797N - Macro 3

Fall 2015

Problem set 8

1. Assume that

$$\begin{aligned} C_t &= \alpha Y_{t-1} \\ I_t &= \max\{\bar{I}, I_0 + \beta(Y_{t-1} - Y_{t-2})\} \\ Y_t &= \min\{I_t + C_t, \bar{Y}\} \end{aligned}$$

   (a) Show that the model produces explosive fluctuations if $\alpha = 0.8, \beta = 2$ and $\bar{I} \to -\infty, \bar{Y} \to \infty$.

   (b) Now let $\bar{Y} < \infty$ and $0 < \bar{I} < I_0 < (1-\alpha)\bar{Y}$. Analyze the implications of these limits on investment and output for the dynamics of the economy. Can the economy stay at the "ceiling"? at the "floor"?

2. Final 2014, question 1.

3. Using the models in Goodwin (1967) and Skott (1989), analyze the effects (and mechanisms behind these effects) of

   (a) an increase in the saving rate out of profits

   (b) an increase in labour militancy

   (c) an increase in the maximum (technically determined) output capital ratio

   (d) a shock (e.g. an epidemic) that reduces the labor force by 20% but leaves the size of the capital stock unchanged

   (e) an increase in 'animal spirits' (not relevant for Goodwin - why not?)