

Overview

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My assignment is to give an overview of the principal issues raised at this conference on price stability and the contributions of the individual papers to these issues. The principal issues have been the choice between rules and discretion in setting the path for a return to price stability and the preferred type of rule if discretionary actions are avoided. These issues bring to the fore the role of anticipations and the related issue of credibility, since the costs of returning to price stability are almost certainly lower if the return is anticipated and if policy actions are perceived as consistent with the goal of stable prices.

The issue of rules versus discretion is an old one. Policymakers, or their staffs, are inclined to dismiss rules casually by arguing that judgment is superior to a rule requiring constant money growth if there are shifts in the demand for money. This argument does not do justice to the analytic issues, and it fails to consider the type of monetary arrangements recommended in much of the recent academic literature on the subject.

My interest in monetary arrangements began 20 years ago when Karl Brunner and I analyzed the working of the Federal Reserve System and proposed changes for the House Banking Committee (Brunner & Meltzer [1964]). At the time, discretionary policy consisted of choosing a level of free reserves—member bank excess reserves minus member bank borrowing—every three weeks. The U.S. was on the Bretton Woods standard. In practice, as everyone eventually learned, this standard did not restrict monetary policy or maintain price stability. Despite their commitment to fixed exchange rates and a fixed gold price, the Federal Reserve retained discretion, and it permitted the rate of money growth to be determined by its choice of the level of short-term interest rates or free reserves. Principal responsibility for the fixed dollar exchange rate was left to other countries. Most chose to maintain fixed exchange rates, so the

discretionary policy decisions in the United States produced inflation in all the principal economies of the world. Although we did not forecast this outcome, we urged the Federal Reserve and Congress to change their procedures by adopting a monetary rule, and by permitting exchange rates to fluctuate if necessary to maintain the proposed rule.

The particular rule we chose called on the Federal Reserve to set the growth rate of the monetary base once every six months so as to achieve that rate of money growth consistent with the goals of the Employment Act of 1946. These goals are maximum employment consistent with price stability. We rejected, explicitly, the idea of setting the growth rate of the base once and for all (*Ibid.*, p. 85). In today's jargon, we favored a contingent rule specified in terms of the growth rate of the monetary base. We proposed that the growth rate of money (M1) be used as an indicator of the future effects of monetary policy.¹ To facilitate implementation of the proposed rule and to reduce variability, we recommended several changes in operating procedures.

Our choice of the particular rule was based then, as it would be now, on a judgment about the comparative costs of activism and passivity. In the choice of monetary rules, as in other activities, there are type one and type two errors. Central banks typically err on the side of activism, but they can remain too passive, as they did in the 1930s when the Federal Reserve remained inactive despite the collapse of the monetary system and its own forecasts of widespread banking failures. Or, to choose a more recent example, foreign central banks' policies remained too passive in the 1960s when faced with inflation emanating from the United States. And the Federal Reserve did little to stop the inflation caused by its policy of interest rate control.

The papers at these sessions, and many of the discussions, show a rising interest within the academic profession in a policy rule. The type of policy rule that has attracted much interest does not require the central bank to close its doors. Rather, the central bank would adopt what Bennett McCallum has called an activist but non-discretionary policy rule. McCallum's paper in this volume proposes one type of rule. Robert Hall proposes another. Frederic Mishkin favors McCallum's (1984) rule. And I regard the McCallum rule as within the spirit of both our 1964 recommendation and the recent version I have offered elsewhere (Meltzer, [1983]).

1. Some prefer the term 'intermediate target' in place of "indicator." The two are not the same. An indicator in our terminology gives current information about future values of variables like GNP!

There is, of course, no unanimity about rules either in the profession or in the papers. Ray Fair's paper favors, even urges, discretionary policies that seek to lower unemployment by increasing inflation or, in his model, by raising the price level. Benjamin Friedman's paper does not directly address the issue or comment on his preferred means of returning to price stability, but he appears to favor the use of an econometric model to forecast GNP growth, inflation, and other variables, and to use the model's forecasts to set targets for real income growth and inflation. He is critical of central banks' use of targets for growth of monetary aggregates and their occasional attempt to offset deviations from the announced targets, so he is unlikely to favor a monetary rule.

