Homework 2: The behavior of exchange rates

Questions

1. Forecasting exchange rates

(a) Is it possible to predict the future *level* of the spot rate based on the past levels of the spot rate?

(b) What are the problems with the following regression equation that one might use to predict the future spot rate:

$$\ln S_{t+n} = a + b \ln S_t + e_{t+n};\ H_0 : a = 0; b = 1.$$

(c) Is it possible to predict future *changes* in the spot rate, based on the past changes in the spot rate? To determine this, you could run a regression of the following form:

$$\ln S_{t+n} - \ln S_t = a + b\left(\ln S_t - \ln S_{t-n}\right) + e_{t+n};\ H_0 : a = 0; b = 1.$$

(d) Compare your results from estimating the two regressions equations above. From this, what do you conclude about the behavior of the spot rates. What are the implications of these results for a firm manager.

2. The spot and forward exchange rates

(a) Can one predict the change in the spot rate using the current forward premium. To do this, you could run a regression of the following type:

$$\ln S_{t+n} - \ln S_t = a + b\left(\ln F_{t,t+n} - \ln S_t\right) + e_{t+n};\ H_0 : a = 0; b = 1.$$

(b) What are the implications for a firm manager of the results of the above regression equation.

(c) Based on the regression results, if you are the manager of a US firm that is long DEM or JPY, and the foreign currency is at a forward discount today, should you hedge your position or should you leave the position unhedged? On average, which strategy will lead to a larger return? How risky is such a strategy?

3.

Can one predict the changes in the spot rate using macroeconomic variables? Describe and provide details of the statistical analysis underlying your response.

4.

What is the empirical relation between nominal and real exchange rates? What are the implications of this for the firm manager? (This is a slightly deep question, and you should devote some thought to it.)

Some suggestions

- Data for the case is available in the course web page.
- It is at least as important to focus on the results you get from your empirical analysis of exchange rates as on the mechanics of running regressions.