Stanford University
Gerald Willmann

Homework 4

Problem 1: Fixed exchange rates.

a) Find out approximately what percentage of countries uses fixed exchange rate regimes these days. How would you modify your answer in order to take into account the relative importance of countries?

b) Mathematically, combine the log-linear money market, PPP, and uncovered interest rate equations to establish a relationship between nominal money supply, the exchange rate, its expected rate of change, domestic output, the foreign price level (all in logs), and the foreign or world interest rate.

c) Suppose you are the central banker of a small country and want to maintain a fixed exchange rate. In which direction would you have to adjust money supply in response to changes in all the other variables mentioned above. Which coefficients determine the quantitative aspect of your adjustments? Try to find estimates for these two coefficients (no need to estimate them yourselves but feel free to).

Problem 2: Consider a country with a fixed exchange rate and substantial budget deficits. The exchange rate is fixed at 1100 local currency units per dollar. Initially (at time $t = 0$), half of its money supply is backed by domestic credit and half by foreign reserves. Due to budget deficits, domestic credit increases at a rate of 10% per month. The semi-elasticity of money demand with respect to the interest rate is 2 and $\eta y + p^* - \lambda i^* = 10$.

a) What is the initial nominal money supply?

b) When will the country be forced to abandon the peg, i.e. when do we see a crisis?

c) Depict the money supply and its composition over time.

Problem 3: The following is a debt reduction deal for a country which is unable to fully repay its debt in some states of the world. The nominal debt is 100 and the stock of international reserves is 10. The following table describes debt repayments in two states of the world.

	good state	bad state
probability	1/2	1/2
debt repayment	100	50

a) If the creditors have no access to the country's international reserves is it profitable for the country to buy back its debt?

b) If the creditors do have access to the country's international reserves is it profitable in this case for the country to buy back its debt?