Problem 1. Consider a Dutch investor with 1,000 euros to place in a bank deposit in either the Netherlands or Great Britain. The (one-year) interest rate on bank deposits is 2% in Britain and 4.04% in the Netherlands. The (one-year) forward euro-pound exchange rate is 1.53 euros per pound and the spot rate is 1.5 euros per pound.

(a) Is the forward market in equilibrium?

(b) What is the forward premium?

(c) What is the expected depreciation of the euro (against the pound) over one year?

Problem 2. Suppose that Vietnam and Côte d'Ivoire produce coffee. The currency unit used in Vietnam is the dong (VND). Côte d'Ivoire is a member of Communauté Financière Africaine (CFA), a currency union of West African countries that use the CFA franc (XOF). In Vietnam, coffee sells for 4,500 VND per pound. The exchange rate is 30 VND per 1 CFA franc, $E_{\text{VND / XOF}} = 30$.

(a) If the LOOP holds, what is the price of coffee in Côte d'Ivoire, measured in CFA francs?

(b) Assume the price of coffee in Côte d'Ivoire is actually 160 CFA francs per pound of coffee. Compute the relative price of coffee in Côte d'Ivoire versus Vietnam. Where will coffee traders buy coffee? Where will they sell coffee? How will these transactions affect the price of coffee in Vietnam? In Côte d'Ivoire?

Problem 3. Treat Brazil (currency *real*, code BRL) as the *home* country and the United States as the *foreign* country. Suppose the cost of the market basket in the United States is $P_{US} = 190\,\text{USD}$, the exchange rate is 4.07 BRL per 1 USD, and the price of a market basket in Brazil is 520 BRL.

(a) Determine the price of a US basket in BRL.

(b) Determine the real exchange rate.

(c) Determine whether or not PPP holds.

(d) Determine whether the real overvalued or undervalued.

(e) Determine whether the real is expected to appreciate or depreciate.

(f) Approximately how long it will take for PPP to hold within a 5% threshold (i.e. a PPP deviation within $\pm 5\%$), given that 85% of a PPP deviation exists after one year.

Problem 4. In 1996, Japan experienced relatively slow output growth of 1%. South Korea experienced output growth of 6%. Suppose the Bank of Japan allowed the money supply to grow at 2% each year, whereas South Korea allowed money growth of 15% per year.

(a) What is the inflation rate in Japan and South Korea?

(b) What is the expected rate of depreciation in the Korean won (KRW) relative to the Japanese yen (JYP)?

Problem 5. The law of one price implies purchasing power parity. But does purchasing power parity imply the law of one price? If yes, prove it. If no, construct a counter-example.