

SCHOOLS BRIEF

Rules v discretion

This brief in our series on the modern classics of economics considers whether economic policy should be left to the discretion of governments or conducted according to binding rules

RULES RATHER THAN DISCRETION: THE INCONSISTENCY OF OPTIMAL PLANS. By Finn Kydland and Edward Prescott. *Journal of Political Economy*, vol. 85 no. 3, 1977

THE previous brief introduced game theory and its use in microeconomics; this brief looks at how game theory can be applied to macroeconomic policy—the issue of rules v discretion. Most economists agree that, in the short term at least, changes in monetary policy can affect output and jobs as well as prices. But they disagree over whether governments should tailor policies to current economic conditions (**discretionary policy**) or conduct policy according to **pre-announced rules**, such as a constant rate of monetary growth.

The rules v discretion debate goes back many years, during which economists have put forward three main arguments for constraints to be placed on central banks.

- In the 1940s Milton Friedman argued that central banks lacked the knowledge and information necessary for successful discretionary policy. It is difficult to forecast the future path of the economy, let alone when or by how much it will respond to changes in monetary policy, which feed through only after long and variable time lags. So there is a risk that discretionary fine-tuning could make the economy less stable—not more, as intended. Mr Friedman's recommended rule was a constant rate of monetary growth.

- The second argument in favour of rules came from the rational-expectations camp. They believe that changes in monetary policy have no effect on output and jobs, because workers and firms take account of policy changes in forming their inflationary expectations. If there is a monetary expansion, argue advocates of rational expectations, then people anticipate higher inflation and so will immediately increase their wage demands, leaving output and jobs un-

changed. If monetary policy can affect only inflation, central banks might just as well stick to a constant rate of monetary growth to minimise uncertainty about inflation.

- The most recent argument—and the subject of this week's chosen paper—is based on **credibility**. According to this view, rules must be made binding to get around a problem known as “**time inconsistency**”.

This concept was first identified by Finn Kydland (now at Carnegie-Mellon University) and Edward Prescott (University of Minnesota) in 1977. Their ar-

Time inconsistency, though an unfamiliar name, is in fact a familiar problem faced by all decision makers—from parents to prime ministers—who are trying to affect the behaviour of others. Start with this non-economic example. Mr and Mrs Smith want their daughter to go to university, but they are also keen that she get a summer job to learn how to act responsibly. So they offer to make up the rest of her university fees if she will get a job and earn some money; if she does not get a job and save, though, they warn her that she will get nothing.

The snag is that Mr and Mrs Smith's plan is time-inconsistent, and their daughter knows it. Even if she does not get a summer job, she knows her parents will relent. They will pay her fees because their long-term interest is for her to go to university. She decides to take a holiday.

The money game

Likewise, time inconsistency can undermine the ability of policy-makers to control inflation. Governments, like parents, often find that what originally

outcomes (see diagram).

Before the unions sign their pay deal, the government announces a tight-money policy in the hope of encouraging wage moderation. If it sticks to this, then the best bet for workers is to settle for a low pay rise in line with the expected low rate of inflation. This produces the ideal outcome: low inflation, while unemployment remains at its natural rate. If workers insist on a bigger wage rise and monetary policy remains tight, unemployment rises.

But the question the unions must ask themselves is: will the government still see low monetary growth as the best policy once the wage deal is signed? The answer is often no.

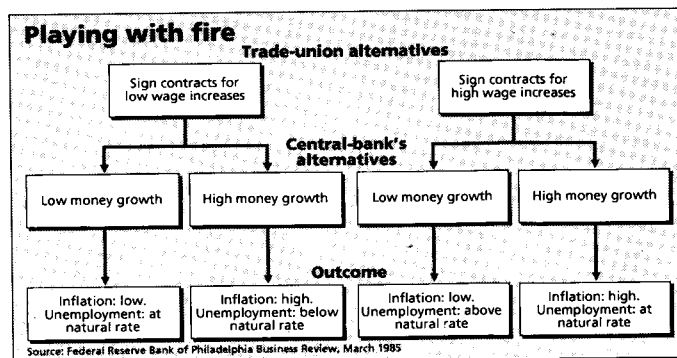
For political reasons, governments are frequently willing to trade higher inflation for lower unemployment. This raises the possibility that, if workers agree upon a low wage increase, the government may be tempted to grab the opportunity to reduce unemployment. With wages already locked in, faster monetary growth would, in the short term at least, help to create jobs. The outcome is higher-than-expected inflation, so workers suffer real wage cuts.

