

Hanes' comp questions, June 2015

Consider the following model:

$$y_t = \rho y_{t-1}^e + sr_t + u_t \quad \text{where } u_t = \rho u_{t-1} + \epsilon_t$$

$$\pi_t = \rho \pi_{t-1} + y_t$$

$$r_t = \pi_t$$

where π is the inflation rate, y is the output gap, r is the gap between the real interest rate and the

Discretia is the CGG model under discretion, except with no serial correlation in shocks and the addition of unobservable AS shocks. Recall that the central bank adjusts r to completely counteract observable IS shocks, so IS shocks affect nothing and create no loss. Also recall that in response to an observable AS shock, the central bank would minimize loss by adjusting r to push y away from zero and partly counteract the effect of the AS shock on inflation. But here the AS shocks are unobservable. In response to unobservable AS shocks, r remains fixed, output unaffected, but inflation is affected, creating loss.

Note that an AS shock of given magnitude will create greater loss in Discretia than in Rulia, because Rulia's interest-rate rule will reproduce (somewhat) what Discretia's central bank would do if it could observe the AS shock.

- In a sample of data from many periods, what is the sign - positive, negative or zero - of the correlation between y and π in Discretia? In Rulia? 6 points, 3 for each. In Discretia, correlation is zero (or undefined, because y doesn't

$$\bar{Y} = \left(\frac{\gamma}{1-\gamma} \right)^{\frac{1}{1-\gamma}}$$

$\left(\frac{\gamma}{1-\gamma} \right) < 1$. If γ is bigger, then $\frac{1}{1-\gamma}$ is smaller, and Y is bigger. So output is bigger in A, smaller in B.

ii) For an aggregate demand (M

we've again got a positive IS shock as in $t+99$, and results are similar to what I said for $t+100$. But if $y_{t+99}^e < 0$, we've got a negative IS shock. The results of a positive