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Economics 732: Monetary Economics II
Spring 2003
Cornell University

Problem Set # 1

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 τ'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?

4

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.