1

Static one good ($l = 1$) pure exchange. Four ($n = 4$) consumers.

$$\omega = (\omega_1, \omega_2, \omega_3, \omega_4) = (1, 2, 3, 4)$$

Describe the set of equilibrium money prices, for each of the following $\tau$’s:

(a) $\tau = (1, 1, -1, -1)$
(b) $\tau = (-1, -1, 1, 1)$
(c) $\tau = (-2, -1, 1, 2)$
(d) $\tau = (0, 0, 0, 0)$
(e) $\tau = (-1, -2, 1, 1)$

2

Static, $l > 1$ goods. Log-linear utility functions. Describe (in $(n - 1)$ space) the set of normalized bonafide tax policies. Describe the set of equilibrium money prices.

3

Finite model: how does nonexistence of proper monetary equilibrium relate to nonexistence of nonmonetary equilibrium with endowments outside the consumption set?
Static one good \((l = 1)\) pure exchange. Three consumers \((n = 3)\). Two monies: Red \((R)\) and Blue \((B)\).

\[
\omega = (\omega_1, \omega_2, \omega_3) = (1, 10, 1);
\]

(a) \(\tau_R = (1, 1, -2), \tau_B = (2, -1, -1)\);

(b) \(\tau_R = (1, 1, 1), \tau_B = (0, 0, -1)\);

(c) \(\tau_R = (1, 0, 0), \tau_B = (0, 0, 1)\);

(d) \(\tau_R = (-1, 0, 5), \tau_B = (-1, -1, -1)\).

For each case ((a) through (d)), calculate the set of equilibrium prices of red money, blue money, and the exchange rate.

5

The overlapping generations model:

a. (i) Define Pareto Optimality,

   (ii) Weak Pareto Optimality, and

   (iii) Short-Run Pareto Optimality. How are they related in the OG model?

b. Indicate with mathematical symbols how imperfect capital markets could be incorporated into the OG model.