

Economics 614: Macroeconomics II

Spring 2004

Cornell University

Problem Set #9

Due: May 3, 2004

Money, Taxes and Sunspots

Four consumers: $H = \{1, 2, 3, 4\}$

Two states: $s = \alpha, \beta$

One commodity: $\ell = 1$

$u_h(x_h) = \ln x_h$, $h = 1, 2, 3, 4$

$\omega = (\omega_1, \omega_2, \omega_3, \omega_4) = (20, 10, 5, 4)$

$\tau = (\tau_1, \tau_2, \tau_3, \tau_4) = (2, 0, -1, -1)$

Common beliefs are $\pi(\alpha) = \pi(\beta) = 1/2$

1 The Certainty Economy

- (a) What are the competitive equilibrium goods prices of money?
- (b) What are the competitive equilibrium allocations of commodities?

2 The Sunspots Economy

Assume that 1 and 2 are unrestricted while 3 and 4 cannot trade securities, i.e. $G^0 = \{1, 2\}$ and $G^1 = \{3, 4\}$.

- (a) Describe equilibrium money prices $(P^m(\alpha), P^m(\beta))$.
- (b) Choose from the equilibrium set particular strictly positive values of $(P^m(\alpha), P^m(\beta))$
Based on the numerical values:
 - (i) Draw the relevant tax-adjusted Edgeworth box
 - (ii) Find numerical values of the state contingent allocations for each consumer