Suppose, on the other hand, that the unions sign a high-wage deal. Policy-makers have a choice: keep money tight and let unemployment rise, or loosen up. Workers calculate that, in these circumstances, the government will again dump its original policy and switch to what now appears to be its best option: faster monetary expansion, to keep the jobless rate down.

The low-inflation policy, like the Smiths' summer-job plan, suffers from time inconsistency. If workers realise this, and anticipate faster monetary growth, they are invariably better off signing a big pay rise. If, as expected, the central bank loosens its policy, the result is higher inflation but no gain in jobs.

So it seems inevitable that, if governments are free to select, and then re-select, the best policy at any given time as circumstances change, their policy will have an **inflationary bias**.

A low-inflation policy lacks credibility because of the possibility that the government may be tempted to change policy. So the obvious way to gain credibility is to remove that possibility, with a **commitment to rules**



title is not the easiest of reading, so we are particularly grateful for Herb Taylor's clear discussion in the March 1985 edition of the *Federal Reserve Bank of Philadelphia Business Review*.

Time inconsistency occurs when a policy which, at the start, seemed optimal for today and tomorrow no longer seems optimal to policy-makers when the time comes to act upon it. Without a binding commitment holding them to the original plan, governments have the discretion to switch to what now appears to be a better policy. The snag is that, if people realise this, they will anticipate a policy change and behave in ways which prevent policy-makers achieving their original goals.

seemed to be the optimal plan is no longer in their interest when it is time to carry it out.

One way to view monetary policy is as a game between the government and trade unions. To achieve its goal—low inflation—the government needs to influence workers' pay negotiations; but that, in turn, depends upon how the unions expect policy-makers to react.

Under the rules of the game the unions make the first move by agreeing on their annual pay rise. They must choose between a high figure and a low one. The government has the next move: if free to use its discretion, it can choose between high and low monetary growth. The game can therefore produce four possible

which everybody believes policy-makers will honour.

For example, Mr and Mrs Smith could put all their savings into a trust fund for their daughter, with instructions not to release the money unless she gets a job. This is more likely to encourage her to get a job.

Similarly, governments can establish their anti-inflationary credibility by making an explicit commitment to monetary rules. In practice, however, few have imposed binding constraints on policy. Governments have tried to set monetary targets, but these targets quickly become time-inconsistent. Are policy makers so loth to lose their discretionary powers?

Paul Volcker, when he was chairman of America's Federal Reserve, said: "A simple rule... would simplify our job at the Fed... But, unfortunately, I know of no rule that can be relied upon with sufficient consistency in our complex and constantly evolving economy."

This might seem to suggest that the only problem is how to devise an intelligent rule. For example, a rule specifying a constant rate of monetary growth would have been unwise in the 1980s, when financial deregulation and innovation increased the demand for money. If policy-makers had stuck to a constant, low rate of monetary growth, policy would have been tighter than intended, and slowed economic growth too much.

But rules can take many forms. The rules v discretion debate has been clouded by the fact that before the Kydland-Prescott paper identified time inconsistency, proponents of rules tended to be non-activists who believed that counter-cyclical policies were ineffective or even destructive. So the debate concentrated on whether or not activist policies work.

Messrs Kydland and Prescott took this debate forward in a profound way. They showed that, if governments can change their minds (ie, rules are not binding), then those rules are time-inconsistent; the need to establish a credible commitment to the rule is more important than the exact form of the rule.

It is, for example, possible to design **activist monetary rules**, specifying how monetary policy will be adjusted in the light of new information on the economy, while leaving no room for

discretion. For example, a rule might be that money-supply growth will be cut by one percentage point for every percentage-point rise in inflation, with the reverse being true for a fall in inflation. Alternatively, the central bank could set a target for nominal GNP growth or for the inflation rate itself. Such rules remove the policy-maker's blindfold, but keep his hands tied.

The real problem is how to tie his hands; how to ensure the

rules are not broken. Perhaps the best way is for the **central bank** to be made **fully independent** under the law, free from political interference like Germany's Bundesbank.

