Cornell University
Spring 2016
ECON 4905
Financial Fragility and the Macroeconomy

Practice Questions for Prelim #1

1. (Outside) Money Taxation

- 1 commodity, $l = 1$, chocolate measured in ounces (oz.)
- 2 individuals, $h = 1, 2$
- taxes $\tau = (\tau_1, \tau_2)$ measured in dollars (\$)
- consumption $x = (x_1, x_2)$ measured in ounces
- endowments $\omega = (\omega_1, \omega_2) = (100, 25)$ measured in ounces
- $x_h = \omega_h - P^m \tau_h$

a. What are the units in which P^m is measured?

((b) - (e)): In what follows, when is τ balanced or not, and when is τ bonafide or not? Solve for $\mathcal{P}^m$, the set of equilibrium P^m.

b. $\tau = (5, -5)$

c. $\tau = (1, -7)$

d. $\tau = (1, -1)$

e. $\tau = (-1, -1)$

f. In (b) - (e), in which cases are there multiple equilibria? What are the lessons from this for macroeconomics?

2. Outside Money: 2 Currency Taxation

Same set-up as in (1.), but now 2 currencies: euro (€) and pound sterling (£). In each of the following solve for the exchange rate e. Give the units of e.

a. $\tau^{€} = (-1, -1)$, $\tau^{£} = (1, 1)$

b. $\tau^{€} = (1, -1)$, $\tau^{£} = (-5, 5)$

c. $\tau^{€} = (2, 1)$, $\tau^{£} = (1, -5)$

3. Inside Money: Money Market

$l = 1, \quad t = 1, 2, \quad h = 1, 2$

$u_h(x_h^1, x_h^2) = \log x_h^1 + \log x_h^2$

$\omega_1 = (\omega_1^1, \omega_1^2) = (2, 8)$

$\omega_2 = (\omega_2^1, \omega_2^2) = (8, 2)$

a. What is the equilibrium allocation $x = ((x_1^1, x_1^2), (x_2^1, x_2^2))$ when the money market is closed?

b. What is the Pareto optimal allocation x? Hint: you need not calculate, but you can do this for confirmation.

c. Show that the allocation x in part b is also the competitive equilibrium allocation when the money market is open. Hint: You might use the relationship between the money market equilibrium and the futures market equilibrium.