The Fair and Friedman papers are flawed, however. Fair concludes from estimation over a particular sample period that there is a potential **tradeoff** between real and nominal values. I thought the main issue between natural rate theorists and others was about whether there is an exploitable tradeoff—whether reductions in unemployment today are bought at the cost of higher unemployment tomorrow. Or, to put the same point in another way, I thought the issue was, and is, whether the average rate of unemployment can be lowered permanently and repeatedly by raising the rate of inflation. Natural-rate theorists do not have to deny that a **tradeoff** can be estimated for a particular sample period using a particular set of equations. The issue as I understand it is whether a model like Fair's preferred model can produce and reproduce the estimated **tradeoff** in repeated trials.² What an econometrician sees when he looks back after the event may be the result of statistical illusion, resulting from a large permanent change during a particular sample as in Brunner, Cukierman, and Meltzer (1981) or from non-linearities, misspecifications, etc. The fact that a tradeoff can be found in some sample period does not imply that policy can fool most of the people all of the time, or even most of the time, as Fair proposes to do.

A problem with Friedman's paper is that his model is misspecified. The real demand for goods and services depends on the nominal rate of interest and the nominal price of imports.³ One of Friedman's claims is that he obtains his evidence from a structural model. This claim loses its force

2. Fair's use of levels of prices and output raises an issue about the stationarity of the estimates and the reliability of the findings. Meese and Singleton (1982) show the relevance of stationarity for tests of exchange rates. Also, his paper continues the indefensible tradition of computing tradeoffs between endogenous variables, one of which is assumed to be fixed.

3. Friedman refers to the import price as the terms of trade. This requires constant export prices. Other comments on the Fair and Friedman papers are in later sections.

when the **model** is seriously flawed. A principal result—the information he finds in long-term interest rates—reflects the improper specification. Further, Friedman's estimates suggest that a fall in nominal import prices raises real output, and a rise in nominal interest rates lowers real spending. These estimates imply that there is money illusion in the aggregate demand equation. This does not establish that his conclusions are wrong, but they are suspect and cannot be accepted as evidence for, or against, monetary targets or monetary rules.

Hall emphasizes that, relative to an "activist" rule, discretionary policy has increased price variability and average inflation and unemployment in the past. Stanley Fischer's paper summarizes some of the costs of inflation and, as in Fischer (1981), he includes costs that could in principle be avoided by changing institutional arrangements, tax systems, depreciation rules, and the like.

Fischer's paper raises the type of question that must confront anyone who urges changes in policy arrangements. There is a long tradition in economics, going back at least to Adam Smith, of recommending policies or policy actions. Disregard of many of the recommendations has a tradition that is at least as old. A major problem for economists, and other social scientists, is to explain the persistence of the apparently large departures from optimality, noted by Fischer and emphasized by Hall. This is a major issue in political economy or public choice to which I return.

The rest of my **discussion** is divided into three **parts**. The following section **discusses** some differences in proposed activist, nondiscretionary policy rules. The next section proposes a specific rule and **compares** its properties to some rules proposed at this conference. The rules proposed at the conference, as well as the **discretionary** policies, neglect effects on the exchange rate and on the rest of the world. These are major omissions, as recent experience emphasizes. An older tradition treats the choice of policy rules as a choice between stability of internal and external prices or between domestic prices and exchange **rates**. I attempt to harmonize the two.

History does not suggest that any of the proposals are likely to be adopted. The final section considers some political economy aspects that are too often neglected in discussions of this kind.

Some differences in types of policy rules

A principal reason for adopting a policy rule is to provide information about the future and thus enable people and firms to plan more reliably. My major criticism of the current policy regime—discretionary policy with pre-announced monetary growth rates and fluctuating exchange

rates—is that **this** regime increases uncertainty about future inflation, effective **tax** rates, and other variables required for long-term planning. No one can have much confidence, **as** he looks ahead, about whether inflation in any country will be between zero and 25 percent, the approximate range of inflation rates observed in developed, **democratic** countries during the past **decade**.⁴ This is costly and far from optimal, **as** several of the papers note.

My criticism is that discretionary policies fail to provide a predictable path for money and do not restrict governments to a path leading to (average) price stability. It is not intended as a criticism of fluctuating exchange rates. Nor is it a criticism of pre-announced monetary targets. These targets, and the relation of actual to announced money growth, provide useful information that helps people to improve their forecasts.

