firms to hire more workers. Suppose firms were expecting a 4 percent inflation, for example, and in light of this, granted a 6 percent wage increase. The firm plans to grant a real (inflation-adjusted) wage increase of 2 percent. If inflation actually turns out to be 7 percent (because the central bank accelerated money growth), then wages adjusted for inflation *fall* 1 percent instead of rising. Workers can be hired at a lower real wage, so firms expand employment.

The theory of rational expectations punctures a hole in this logic, however. It suggests that, *on average*, business and individuals will not make persistent forecast errors. Some predictions will overshoot, some will fall short of reality, but, on average, forecasts turn out to be right. In essence, the rational expectations view argues that businesses and individuals will take account of recent and prospective central bank actions when forming forecasts. Therefore, the central bank cannot spring a surprise change in inflation on an unsuspecting public—unless perhaps the central bank possesses information superior to the public’s. It seems doubtful, however, that the central bank has such an information advantage.

The rational expectations theory remains a point of controversy. Its advocates emphasize that the theory tends to support the case for a policy rule. If changes in money growth have no systematic effect on output or employment because they are already anticipated by the public, then monetary policy may as well focus on maintaining a constant growth in the money supply.<sup>5</sup> Such a rule does no better than any other policy in stabilizing labor markets and production, but it does result in less uncertainty about the prospects for future inflation. Thus, the rational expectations case for a policy

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<sup>4</sup>For a basic discussion of the rational expectations approach to monetary policy, see Donald J. Mullineaux, “Money Growth, Jobs, and Expectations,” this *Business Review* (November/December 1976). For a survey of the literature on rational expectations, see Brian Kantor, “Rational Expectations and Economic Thought,” *Journal of Economic Literature* (December, 1979), pp. 1422-1441.

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<sup>5</sup>Some economists argue that expectations can be rational, yet monetary policy can still influence employment and output because people make long-term contracts and cannot adjust promptly to unexpected developments like a substantial shift in money growth. To the extent people are bound by such contracts, the case for a *fixed growth-rate* rule is less strong. However, the case for a rule in the more general sense (involving feedback from the economy) still holds. See Thomas J. Sargent and Neil Wallace, “Rational Expectations and the Theory of Economic Policy,” *Journal of Monetary Economics* (1976), pp. 169-183.

rule is based not on ignorance at the central bank, but rather on a view that maintaining a fixed growth rate for money keeps uncertainty about future inflation at a fairly low level.

**Credibility and Rules.** A still more recent case for the superiority of rules over discretion builds on the role of credibility as a requisite for monetary policy decisionmakers. It argues that establishing a policy rule is an effective means of coping with what is called the “dynamic inconsistency problem.” Dynamic inconsistency occurs whenever a policy is calculated to be optimal for today, tomorrow, and forever, but then no longer seems optimal once tomorrow arrives. Dynamic inconsistency problems crop up in all kinds of areas. For example, suppose Jack and Jill announce to their son Biff that misbehavior will bring on a good spanking. When Biff writes on the wall with lipstick, Jack and Jill figure they can avoid the pain they and Biff will suffer by withholding a spanking, but promise to punish “next time.” But when next time comes, the same logic applies. Biff is never spanked, and misbehavior becomes the order of the day because Jack and Jill’s policy lacks credibility. One way to establish credibility is to *precommit* to a loophole-free policy of spanking. (Swearing an oath is probably not enough, so perhaps the task could be delegated to the loyal butler Jeeves.)

A similar kind of logic applies to monetary policymaking. Suppose the central bank announces a target of zero inflation to be achieved through strict control of the money supply. If inflation rises to 5 percent (the economy misbehaves), the central bank needs to slow the growth of the money supply (administer a spanking). But a slowdown in money growth is likely to produce a temporary rise in unemployment (pain). To avoid the pain, the central bank does not execute its policy of restrictive money growth, but promises to tighten “next time.” When inflation accelerates again, the same logic applies and the central bank never tightens. Its policy pronouncements, not surprisingly, lack credibility. Like Jack and Jill, the central bank should *precommit* to a policy rule. Such a rule might be a fixed money-growth policy, or more generally, it could allow for feedback from inflation or other economic variables to the central bank’s monetary targets. The precise form of the rule is less important than the fact that the central bank needs to precommit

itself and follow the rule unswervingly. Then the policy would possess a great deal of credibility, and a credible policy allows for quicker adjustments in inflation with only small changes in economic growth and employment—or so this theory claims.

