

## COMMENTS

### **'Rules, Discretion and Reputation in a Model of Monetary Policy' by Robert J. Barro and David B. Gordon**

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The possible time inconsistency of optimal policy is one of the most important policy issues that has emerged from research on rational expectations in macroeconomics. In many dynamic problems, macroeconomic performance can be improved by a change in policy in the future from what is announced today. However, knowing that such a change in the announced policy is desirable, individuals come to expect policymakers to make such a change, so that the originally announced policy is not credible. This lack of credibility generally results in an outcome inferior to what would have been possible had policymakers been able to commit themselves to maintaining the announced policy. This inferior outcome in which individuals correctly expect policymakers to diverge from their announcements has been referred to as the 'consistent' solution in the macroeconomic literature.

In this paper Robert Barro and David Gordon examine whether reputational considerations, which have generally been ignored in the literature, can restore some credibility for policymakers and thereby avoid such inferior outcomes. They approach the problem using a carefully constructed and easily understood example, and reach a number of interesting and suggestive conclusions. In particular by assuming that policymakers suffer a loss of reputation if they diverge from their announcements, Barro and Gordon show that equilibrium solutions exist which are superior to the consistent solution. The analysis makes a very useful contribution to the time inconsistency literature.

The policymaker's cost function [eq. (1) of the paper] is assumed to be positively related to the square of the inflation rate and negatively related to the unanticipated inflation rate. The objective of policy is to minimize a discounted sum of such cost functions. In the standard case where policymakers do not lose any future reputation from diverging from their announced plan, there is no connection between periods. In that case the objective function can be minimized at each point in time. Three policy outcomes can then be distinguished as in table 1.

Table 1

Policy description	$\pi$	$\pi^e$	$z$
Rule (optimal) (*)	0	0	0
Cheating (inconsistent) (~)	$b/a$	0	$-b^2/(2a)$
Discretion (consistent) (^)	$b/a$	$b/a$	$b^2/(2a)$

The policy description indicates the name for the various policies used by Barro and Gordon, and for comparison purposes the names which have been used in the time inconsistency literature [see Kydland and Prescott (1977), and Fischer (1980) for example]. The notational symbols used by Barro and Gordon and are also shown. The first row shows the values for the inflation settings and the cost function ( $z$ ) when the announced optimal policy is followed. The second row shows how costs can be reduced if the actual inflation rate is raised above what is announced. This is the cheating or inconsistent policy. The third row shows what happens if people correctly expect that policymakers will switch to the higher inflation policy. Costs are raised above what they would have been if the original announced policy had been followed. Intuitively the gains from a higher inflation rate are lost if people expect it, and the economy is left with only the costs of a higher inflation rate. Note that in this model the only credible policy is the consistent one. There is no mechanism in the model for the policymakers to generate credibility about the announcement of a zero inflation rate.

The main innovation of the Barro-Gordon analysis is to go beyond this standard time inconsistency case and consider the possible loss of reputation that policymakers experience by cheating as in the second row of table 1. Barro and Gordon assume that a change from the announced policy leads people to expect that policymakers will continue to use the higher inflation policy for one more period, regardless of what they announce. On the other hand, if policymakers follow their announced policy then Barro and Gordon assume that people expect the policymakers to continue to follow their announcements in the next period. Hence, Barro and Gordon connect the observed actions of the policymakers to their credibility, and thereby explicitly define the reputation mechanism in the analysis.

While apparently reasonable, it should be emphasized that this reputation mechanism need not hold in practice. For example, if policy is determined by a committee whose members change each period, then the actions of the committee in one period would not necessarily have implications for the committee in the next period.

With such a reputation mechanism in place, however the nature of the policy problem changes significantly. The announcement of a zero inflation rate is still not credible, because the gains from switching from the zero

inflation announcement outweigh the costs of a loss of reputation; the loss of reputation lasts for only one period, and that period is in the future and therefore discounted. But a policy of announcing an inflation rate higher than zero (and less than  $b/a$ ) might be credible because the gains from switching from this higher inflation rate to  $b/a$  will not generate as much of an increase in welfare, and might be offset by the loss of credibility. In fact, as shown in fig. 1 of the Barro–Gordon paper, there is a range of credible inflation rates lower than  $b/a$ . Without reputation effects the only credible inflation rate was  $b/a$ . In this way reputation can lead to generally superior outcome, and this is perhaps the most important message of the Barro–Gordon analysis. They go on to show that the outcome depends on the size of the discount rate and on the number of periods that the policymakers lose their reputation. They also show that their results generalize to the case of uncertainty about policy preferences and to contingency policies. The use of a model with a closed form solution has important expositional advantages and the details of the analysis are well worth studying carefully.

I have some reservations, however, about the 'positive implications of the time inconsistency model which are emphasized in this paper and in a previous one by the authors [Barro and Gordon (1983)]. The fact that a suboptimally high inflation rate is the only credible policy has been offered by Barro and Gordon as a reason why we have experienced high inflation rates in recent years. To some extent the introduction of reputation effects into the time inconsistency model makes it less attractive as a positive theory of inflationary policy: the larger are the reputation effects (for example, the longer they last), the closer is the equilibrium inflation rate to zero.

However, examination of other time inconsistency situations raises general doubts about the inconsistency model as a positive theory of macroeconomic policy. In other well-recognized time inconsistency situations, society seems to have found ways to institute the optimal (cooperative) policy. For example, patent laws are not repealed each year to prevent holders of patents from creating monopolist inefficiencies. It is obvious that such repeals would eliminate any incentive for future inventions. In the Barro–Gordon inflation–unemployment model, the superiority of the zero inflation policy is just as obvious to people as the well-recognized patent problem is in the real world. It is therefore difficult to see why the zero inflation policy would not be adopted in such a world.

## References

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