SIMON FRASER UNIVERSITY
Department of Economics

Econ 446 — Prof. Kasa
Seminar in International Finance — Spring 2024

FINAL EXAM - Take Home (Due April 19, midnight)

Answer the following questions True, False, or Uncertain. Briefly explain your answers. (10 points each).

1. Uncovered Interest Parity does not hold with fixed exchange rates.
2. Countries experiencing rapid productivity growth have appreciating real exchange rates.
3. If exchange rates are predictable, then you can make money in the foreign exchange markets.
4. The IMF should not bail out countries that are hit by a speculative attack.

The following questions are short answer. Briefly explain your answer. Clarity will be rewarded.

5. (30 points). **The Monetary Model with Endogenous Monetary Policy**. In class we developed a simple model of flexible exchange rate dynamics that assumed monetary policy was exogenous. It was assumed the money supply process (or interest rate) did not react to current economic conditions. Now let's make things a bit more realistic. Suppose instead the Central Bank targets the price level, and does so by raising the nominal interest rate when the price level exceeds some fixed target. Now the money supply becomes endogenous. In particular, suppose the Central Bank's policy function is

$$i_t = \lambda(P_t - \bar{P})$$

where $\bar{P}$ is a fixed target price level, and $\lambda > 0$ is a constant feedback parameter.

The rest of the economy is (almost) the same as in Lecture 15. To simplify, let's normalize the foreign interest rate and (log) price level to be zero. We don't need to specify the money supply process here, since it becomes endogenous, and the Central Bank instead uses i_t as its policy variable. Now Uncovered Interest Parity takes the form

$$i_t = E_t s_{t+1} - s_t$$

where s_t is the log of the spot exchange rate (defined as the price of foreign currency). Finally, suppose that PPP holds only in the long run, so that (since P^* is assumed to be 0)

$$P_t = s_t + u_t$$

where u_t is a stationary, autoregressive process that captures temporary deviations from PPP. Assume it follows the process

$$u_t = \rho u_{t-1} + \varepsilon_t \qquad 0 < \rho < 1$$

where ε_t is mean zero i.i.d., and can be interpreted as a domestic price level shock.

(a) Combine the PPP and UIP relationships with the policy reaction function to derive an exchange rate equation that looks just like the one we had in class

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

What are β and f_t now?

(b) Use the law of motion for u_t to solve the above difference equation for s_t.

(c) How does a positive inflation shock affect the exchange rate? Does the exchange rate appreciate or depreciate? Explain intuitively. (Hint: See a paper by Richard Clarida entitled "Is Bad News on Inflation Good News for the Dollar?")

6. (30 points). Monetary policy confronts a basic choice - it can either stabilize the quantity of money, or the value of money (ie, the price level), but not both at the same time. The current International Financial System is based on controlling the value of money, with little or no restrictions on the quantity of money. Some promoters of digital currencies advocate for controlling the supply of money (eg, bitcoin is supposedly capped at 21 million). How would such a system operate? Explain how it would compare to the historical Gold Standard period. Based on some of the class presentations, explain how Central Banks could introduce a digital currency that could produce a more stable value.