The contrary evidence in **Friedman's** paper in this volume does not strike me as compelling given the resources invested in central bank watching, the care with which money growth rates are studied by market participants, the considerable evidence on the relation between maintained average rates of inflation and maintained average rates of money growth, and the flaws in **Friedman's** paper emphasized in Goldfeld's comment, as well as those noted in the previous section. The evidence in the Fischer and Mishkin papers reminds us again that even if four quarters of money growth make no contribution to autoregressive forecasts of next quarter's GNP growth, sustained, high money growth produces **inflation**.⁵

Reduction in uncertainty will not be achieved by removing information from the public. What is required is not less information but more information and more reliable, more credible information about future monetary policy. **A** credible rule can contribute to the reduction in uncertainty about future nominal income, prices, and inflation, as **McCallum's** paper points out, but all rules are not the same.

A useful distinction is between rules that depend on prospective instead of retrospective information—between contingent rules that tie action to forecasts of future events and contingent rules that depend on past performance. Reliance on forecasts means that errors of forecast affect policy actions.

Hall's proposal is most explicit. He urges the Federal **Reserve** to adjust money growth each month based on quarterly forecasts of unemployment

4. The chart in **Mishkin's** paper shows these data.

5. Many forecasters use three-year (or longer) moving averages of money growth to forecast inflation. **Friedman's** Table 5 suggests that some of the effects of money growth show up within one quarter.

and price changes for the next two years, and he recommends a particular social contract. Deviations of forecast unemployment from the natural rate have eight times the weight assigned to deviations of the predicted price level from the level consistent with price stability. Errors of forecast for the unemployment rate, therefore, have a magnified effect on policy: Overestimates of future unemployment require greater monetary expansion; underestimates of future unemployment result in slow monetary growth. Hall's simulations have errors of forecast implied by Taylor's (1980) model with a particular lag structure. In practice, his proposal is very unlikely to generate the relatively stable paths shown in his simulations. In fact, if the lags are variable, errors of forecast for unemployment may be relatively large. In this case, monthly adjustments of money growth can produce greater variability in prices and unemployment than present discretionary policies. I do not claim that Hall's procedure would, in fact, have this result. We simply do not know, and Hall's paper does not give any information on which to base an answer.

The broader issue is whether to rely on forecasts at all, and if so, whether to rely on near-term or longer-term forecasts. A related issue is how fast policy action adjusts to deviations of forecasts from desired levels or rates of change. Hall, Friedman, and Fair either explicitly or implicitly want policy actions to depend on forecasts, but they differ about how far policymakers should look ahead. Hall's rule, as already noted, requires policymakers to adjust money to monthly changes in forecasts. Fair and Friedman do not discuss this issue. McCallum's proposal, favored also by Mishkin, and mine (Meltzer [1983]), repeated below, require policymakers to ignore forecasts and respond only to observables.

Available data can be used to judge the issue. McNeese (1981) gives several measures of errors of forecast by forecast horizon for 16 separate forecasters from 1976 to 1980. The average absolute error for 16 forecasts of the growth of real GNP made during the same quarter is 2.7 percent. Eight forecasts made after the middle of the quarter are only slightly more accurate. Their error is 2.4 percent. These errors of forecast help to explain why rapid response to short-term deviations in real variables can increase instability. For one-year forecasts the errors are smaller, but not small relative to the average growth rate. The mean error of forecast for real growth made four quarters ahead is 1 percent for the same five-year period. For inflation, the mean errors are about 1 percent, also, for the same period.

Webb (1983) reports similar findings. He computed median errors of forecast from a large sample of forecasts, for the year 1971 to 1982, made using different forecasting techniques. For both real growth and inflation

four quarters ahead, the averages of the median errors for the twelve years are the same, 1.7 percent. For the shorter period most closely corresponding to the McNees data, the average of the annual median errors is 0.8 percent for real growth and 1.3 percent for inflation. Errors in excess of 4 percent were made in some years. Friedman's Table 2 shows that errors in excess of ± 2 percent in forecasts of nominal income growth one year ahead are likely to be common.

Either a rule or discretionary policy based on forecasts is capable of producing errors that are a large fraction of the annual change. A recent paper by Bomhoff (1982) shows that, for time series models, one source of this error is the change in the parameters of the models used to make forecasts. Bomhoff uses a multi-state Kalman filter to forecast levels of aggregate variables. Errors arise from three types of disturbances. There are permanent changes in rates of change, permanent changes in level, and transitory changes in level.

If all errors are of the third kind—transitory changes in level—errors of forecasts are independent of the length of the forecast period. On the other hand, if all errors are transitory and are not known until after data become available, the optimal policy is a do-nothing policy. The reason is clear. The expectation for every period is a constant level. If prices conformed to this model—which is to say that monetary and real changes never changed the expected price level—the price level would be stable, and the problem of achieving price stability would be simpler.