But independence, by itself, is not enough. America's Fed, for example, has more independence than most central banks, but its anti-inflationary credibility has been weakened by the fact that, whereas the Bundesbank has the overriding

statutory duty to stabilise prices, the Fed is supposed to be responsible for maintaining low unemployment as well as inflation. This tends to make the Fed's policies time-inconsistent.

On the other hand, once a central bank has established a credible anti-inflationary reputation, specific rules may no longer be necessary. The Bundesbank has built up an excellent track record on inflation; everybody believes it will stick to its tight-money policy, so it can allow itself some flexibility.

By contrast, a country like New Zealand, which made its central bank fully independent only in 1990, still needs a strict rule if it is to be credible, because of its previous dismal inflation record. Indeed, the Reserve Bank of New Zealand is the first central bank in the industrial world to be set a specific target for inflation: 0-2% by 1993.

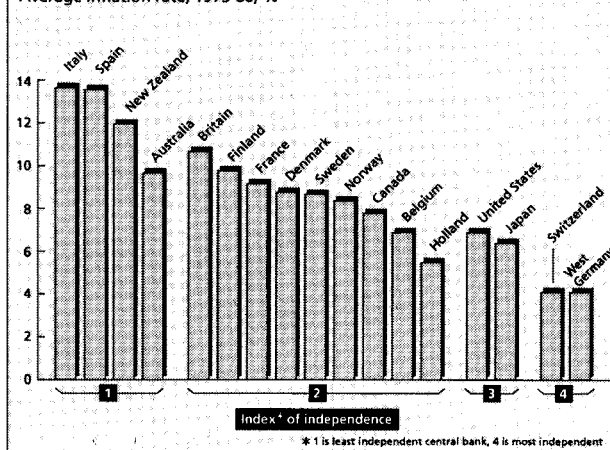
To bolster credibility further, deviations from that target have been made costly for the Bank's governor: if he fails to meet the target, he loses his job. At one time the government seriously considered linking the governor's salary to his success in defeating inflation. Sadly, this incentive scheme remains untried.

An alternative policy rule, which can deliver the same beneficial results, is for a country to peg its currency to that of a country with a proven anti-inflationary record. This is exactly what European countries have done by joining the **European exchange-rate mechanism** (ERM), in effect handing over the monetary reins to the Bundesbank. But membership of the ERM provides anti-inflationary credibility only if members are committed to its rules. If Britain devalued sterling now, as some are urging, its low-inflation intentions would become time-inconsistent overnight.

Before time inconsistency was identified, most economists favoured rules because they thought governments lacked enough knowledge for discretionary policy to succeed. The main contribution of the Kydland-Prescott paper was to show that even rules can become time-inconsistent if they are not binding. For monetary policy to be credible—and hence successful—policy-makers' hands are better tied than left free.

Central-bank independence and inflation

Average inflation rate, 1973-86, %



The good central bankers' guide

IN THEORY it should make little difference whether parliament sets fixed monetary rules which the central bank is told to obey, or whether the central bank is made independent with the prime goal of price stability. In practice, it is harder for governments to repeal the independence of central banks than it is to tamper with rules, so independence provides a more credible insurance against inflation.

Experience shows that the freer a central bank is from government interference, the lower is the rate of inflation. The chart, based on a study* by Alberto Alesina of Harvard University, ranks central banks according to an index of independence, taking into account characteristics such as the formal institutional relationship between the central bank and the government (eg, who appoints the head of the bank), the presence of government officials on the board of the bank, and the existence of rules forcing the central bank automatically to print money to finance budget deficits. The least independent during the period of the study (1973-86)—and they included the Bank of Italy and the Reserve Bank of New Zealand—are given a value of one; the most independent—Germany's Bundesbank and the Swiss National Bank—are given a value of four. The countries whose central banks had a rating of one had an average inflation rate of 12.5% over the period; the countries with a rating of four had an average rate of 4%. Moreover, countries with freer central banks also tended to have lower rates of unemployment. This fits the theory that policy credibility allows inflation to be defeated at a smaller cost in terms of lost growth and jobs.

*"Politics and Business Cycles in Industrial Democracies", Alberto Alesina, *Economic Policy* no. 8, April 1989.