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An investigation of the gains from commitment in monetary policy

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Abstract

We propose a simple framework for analyzing a continuum of monetary policy rules characterized by differing degrees of credibility, in which commitment and discretion become special cases of what we call quasi-commitment. The monetary policy authority is assumed to formulate optimal commitment plans, to be tempted to renege on them, and to succumb to this temptation with a constant exogenous probability known to the private sector. By interpreting this probability as a continuous measure of the (lack of) credibility of the monetary policy authority, we investigate the welfare effect of a marginal increase in credibility. Our main finding is that, in a simple model of the monetary transmission mechanism, most of the gains from commitment accrue at relatively low levels of credibility.
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> "The key point here is that neither of the two modes of central bank behavior—rule-like or discretionary—has as yet been firmly established as empirically relevant or theoretically appropriate .... This position does not deny that central banks are constantly faced with the temptation to adopt the discretionary policy action for the current period; it just denies that succumbing to this temptation is inevitable." (McCallum, 1999, pp. 1489–1490)

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1. Introduction

As first pointed out by Kydland and Prescott (1977), ''economic planning is not a game against nature but, rather, a game against rational economic agents.'' When agents are rational *and forward-looking*, economic planners face constraints that depend on their own current and future choices, as forecasted by the private sector. Optimal policy therefore needs to internalize the effect of those choices on current private behavior.

Consider for example the case of a central bank confronting a trade-off between inflation and unemployment, in which current inflation also depends on expectations of future inflation.[1] In this environment, the credible announcement of a future policy tightening, in excess of that needed to curb forecasted inflationary pressures, lowers inflation expectations, thereby easing today's trade-off. Optimal policy should therefore exhaust the net marginal benefit of this announcement. This strategy, however, is time-inconsistent. The same tightening that was once desirable to announce, due to its moderating effect on expectations, becomes regrettable as soon as it delivers the promised recession. For this reason, a benevolent policymaker will be expected to renege on her announcement and avoid the recession. Yet, the credibility of that announcement is a necessary prerequisite for the optimal policy to be feasible.

This highlights an important tension between the optimality of the commitment plan and the ex post incentive to abandon it. On the one hand, central banks can reap the benefits of commitment only if the private sector knows (with probability one) that they will not deviate from their announced plans. Yet, in the absence of a commitment technology, there is no reason for the private sector to believe that deviations will not occur. Moreover, this tension is exacerbated by the binary nature of the choice facing the public. It can either believe the central bank, or not.

In this paper, we propose a way of endowing private agents with the benefit of the doubt. We assume that a new central banker, call her j, is appointed with a constant and exogenous probability α every period. When j takes office (in period τ_j), she reneges on the promises of her predecessor and commits to a new policy plan that is optimal as of period τ_j. Agents understand the possibility and the nature of this change and form expectations accordingly. As a result, the private sector is constantly doubtful of the reliability of outstanding promises.

Think of this as an economy with access to a limited commitment technology. Thanks to this technology, policymakers can guarantee their own promises. However, they cannot influence the behavior of their successors, who are therefore expected to formulate their own policy plan. Given this expectation, a new policymaker's best response is indeed to reoptimize upon taking office. Once in office though, incumbents will play the commitment strategy for the duration of their mandate. We refer to the resulting equilibrium, and to the limited commitment technology that supports it, as quasi-commitment.

Note that with quasi-commitment, even if reoptimizations can be arbitrarily frequent, they are not a source of gains for the policy authority. Since agents anticipate them to happen with the correct probability, on average there is no room ''to exploit temporarily given inflationary expectations for brief output gains'' (McCallum, 1999). This implies that

[1] After the seminal contributions of Kydland and Prescott (1977) and Calvo (1978), applications of the theory of economic planning with rational agents to monetary policy have attracted by far the most attention in the literature. Following this tradition, we illustrate most of our points within a monetary model.

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