At the opposite extreme, all changes are permanent changes in rates of change. The proper response to a permanent change is to adjust as soon as the change is known reliably. An example, to which I return later, is a permanent change in the growth rate of productivity and real income. A policy of price stability requires a corresponding, permanent change in the growth rate of money. If there is uncertainty about the timing of changes in productivity growth, forecasts of both the future price level and the rate of price change are uncertain.

A rule (or discretionary policy) that relies on forecasts can mistake transitory errors for permanent changes. When this occurs, policy is excessively active not only because the mistaken response to transitory shocks introduces excess variability, but because changes in money are likely to induce some short-term changes in real variables. The opposite error is excessive passivity. Permanent shocks to productivity growth are treated as transitory changes in level. The policy rule restricts policy to a slow response, so prices vary more than the ideal that would be achieved if shocks could be properly identified as they occur.

The problem is no different in principle from the problem that arises when policymakers rely on a particular model or Phillips curve as proposed by Fair, Hall, and Friedman. The lag structure depends on the relative variance of the permanent and transitory components of shocks, as in Muth (1960). When these variances change, lags change, and forecasts go awry.

Forecasts using time series models face the same type of problem. The parameters of forecasts that rely on past values of aggregate data are subject to change. Bomhoff (1982) used a moving average process to study the distribution of shocks to money and other variables in six countries. He found that shifts in the distribution of shocks are relatively large at times. Meltzer (1984) compared the distribution of shocks and the variance of forecast errors under six different monetary regimes and found relatively large changes within a particular regime and across regimes.⁶ These studies and the forecast errors reported by McNees (1981) and Webb (1983) give little reason to expect that a rule that responds to forecasts of future events is likely to produce the type of improvement that Hall expects.

Hall defines price stability as a constant realized value of the price level and proposes to reverse all changes that cause the price level to differ from its base period value. His aim is to maintain a constant, long-run expected value of the price level while permitting short-run price changes along a Phillips curve.

The proposed rule has two flaws. Hall makes no allowance for changes in the so-called natural rate of unemployment, and his choice of actual instead of expected price stability is inefficient and costly. The reason is that one-time permanent changes in the natural rate—following a productivity shock, a change in the terms of trade, or some other real shock to output—change the price level. Hall's rule requires a change in the stock of money to offset the effect on the price level. This action increases variability by changing aggregate demand, thereby changing output, prices, money wages, and other variables. There is no social benefit from the additional variability. Also, Hall does not explain why the adjustment of real wages to a one-time change in the natural rate must be made by changing money wages while keeping the price level unchanged.

6. Here is an illustration using an autoregressive model. Let $x_t = \rho_t x_{t-1} + u_t$ where u_t is a transitory random error. Suppose ρ_t , the coefficient determining persistence, is not constant but is governed by $\rho_t = \rho_{t-1} + v_t$, where v_t is the random shift in ρ . When u_t is very large and the value of ρ is not very certain, activist policies based on forecasts are likely to introduce more noise than they remove.

The main issue here is whether price stability means that the long-run price level is constant or whether the expectation is constant. That the two do not lead to the same policies is shown by supposing that a supply shock increases output and reduces the natural rate. The decline in the price level, following the shock, raises real wages as part of the adjustment. The rationally expected price level is constant, after the shock, at a lower level.⁷ I can see no reason why policy should reverse the fall in the price level and require an increase in money wages. Nor can I see why holders of money and other nominal assets should not share in the gain (or loss) from unanticipated changes in productivity through the real balance effect.

Some properties of proposed rules

McCallum and Mishkin favor a rule, proposed in McCallum (1984), under which the central bank adjusts the monetary base to offset deviations of the level of GNP from its target. The target path for nominal GNP is determined by the average long-term rate of growth of real GNP at stable prices. If nominal GNP falls below this path, the monetary base increases, and if nominal GNP rises above the path, the base is reduced.

McCallum's rule differs from Hall's in several ways. First, real shocks to the level of productivity result in one-time price level changes. Second, the two rules respond to changes in aggregate demand in qualitatively similar ways, but McCallum's rule does not rely on forecasts. Third, increases in the growth rate of real GNP produce a falling price level under **McCallum's** rule, and reductions in the real growth rate produce inflation. The reason is that the rule does not adjust the growth rate of the monetary base for changes in the growth rate of output. The quantitative importance of the omission depends on the size and frequency of changes in the growth rate of output. The effect on the rate of price change would have been larger for Japan or Germany than for the United States in the postwar years. Price stability in the U.S. would have increased, however, if money growth had adjusted to the decline in the growth rate of real output between the '60s and the '70s.