#### WHERE’S THE RULE?

It may seem ironic that although economists have demonstrated the case for a monetary-policy rule coming from so many different points of view, few governments or central banks, if any, are operating in a rules-oriented environment. In fact, this state of affairs is not so surprising when viewed explicitly from a contracting perspective. A large body of microeconomic research on contracts explains the formation of contractual relationships in the context of such “real-world” conditions as imperfect information, uncertainty, and people’s opportunistic behavior.<sup>6</sup> These are of course just the factors cited by macroeconomists who favor establishing a monetary rule. But the macroeconomic literature has focused almost exclusively on the benefits of a policy rule. The contract literature also emphasizes the fact that producing any kind of contract is a costly undertaking. And there is reason to believe that establishing a monetary-policy contract or rule could be very costly.

**Some Contract Basics.** Contracts are useful devices for preventing problems in relationships—or solving them, should they occur. Business, family, and personal relationships are all characterized, in varying degrees, by contractual agreements. In the business world, contracts are very common in what economists label “principal-agent” relationships. In such relationships, one individual or business (the agent) performs some

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<sup>6</sup>For a good discussion of some basic principles on contracts, see Oliver Williamson, *Markets and Hierarchies: Analysis and Antitrust Implications* (Free Press, 1975). Williamson argues that there are other factors as well which argue in favor of contracting, such as the existence of “idiosyncratic investments.” Such an investment occurs when parties form relationships which involve large “sunk costs,” which in turn make it difficult to abandon a relationship. When one party builds a pipeline to another party’s oil well, for example, the large sunk costs argue for a contract to prevent each party from exploiting the other. We do not explore the relevance of this factor for a monetary policy rule in this paper.

activity on behalf of another (the principal). Workers (agents) perform tasks on behalf of management (principals); managers in turn act as agents for stockholding and debt-holding principals. There is a host of other principal/agent examples: clients/lawyers; athletes/agents; member firms/trade associations; voters/politicians, and so forth.

At the root of a contract is some specification of “*who does what for whom*.” If principals and agents were honest, extremely rational, sure of the future, and knew everything that everyone else knows, there would be little need for complicated contracts. The parties would commit to an action, then always do what they agreed to do. If they didn’t they would be quickly detected as “shirkers” and the relationship would be dismantled. (Principals would fire agents or agents would quit and form another relationship.) The “market” thus would provide incentives for principals and agents not to shirk, by offering opportunities to form relationships with “honest” agents or principals.

Unfortunately, not all people are honest, the future is far from certain, information is imperfectly distributed, and most people have limits to their capacities to process information. These real-world conditions make it difficult for markets and simple contracts (“I agree to do task X”) to provide strong incentives for principals and agents not to shirk. A shirking agent can point to an unexpected contingency (a malfunctioning machine) to explain poor performance, for example, or blame co-workers, or simply run the risk of not getting caught. Principals and agents respond by devising more complicated contracts which involve *more details* concerning how the parties will measure performance, respond to unexpected developments, and mediate disputes.

Contracts of this sort can help deal with the problems of incentives in the principal/agent setting. In particular, when some party in the relationship has opportunities to “shirk” or otherwise behave opportunistically (by, say, taking long lunches or delivering products of inferior quality), some form of contractual constraints on behavior (a one-hour lunch break or specification of a minimum-quality standard) may prove beneficial to the relationship. In general, contracts serve to limit the range of an economic actor’s discretion, presumably to some good end for at least one party

in a relationship.

Contracts are costly to write, however. The “details” of performance (who is to do what when) must be specified, contingencies which will constrain behavior need to be identified, alternative mechanisms for enforcing performance need to be assessed, and an agreement must be negotiated. All of this takes time and energy, and may require the use of “outside” resources (lawyers, accountants, consultants, and so forth). The more detailed the contract specifications, the higher will be the costs of “producing” a contract. Most contracts accordingly allow the parties in a relationship to exercise some discretion. The residual discretion will permit some shirking, but the costs of writing and enforcing a more detailed contract outweigh any advantages to the parties involved.

