Global Business Environment
Fall semester 2025
https://www.icorsi.ch/course/view.php?id=21583

Prof. Luisa Lambertini
E-mail: luisa.lambertini@usi.ch

Problem Set #2

due Wednesday November 12, 2025 at 11h00

Problem 1 (Exchange rates) - 7 points

1. (*5 points*) Suppose the dollar exchange rates of the euro and the yen are equally variable. The euro, however, tends to depreciate unexpectedly against the dollar when the return on the rest of your wealth is unexpectedly high, while the yen tends to appreciate unexpectedly in the same circumstances. As a European resident, which currency, the dollar or the yen, would be considered riskier?

   (If you feel that something is ambiguous in this problem, make additional assumptions or consider all possible cases.)

2. (*8 points*) Go to `https://fred.stlouisfed.org/`. Locate the monthly exchange rate data between the United States (dollar) and:

   (a) Canada (dollar)
   (b) China (yuan)
   (c) Thailand (baht)
   (d) Venezuela (bolivar)
   (e) Your own country

   Plot these exchange rates over time separately for each country. Look at the graphs and try to identify when the currencies of the above countries were fixed relative to the U.S. dollar.

Problem 2 (Forward Exchange Rate) - 15 points

Suppose the spot exchange rate between the US Dollar and the Euro is $E_{USD/EUR} = 0.9745$.

1. (*4 points*) The 1-year forward rate between the US Dollar and the Euro is quoted as 236.60 points. Calculate the forward exchange rate $F^{1y}_{USD/EUR}$.

2. (*4 points*) Does the market expect an appreciation or a depreciation of the US Dollar relative to the Euro in one year?

3. (*4 points*) Can you give an intuitive explanation for your answer in (2) above?

4. (*3 points*) Suppose $R^{1y}_{USD} = 0.05$. Find R^{1y}_{EUR} that satisfies the covered parity condition.

Problem 3 (Put Option) - 20 points

You buy a put option to sell 1'000 EUR in three months. The fee for the option is 75 CHF, which is paid at the signing of the contract. The 3-month interest rate in the Euro zone is R^{3m}_{EUR}=1.3% while the 3-month interest rate in Switzerland is R^{3m}_{CHF}=0.5%.

1. (*7 points*) If the spot exchange rate is $E_{CHF/EUR} = 0.95$, what is the 3-months expected exchange rate $E^e_{CHF/EUR}$ such that the interest parity condition holds?

2. (*7 points*) Suppose that the strike price of the put option matches the expected exchange rate from part (1), this is to say $X = E^e$. After 3 months the exchange rate becomes $E_{CHF/EUR} = 0.93$. Will you exercise the option? What will your payoff and profit be? Graph your answer.

3. (*6 points*) Suppose that the strike price of the put option matches the expected exchange rate from part (1), this is to say $X = E^e$. After 3 months the exchange rate becomes $E_{CHF/EUR} = 0.98$. Will you exercise the option? What will your payoff and profit be? Graph your answer.

Problem 4 (Domestic Money Demand) - 50 points

Make sure to round your results up to three decimal digits. Suppose the 1-year German interest rate is of $R_{EUR} = 0.05$, the expected exchange rate between Swiss Francs and Euros is $E^e_{CHF/EUR} = 1.1$, the Swiss price level is $P_{CHF} = 1$, and the German price level is $P_{EUR} = 1.00$. Suppose also that nominal money supply in Switzerland is equal $M^s_{CHF} = 200$ and the output in Switzerland is of $Y_{CHF} = 100$. Finally, the real money demand in Switzerland is equal to

$$L(R_{CHF}, Y_{CHF}) = 100 + 1.5 \times Y_{CHF} - 5000 \times R_{CHF}$$

1. *(5 points)* Find the equilibrium 1-year Swiss interest rate R_{CHF}.

2. *(5 points)* Find the equilibrium spot exchange rate $E_{CHF/EUR}$.

3. *(5 points)* Does the market expect an appreciation or a depreciation of the CHF relative to the EUR in the next year?

4. *(10 points)* Suppose there is a *temporary* increase in Swiss output, $Y^1_{CHF} = 200$. In a diagram with the money market (at the bottom) and the Forex market (at the top), illustrate the short-run equilibrium if the domestic central bank does *not* accommodate the change in domestic money demand. *(Hint: since it is a temporary change in money demand, the expected exchange rate is unaffected.)*

5. *(10 points)* Solve for the new short-run equilibrium. This is the domestic interest rate R^1_{CHF} and the spot exchange rate $E^1_{CHF/EUR}$

6. *(10 points)* In a diagram with the money market (at the bottom) and the Forex market (at the top), illustrate the short-run equilibrium following the change in domestic money demand in (d) if the domestic central bank accommodates the change in domestic money demand.

7. *(5 points)* Solve for the new short run level of money supply $M^{s,1}_{CHF}$. Do the spot exchange rate and the domestic interest rate change in the short run?