All of the rules and discretionary policies discussed so far ignore **exchange-rate** changes and the effect of such changes on domestic prices and output. **This** source of **variability** is much larger for some countries than for the United States, but the short-term effect of exchange-rate changes on the price level seems too large to ignore even in the United States.

7. If productivity shocks are normally distributed with **zero** mean, there is no reason to expect drift in either direction.

My proposed rule for monetary growth, Meltzer (1983), adjusts for changes in velocity growth and real income growth. With some help from major foreign countries, the **proposed** rule smooths the effects of changes in exchange rates. The rule is expressed in rates of change, or growth rates, not in levels, but there is no problem of base drift or inflationary bias, and there is no provision for changes in the position from which growth rates are computed. The rule achieves price stability on average, but the price level changes when there are permanent changes in the level of **real income**.

The rule requires each of the central banks that issues a major international **currency**—the United States, Germany, Japan, and the United Kingdom—to set the growth rate of its monetary base equal to a three-year moving average of the **rate** of growth of the country's **real output** minus the three-year moving average of its monetary base velocity. The choice of three **years** is arbitrary. It provides a built-in **stabilizer** by keeping money growth above real income growth during cyclical recessions and below **real income growth** during periods of **high** expansion. Money growth adjusts **gradually** to maintained, permanent changes in the growth rate of output or velocity. No **use** is made of econometric or other **forecasts**, and there is no need to distinguish in advance whether **observed** changes are adjustments of levels or changes in rates of change.

On average the rate of price change is zero. Since all major countries follow the same rule for price stability, all have the same expected rate of price change, zero. The common expected rate of inflation contributes to exchange **rate** stability. Prices and exchange rates fluctuate, but one **cause** of fluctuations—differences in expected rates of inflation—is **damped** or **eliminated**.

The **three-year** period *can* be interpreted as twelve quarters, and the growth of the base *can* be adjusted quarterly. I believe that quarterly adjustment puts too much weight on transitory changes in velocity and real income. **Semi**-annual or annual adjustment or money growth reduce the influence of these self-reversing changes.

Countries that are not parties to the agreement *can* also benefit. They have the choice of adopting the rule, of pegging to one of the **currencies**, or of pegging to a basket **currencies**. Or they can choose an independent policy and float.

The proposed rule has five attractive features:

- The rule sets the growth rate of the monetary base, a variable that the public can observe and the central bank can control with minimal error.

- The rule is adaptive and modestly counter-cyclical, but there is no 'drift' in the level from which growth is measured.
- The rule does not adjust quickly to large transitory changes in level, but it adjusts fully to permanent changes in rates of growth by the third year.
- The rule does not depend on forecasts, so it is not sensitive to forecast errors.
- The rule provides for increased exchange rate stability if other major countries adopt compatible rules, but there is no need for international coordination of policies. Exchange rates fluctuate.

In *The Tract on Monetary Reform*, Keynes (1923) recognized the importance of achieving price stability by policies that maintained both internal and external stability. This emphasis has been missing in most recent discussions. Some argue for rules like the gold standard or a revised system of fixed exchange rates, fashioned along the lines of the Bretton Woods agreement. If followed, these rules maintain more exchange rate stability than in recent years, but neither an international gold standard nor a return to a Bretton Woods system assures that domestic prices remain stable. Others favor restrictions on domestic monetary policy to maintain domestic price stability but ignore shocks from abroad.

In open, interdependent economies, fluctuations in prices and output can be reduced if there is greater certainty about foreign and domestic disturbances. This can be achieved by an agreement on the principles, or rule, for the conduct of each country's monetary policy.

Perspectives from political economy

Stanley Fischer's paper points out that the principal costs of inflation arise from the absence of institutional change. Governments fail to index tax rates and depreciation schedules, or they are slow to make these changes. Governments do not offer indexed bonds to shield the public from the loss of wealth and the uncertainty about future values during periods of variable inflation. In our recent experience, the Federal Reserve and other agencies maintained ceilings on the interest rates paid to depositors until financial innovation eroded much of the base against which this part of the inflation tax was levied.

These costs of inflation could have been avoided or significantly reduced in scope. The fact that most developed countries have not made the institutional changes that reduce the major costs of inflation is inconsistent with the usual treatment of central banks and governments in economic models. Governments, in these models, are agents or intermediaries

that assist households to maximize the utility of consumption, and they improve people's welfare by providing public goods and removing public bads. The failure to adjust institutions to reduce the cost of inflation is puzzling in this perspective.

