International Trade
Fabrizio Perri

International Trade (8402)

Spring 2010, Mini 1

Problem set 3

Due Friday, April 2, in class

Question 1. Consider a small open economy as in Arellano (2007). Preferences of the representative agent living there are given by the standard

$$E\sum_{t=0}^{\infty}\beta^t\frac{c_t^{1-\sigma}}{1-\sigma}$$

Income can take only two states $y=\{y_l,y_h\}$.The transition probability is given by

$$\Pi=\begin{bmatrix}\pi_l & 1-\pi_l\\ 1-\pi_h & \pi_h\end{bmatrix}$$

The agent starts with 0 wealth, can trade a non contingent bond and can default on it. If the agent defaults she's excluded from credit markets forever. The bond is also traded by risk neutral international investors who face a risk free rate of r. Write down the agent's problem and define equilibrium. Find a parameter configuration under which in the computed equilibrium the country defaults with positive probability in finite time. Find a path of shocks in which default happens. Along that path compare allocation and prices with those that will emerge if the country was not allowed to default.

Question 2. Consider now a two agent economy in which preferences are the same and the income is given by the same process above (each income is an independent process). Agent trade with each other a full set of contingent assets. Agents can default but if they do so they are in autarky forever. Find a parameter configuration under which the Arrow Debreu complete markets allocation is not enforceable. For those parameters compute the constrained efficient allocation. Simulate the model and compare the correlation between consumption and income in each country under compete markets and in the constrained efficient allocation.