

Professor Karl Shell
January 26, 2004

Economics 614: Macroeconomics II

Spring 2004

Cornell University

Problem Set #1

Due: Friday, February 6, 2004

1

Static one-good ($\ell = 1$) pure-exchange economy with money taxes and transfers. Four ($n = 4$) consumers.

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

where $\omega_i > 0$ is the endowment of consumer i ($i = 1, 2, 3, 4$).

For each of the following: Is $\tau = (\tau_1, \tau_2, \tau_3, \tau_4)$ balanced? Is τ bonafide? Describe the set of equilibrium money prices for:

- (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 one-good ($\ell = 1$) pure-exchange economy. Three consumers ($n = 3$). Endowments are given by

$$\omega = (\omega_1, \omega_2, \omega_3) = (1, 10, 1).$$

Two currencies, R (for Red) and B (for Blue). Let $p^{mR} \geq 0$ and $p^{mB} \geq 0$ be the goods-price (resp.) of red and blue money.

- (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 equilibrium exchange rate between the two currencies.

What are the economics behind your answers? Interpret your answers as if $R =$ dollars and $B =$ euros. How are the budget deficits and the trade deficits related in this model?

What do you make of the fact that money prices and exchange rates are not always uniquely determined?