Problem 1. Treat Brazil (currency *real*, code BRL) as the *home* country. Suppose the cost of the market basket in the United States is $P_{US} = 190$ 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 whether or not PPP holds.

(c) Determine whether the real overvalued or undervalued.

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

Problem 2. For the US and Europe, suppose inflation forecasts are $\pi^e_{USD} = 3\%$ and $\pi^e_{EUR} = 1\%$. Consider the following scenarios concerning one year later.

(a) If absolute PPP holds, then what would you forecast for the depreciation in USD?

(b) Suppose PPP fails: a US basket of a good costs 100 USD, whereas the Euro cost of the same basket – after accounting for the exchange rate – is 130 USD. What would we forecast for the depreciation in USD relative to the EUR by next year?

Problem 3. Assume Turkey's money growth rate is currently 12% and Turkey's output growth is 5%. Europe's money growth rate is 4% and its output growth is 2%. Also assume Turkey's inflation rate is currently 7% and the world real interest rate is 2%. In what follows, use the conditions associated with the simple monetary model. Treat Turkey as the home country and define the exchange rate as Turkish lira per euro, $E_{\text{TRY / EUR}}$.

(a) Compute the nominal interest rate in Turkey.

(b) Compute the expected rate of depreciation in the Turkish lira relative to the euro.

(c) Suppose the Central Bank of the Republic of Turkey decreases the money growth rate from 12% to 8%. If nothing in Europe changes, what is the new inflation rate in Turkey? What is the new nominal interest rate in Turkey?

(d) Illustrate how the change in (c) affects M_t, real money supply, P_t, and $E_{\text{TRY / EUR}}$ over time. The change in the money growth rate occurs at time T.

Problem 4. Suppose Turkey's money growth rate is 2% and its output growth is 0%. Europe's money growth rate is 1% and its output growth is 0%. The world real interest rate is 3%. Use the conditions associated with the general monetary model. Treat Turkey as the home country, and define the exchange rate as Turkish lira per euro, $E_{\text{TRY / EUR}}$. Assume all trends continue unless stated otherwise.

(a) Find the rate of inflation, real money balance growth rate, the rate of depreciation, and the nominal interest rate.

(b) Suppose at time T, Turkey increases its money growth rate to 3%. Find the rate of inflation, real money balance growth, depreciation, and nominal interest.

(c) Draw the time series for Turkish M, P, real money balances, E, and i.