

Christiano

416, Spring 2008

Homework 7, due June 2.

1. In the Bernanke-Gertler-Gilchrist model, the zero profit condition of banks resembles a Laffer curve, with the interest rate on entrepreneurial loans, Z_{t+1} , playing the role of the tax rate and the required revenues of the banks playing the role of the (exogenous) government spending requirement. Show that for given entrepreneurial earnings,

$$R_{t+1}^k P_t P_{k',t} K_{t+1}^N,$$

the revenues of the bank (i.e., the share of entrepreneurial earnings received by banks, net of the share of entrepreneurial earnings used up in monitoring) have an inverted U shape in $\bar{\omega}$ (see page 88 in the handout). Display a graph of this inverted U shape. Explain why the equilibrium value of $\bar{\omega}$ must lie on the left side of the Laffer curve.

2. The dynare code for the open economy model with BGG frictions is available to you. It is the code that was used to generate the results reported in the handout. Each equation in the dynare version of the model has a code attached to it. That code belongs to the associated equation label in the scientific word tex file of the handout, which is also available. In the version of the model analyzed there, the nominal rate of interest received by households for their period t savings is not contingent on the period $t + 1$ state of nature. Modify the model so that the household's earnings are instead state non-contingent in terms of the period $t + 1$ consumption good. Display the impulse response function of output and investment to a monetary policy shock, comparing the two specifications of the model. Does the nominal rigidity in the interest rate make a difference to the transmission of a monetary shock? What about the transmission of a technology shock?