A basic difference in models of political economy, or public choice, is that governments can be analyzed as the representative, or agent, of voters who recognize that some people can increase their wealth in the polling place above their earnings in the marketplace. Since the distribution of income and consumption across households is more skewed than the distribution of votes, the representative or decisive voter typically has less than the mean income and consumption of the community or society in which he lives. He has an incentive to redistribute income.

In Meltzer and Richard (1981) a utility-maximizing, decisive voter chooses the amount of income redistributed. Money and inflation are not part of this model, but the same principles seem applicable. Indexation of tax rates, depreciation, interest payments, and the values of governments bonds would reduce or eliminate most of the tax revenue from a maintained inflation. The government, which is to say the voters, would either have to reduce spending or find an alternative source of revenue. Do other revenue sources offer as much opportunity for redistribution as the outstanding stocks of bonds, capital, and human wealth?

The chart in **Mishkin's** paper shows that there is not a single country with stable or falling prices, on average, in recent years. All countries depart from price stability in the same direction, and few countries have acted to eliminate the inflation tax on existing stocks of bonds and real capital or to index income tax brackets and consumption taxes. Many countries have indexed transfers, for example payments to the aged, welfare recipients, and other groups. This asymmetry is consistent with the political economy model and is difficult to reconcile with neoclassical models that ignore voting and income redistribution.

Helmut **Schlesinger's** paper brings out the importance of the political economy aspect. The **first** part of his paper discusses the evils of inflation. Dr. Schlesinger emphasizes that the proper policy goal is price **stability**—defined as zero inflation on average. The second part of his paper discusses the actual policy of the Bundesbank. It turns out that the actual policy is to accommodate the existing rate of inflation. He then discusses the process by which the Bundesbank chooses the rate of money **growth**—specifically the rate of the growth of the monetary base or, as the Germans prefer, central bank money. Here, we note that the policy is decided in consultation with the government, representatives of the trade unions, and

other groups. From the perspective of political economy, it is not an accident that this political process has produced a positive average rate of inflation in both the '60s and the '70s—under both **fixed** and floating rates. The German inflation rate has been lower on average than in many other countries, most likely for the reasons Dr. Schlesinger gives. But, despite many warnings about the costs of inflation and repeated **commitments** to price stability, a modest, positive rate of inflation is the experience of the Federal Republic and, he tells us, it is the policy of the Bundesbank to accommodate inflation.

Germany's choice to maintain inflation and to avoid full indexation of taxes and government debt is a decision to tax the public in a particular way. The magnitude of the tax and the share of total expenditure financed by inflation differs from one country to another, but the outcome of the political-economic process appears to be similar in all democratic countries. A systematic process is at work.

Policy decisions are political decisions. Although I, and many others, have proposed rules to restore and then maintain price stability, these proposals are typically innocent of any political mechanism. The **Barro and Gordon (1983)** paper, discussed by **McCallum**, is a formal demonstration of the importance of a monetary rule if we are to maintain price stability. A rule is the only way, in their model, to reduce inflation to zero and to maintain price stability. The absence of a rule imposes a social loss, but their model gives no reason why the political process, the decisive voter, or the policymaker should try to minimize this loss.

A related, but distinct, issue is to explain why, with discretionary policy, the government does not choose, and the public does not expect, price stability. Cukierman and **Meltzer (1984)** show that where the policymaker knows more than the public about his own objectives and persists in his policies for a time, discretionary policy (both with and without announcements of monetary growth) has an inflationary bias. The policymaker—taken as a representative of **the** political process—gains from positive monetary surprises. The reason is that he benefits **from** current reductions in unemployment produced by surprises and discounts the costs of inflation and the future unemployment required to reduce inflation. In this model, the **policymaker's** objectives shift, from time to time, with greater weight given at some times to unemployment and at other times to reducing inflation. A weakness of this analysis is that the policymaker's objective function does not reflect the decisions of a representative voter.

The lesson of this discussion is that sustained price stability is as likely as a political commitment to an enforceable monetary rule. Both seem

remote. To paraphrase Adam Smith, we get inflation and discretionary policy, not from the malevolence of policymakers but from their self interest. After years of effort, proponents of rules have not reached the point at which proponents of discretion, whether policymakers or academics, feel compelled to show that discretionary policies remove more instability to prices, output, or employment than they add, or to explain why we have been as far from both price stability and minimum unemployment as Hall's chart suggests.

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