SIMON FRASER UNIVERSITY
Department of Economics

Econ 842 | Prof. Kasa
International Monetary Economics | Spring 2011

PROBLEM SET 2 - EXCHANGE RATES
(Due March 9)

1. In class we discussed the monetary model of exchange rates under the assumption that the exchange rate was perfectly flexible and that monetary policy was exogenous. Suppose instead the central bank makes a (credible) promise to use monetary policy to permanently fix the exchange rate at some point T in the future. The central bank governor is a believer in the wisdom of the market, and announces that the exchange rate that will prevail after period T is whatever the market value is on that date. (Just so you know, this is similar to what Europe did in the run up to the euro). For simplicity, assume foreign market conditions remain constant, and normalize all foreign variables to zero. Likewise assume domestic output remains constant, and normalize it to zero too. In this case, the (log) nominal exchange rate, s_t, obeys the following expectational difference equation,

$$s_t = (1-\beta)m_t + \beta E_t s_{t+1}$$

   Given this, what do you think of the central bank's plan? Do you see any problems with it? Explain.

2. Pick a pair of countries, and using the Campbell-Shiller methodology, test the monetary model of exchange rate determination. Define the fundamentals to be $f_t = m_t - m_t^* - (y_t - y_t^*)$, where m and y are logs of the money supply and (real) GDP. (Notice that you can just set the income elasticity of money demand to one). First, plot f_t against s_t. Next, test whether f_t has a unit root, and based on the results, estimate a VAR in either (s_t, f_t) or $(s_t - f_t, \Delta f_t)$. Following the discussion in Engel and West (JPE, 2005), set the discount factor, β, to 0.96. Report tests of the implied cross-equation restrictions, and then plot the actual exchange rate (or the spread, $s_t - f_t$, if fundamentals have a unit root) against the predicted exchange rate (or spread). Finally, check whether exchange rates Granger Cause fundamentals. How do your results here compare to Engel and West's?

3. Pick a pair of countries, and test Uncovered Interest Parity. That is, run the OLS regression

$$\Delta s_{t+1} = \alpha + \beta(i_t - i_t^*)$$

   and test the null hypothesis $\beta = 1$. What do you find? Does the regression appear to be well specified? Report diagnostics. Does the conclusion depend on whether you use 'robust' standard errors? Cross-check your results by instead looking for predictable excess returns. That is, form the (ex post) excess return variable, $R_{t+1}^e = \Delta s_{t+1} - (i_t - i_t^*)$ and see if you can predict it using time-t information? Are your results the same as before?