Lecture 5 in Monetary Economics

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March 3, 2010

Distorted steady state (too low output).
Properties of policy
Under discretion
Same response to the cost push shock as in the undistorted Steady state case.

Inflation bias: Positive average inflation to erode the mark ups of the firms that have fixed prices and lead to higher output. The optimal average inflation rate is increasing in the degree of inefficiency.
Inflation leads to price dispersion which is inefficient. This limits the CB's appetite for inflation.

Under commitment

The response to the cost push shock is the same as under discretion.

Asymptotically, the average inflation converges to zero from above. Hence, policy commitment eliminates -asymptotically- the inflation bias.

An application to currency union (Clerc, Dellas, Loisel, JIE, 2010)

- Monetary union can benefit countries suffering from policy credibility problems if it eliminates the inflation bias and also allows for more efficient management of certain shocks.
- But it also carries costs as *some* stabilization may be feasible even in the absence of credibility, and this may be more than what an individual country can hope for in a monetary union.

C-D-L combine the stabilization and credibility branches of the currency union literature and construct a simple welfare criterion that can be used to evaluate alternative monetary arrangements. They produce examples where monetary union may be welfare improving even for low-modest levels of inflation bias (2-3%) as long as business cycles are not too a-synchronized across countries.

The model

- A small open economy
- Unitary elasticities
- Phillips curve (cost-push) and IS shocks
- CB in the small, open economy lacks credibility (follows discretion)
- CB of the currency union enjoys credibility

Welfare function in the small economy

$$L_t = E_t \left\{ \sum_{k=0}^{+\infty} \beta^k \left[\left(\Delta p_{H,t+k} \right)^2 + \delta \left(\widehat{x}_{t+k} - \chi \right)^2 \right] \right\}, \qquad (1)$$

Flexible exchange rate with optimal discretionary policy

$$\Delta p_{H,t} = \frac{\kappa\delta\chi}{\kappa^2+\delta(1-\beta)} + \frac{\delta u_t}{\kappa^2+\delta(1-\beta\rho_u)} \quad (2)$$

$$\text{and } \widehat{x}_t = \frac{\delta(1-\beta)\chi}{\kappa^2+\delta(1-\beta)} - \frac{\kappa u_t}{\kappa^2+\delta(1-\beta\rho_u)}, \quad (3)$$

The solution has four important properties.

- if χ is greater than zero then there exists an inflation bias. This term would have been absent in the presence of policy commitment. The reason for the inflation bias is that $\chi > 0$ means that the net effect of the various distortions present in the model (imperfect competition, distortionary tax, terms of trade externality is to make actual output fall short of its efficient level. A policymaker who cannot commit will systematically try to close this gap and this will generate a positive rate of actual and expected inflation as in Barro and Gordon (1983).
- The IS shocks do not matter for inflation and the output gap. This is because these shocks do not generate a trade off between inflation and output gap variability. As the same result would have obtained under policy commitment this suggests that discretionary policy involves an efficient response to some types of shocks

- The domestic variables are not affected by foreign shocks. This is due to the assumption of a unitary elasticity of intertemporal and intratemporal substitution.
- The response of the economy to a domestic cost push shock differs from that under policy commitment (see below). The response under discretion is less efficient than that under commitment because the policymaker cannot rely on credibility to spread out (smooth) the reaction to a current shock.

Table: Welfare comparisons of alternative regimes: The case of a 3% inflation bias

	$\sigma_u = 0.001, \sigma_a = 0$	$\sigma_u = 0, \sigma_a = 0.001$	$\sigma_u = 0.001, \sigma_a = 0.001$
corr =0.9	+1.4645	+0.7364	+1.4616
corr =0	+0.2033	+0.6818	-0.2113
corr =-0.9	-1.4360	+0.6225	-1.4918

[a] The numbers represent the inflation equivalent of moving from a float under discretion to monetary union under commitment. A + means a welfare gain and a − a welfare loss. There is an annual inflation bias of 3% under discretion in the flexible regime. u is the cost push and a the productivity shock. σ represents variance.

Basic principles of optimal policy in a distorted economy: In practice, small optimal deviations from perfect inflation targeting.