Problem Set 4

Due by the beginning of class on Monday, November 21

The Overlapping Generations Model

The model is set up as follows:

- 2-period lives

- 1 commodity per period, $\ell = 1$

- Stationary environment

- 1 person per generation

Where

$$\omega_0^1 = B > 0 \text{ for } t = 0$$

$$(\omega_t^t, \omega_t^{t+1}) = (A, B) >> 0 \text{ for } t = 1, 2, \dots$$

$$u_0(x_0^1) = D \log x_0^1 \text{ for } t = 0$$

$$u_t(x_t^t, x_t^{t+1}) = C \log x_t^t + D \log x_t^{t+1} \text{ for } t = 1, 2, \dots$$

Define

$$z^t = \omega_t^t - x_t^t \quad \text{and} \quad z^{t+1} = x_t^{t+1} - \omega_t^{t+1}$$

Solve for

    a. The offer curve, OC

    b. The set of equilibrium money prices, $\mathscr{P}^m$

    c. The steady-states

    d. The full dynamic analysis, including the stability of steady states

For each of the following cases:

    1. $A = B = 1$, $C = 1$, $D = 5$,
       and $m_0^1 = 1$ for $s = 0$ and $m_s^t = 0$ otherwise.

    2. $A = B = 1$, $C = 1$, $D = 5$,
       and $m_0^1 = 4$, $m_1^2 = 6$, and $m_s^t = 0$ otherwise.

    3. $A = B = 2$, $C = 4$, $D = 1$,
       and $m_0^1 = 1$, $m_s^t = 0$ otherwise

    4. $A = 10$, $B = 1$, $C = 5$, $D = 1$,
       and $m_0^1 = 1$, $m_s^t = 0$ otherwise