These basic principles of contracting provide some clues to the relative dearth of rules (contracts) in the monetary policy arena. In particular, it is costly to write a monetary policy contract (specify “who does what for whom”) for a number of reasons.

It is difficult for monetary policy principals to structure incentives for their policymaking agents, for example, because the principals: (1) do not generally agree on the objectives of monetary policy; (2) get little help from markets in monitoring and influencing the behavior of policymaking agents;<sup>7</sup> and, (3) must bear high costs both to communicate with their agents and to specify the details of a monetary policy contract in the face of shifting or uncertain economic conditions.

#### **Monetary Policy—Who Does What for Whom?**

Writing contracts in a private setting is by no means an easy task, but it is helped along by a clear sense about what the principals and agents want. Principals (stockholders) want to increase their wealth as much as possible and hire agents (managers) to help achieve this end. The stockholders recognize that managers may prefer to pursue their own interests, so they structure

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<sup>7</sup>Some analysts suggest that changes in the prices of certain assets (gold, foreign exchange, and Treasury bonds are examples) can “discipline” a central bank. But, in the absence of either a rule or some consensus on the specification of monetary policy’s objectives, there is no strong incentive for the central bank to respond to asset price changes, especially if such changes can be rationalized after the fact.

contracts in order to provide managers with strong incentives to act in the stockholders' interests. Stockholders also monitor performance and penalize managers who shirk. Managers in turn face a similar problem when, acting as principals, they hire workers (agents) to help achieve management's objectives. Managers likewise devise contracts that discourage shirking, and they devote efforts to enforcing those contracts.

How well does such a framework "fit" the exercise of monetary policy? In a democracy, the ultimate principals (the "stockholders") in a monetary policy setting are the public, or more precisely, the voters. The agent of the voters is the government (the "management") which in turn engages the central bank (the Federal Reserve System in the U.S.) as its own agent. But these monetary-policy principals and agents do not typically behave like their private-sector counterparts.

In the United States, for example, the Congress created the Federal Reserve, and it monitors the Fed's behavior quite closely. However, the Congress has not established strong, explicit *incentives* for the Fed to act in some set manner that reflects Congress's view of the government's own or the public's interest.<sup>8</sup> In particular, the Congress has not imposed on the Fed any kind of rule such as those prescribed by various economists. Instead, the Congress has given the Fed several broad objectives<sup>9</sup> and has allowed the Fed to exercise considerable discretion in monetary policy-making, perhaps because the Congress gains more than it loses from such an arrangement.<sup>10</sup> The Congress can, for example, take credit for good

monetary policy (claiming it "a benefit of Congressional oversight"), yet blame the Fed for bad policy (the "cost of having an independent Fed"). Managers of firms would no doubt like to make similar claims about their employees, but managers are themselves constrained by the discipline of their principals (stockholders) and by the actions of competing managers in the market. But neither the Congress nor the Fed is subject to market discipline in the form of competition. Nobody does it (U.S. monetary policy) better than the Congress and the Fed, because nobody else does it. Consequently, only the voters themselves can bring pressure to bear on their agents to act in their interests. But there are a number of reasons why voter-principals find it more difficult to monitor and influence the behavior of their policy-agents than their stockholder analogues.

Stockholders, for example, have a well-defined goal—wealth maximization—and a very cheap source of information concerning the performance of their managers and workers—the behavior of the company's stock price. And if stockholders don't like what they see, they can send a potent signal by selling the stock. Voters cannot look to a single figure as a ready measure of policy performance, however, because the central bank usually has been given multiple objectives to achieve—including price stability, high employment, sustained economic growth, and domestic and international financial market stability. And, unfortunately, many of these objectives are not simultaneously attainable. For example, reducing inflation can require a temporary period of rising unemployment. Not all voters may agree about how to weight the importance of these policy objectives, which raises the costs of negotiating a policy contract among the voter-principals and their legislators. Indeed, a monetary policy contract would have to be quite detailed to specify how the central bank should respond to changing economic conditions when not all of the objectives might be attainable at the same time. And the more detailed the contract, the more costly it is to write. Multiple objectives also complicate the process of monitoring policy performance.

