Cornell University
Spring 2016
ECON 4905
Financial Fragility and the Macroeconomy

Problem Set 1
Due: 2/24/15

Problem 1: Inside money

$$t = 1,2$$
$$l = 1$$
$$h = 1, \dots, n$$

Define notation.

a) Show that the competitive equilibrium allocation $x = (x_1, \dots, x_h, \dots, x_n)$ for the money market economy is the same as the competitive equilibrium allocation in the futures market economy.

b) Why is the allocation independent of p^m if $p^m > 0$? Give the full economic intuition for the case $p^m > 0$.

c) Give the full economic intuition of the case $p^m = 0$

Problem 2: Outside Money, static economy

$$\omega = (\omega_1, \omega_2, \omega_3, \omega_4, \omega_5, \omega_6, \omega_7)$$
$$= (100\,, 90\,, 80\,, 70\,, 60\,, 50\,, 40)$$

Solve the following for $\mathcal{P}^m$, the set of equilibrium money prices P^m.

a) $\tau = (5\,, 4\,, 1\,, 0\,, -1\,, -4\,, -5)$

b) $\tau = (5\,, 3\,, 0\,, 0\,, -1\,, -2\,, -3)$

c) $\tau = (1\,, 1\,, 1\,, 0\,, -1\,, -1\,, -1)$

d) $\tau = (3\,, 2\,, 1\,, 0\,, -1\,, -1\,, -2)$

Problem 3: Two currencies.

Red dollars, R.
Blue dollars, B.
$\omega = (10\,,9\,,8\,,7\,,6)$

Solve for exchange rates. Show units.

a) $\tau^R = (5\,,4\,,0\,,-5\,,-5)$
$\tau^B = (1\,,1\,,1\,,0\,,0)$

b) $\tau^R = (1\,,1\,,1\,,1\,,1)$
$\tau^B = (1\,,1\,,-1\,,-1\,,-1)$

c) $\tau^R = (2\,,-1\,,-1\,,-1\,,-1)$
$\tau^B = (-1\,,2\,,2\,,2\,,2)$

d) $\tau^R = (5\,,0\,,0\,,0\,,-5)$
$\tau^B = (1\,,-1\,,0\,,0\,,0)$

e) Why are the exchange rates independent of ω?