Voters also lack the stockholders' means of signaling their discontent with their agent's actions. Unlike corporations, central banks do not have marketable stock that can be sold by unsatisfied

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<sup>8</sup>This does not imply that the Fed fails to act in the public interest. Rather, it suggests the Congress has not fully exploited its ability to induce or constrain the Fed to act in the public interest *as the Congress interprets it*.

<sup>9</sup>Broad policy objectives about achieving high employment and price stability, for example, were formulated by Congress in "The Full Employment and Balanced Growth Act of 1978," also known as the Humphrey-Hawkins Act.

<sup>10</sup>For a more complete discussion, see Edward J. Kane, "Politics and Fed Policymaking," *Journal of Monetary Economics*, (1980), 199-211. Kane contends that the "Fed's ultimate political purpose is to serve as an economic-policy scapegoat for incumbent politicians" (p. 203).

principals.<sup>11</sup> Central banks do have a liability that is generally held by the voters—money. But, again, voters have only a limited ability to “get rid of” their money holdings, since a country’s central bank is usually the sole provider of the domestic currency. (In extreme cases, the populace could stop using the domestic currency either by returning to barter economy or by using another country’s currency.) In order to register discontent about monetary policy, then, voter-principals must work through their elected representative-agents. But elections aren’t very frequent, nor is the performance of the central bank the sole issue in such elections. Of course, voter-principals could seek to influence their legislator-agents other than via the election process. But this approach has costs as well. Indeed, just discovering their own legislators’ views on monetary policy is a costly process for most voters, so the expense of organizing a political coalition to influence monetary policy-making must perforce be judged enormous—especially since there may be considerable disagreement among the voters about the appropriate objectives and strategy of monetary policy.

In sum, the principal/agent framework, which has proved useful for explaining private contracts, also “fits” the monetary policy setting in the sense that: (1) principals and agents can be identified and distinguished, and (2) there is no guarantee that agents will always act in the best interests of principals. Nevertheless, two critical conditions which characterize most private settings are not present in monetary policymaking. First, there is no single overriding objective in the exercise of monetary policy akin to wealth maximization in the private setting. The multiplicity of monetary policy objectives makes it costly both to write a contract that specifies all the possible contingencies of economic change, and to monitor performance to those specifications. Second, there is no competition in monetary policymaking, so voter-principals would have to incur substantial costs to influence central bank actions when voters

are unhappy with the policy.<sup>12</sup> These two facts, along with high information and communications costs among the principals and agents of monetary policy, appear to make the costs of writing and monitoring a policy contract or rule extremely high. Thus, while a policy rule may yield substantial benefits, the costs of negotiating and policing such a rule may well be prohibitive relative to those benefits.<sup>13</sup>

#### SUMMARY

Fact: Economists have offered a number of arguments suggesting that a monetary policy constrained to follow a rule yields results superior to a policy heavily weighted towards discretion.

Fact: Most governments and central banks around the world conduct monetary policy in a highly discretionary fashion.

From these facts, one might conclude that “economists are irrelevant to what goes on in the world.” A more likely conclusion is that, while a monetary policy contract could yield significant benefits, it is probably very costly to write and enforce such a contract. A consensus on the objectives of monetary policy unfortunately is not well defined, making any monetary rule costly to negotiate and monitor. In addition, markets and voters have little ability to discipline policy-makers. And the information and communication efforts required to write a contract and monitor adherence to it are very costly for both monetary policy principals and agents. Looking at the rules vs. discretion debate from the perspective of making a contract helps explain why discretion dominates rules in monetary-policy practice. Policy contracts are the exception, rather than the rule, because they are expensive.

<sup>12</sup>The situation is different from a corporation that has no competitor (that is, a monopolist), because stockholder-principals of the corporation can still sell their stock.

<sup>13</sup>Monetary policy has been conducted according to rules, nonetheless, during certain times and in certain places throughout economic history. If the contract-cost explanation for the absence of rules is valid, it should be possible to explain the appearance and disappearance of policy rules in terms of changes in economic and political conditions which affect principal/agent relationships. No such study has been attempted, to the author’s knowledge.

<sup>11</sup>Although the Federal Reserve Banks in the U.S. have stockholders (banks that are members of the Federal Reserve System), their stock is not marketable and the dividends on it are fixed by law at 6 percent.



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