Econ 4382 - International Finance   Spring 2026
Granados

Problem Set # 2

Due date: 2/18

Answer the following questions. Show your work. As mentioned in class, you are encouraged to work in groups but must write your own answers.

1. **(FT 14.7; Cross-country differentials)** Consider two countries: Japan and Korea. Real output growth in Japan is 1% while in Korea is 6%. Suppose the bank of Japan allowed money supply to grow by 2% and the bank of Korea implemented an even higher growth rate of 12% (growth per year).

   For the following questions treat Korea as the home country and Japan as the foreign one. Also, assume the prices are flexible and use the quantity theory model in which L is constant.

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

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

   (c) When would this calculation be valid? when it would not? and Why? [Hint: think about what theory is used to get the depreciation and when it holds]

   (d) Suppose that the Bank of Korea increases the money growth rate from 12% to 15%. If nothing in Japan changes, what is the new inflation rate in Korea?

   (e) Suppose the Bank of Korea wants to fix their exchange rate against the Japanese Yen (i.e. to maintain a peg). What is the money growth that the bank would have to implement in such case? [Hint: a fixed exchange rate is constant]

   (f) Using time series diagrams, illustrate how an increase in money growth rate (e.g., the one assumed in (d)) affects the money supply, M_k; Korea's interest rate i_k; prices P_k; real money supply M_k/P_k; and $E_{w,¥}$ over time (plot reach variable on the vertical axis and time on the horizontal). [Hint: See figure 14-6 in the textbook —FT— or check the lecture's slides]

2. **(FT 14.8) Cross-country differentials with liquidity** Now answer based on the quantity theory model where the liquidity is no longer constant ($L(i)$) and money demand is inversely related to the nominal interest rate. Consider the same scenario described at the start of the previous question. In addition, the bank deposits in Japan pay a 3% interest rate ($i_¥ = 3\%$)

   (a) What is the interest rate paid on Korean deposits (i_w)? [Hint: UIP]

   (b) Using the definition of the real interest rate (nominal interest rate adjusted for inflation), show that the real interest rate in Korea is equal to the real interest rate in Japan.

   (c) Now suppose the Bank of Korea increases the money growth rate from 12% to 15%. Using time series diagrams, illustrate how this increase in money growth rate affects the money supply, M_k; Korea's interest rate; prices P_k; real money supply; and $E_{w,¥}$ over time (plot reach variable

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on the vertical axis and time on the horizontal). [Hint: See figure 14-14 in the textbook -FT- or check the lecture's slides, also notice this is the same as 1.d but with $L(i)$ rather than $\bar{L}$]

3. **(Real interest rate parity)** Answer the following based on the real interest rates parity result:

   (a) Briefly, what is the real interest parity? Is this a long-run or short-run results?

   (b) Real interest parity is the outcome of two other "parity conditions". Name them and provide a formula for each. Use dollars and euros in your equations

   (c) Derive the real interest parity from the two equations you listed before.

4. **(Integrated Short-run and Long-run approaches)** Use money market and FX diagrams [an example is figure 15-7 in the textbook] to answer the following questions about the dollar-pound exchange rate $E_{\$/£}$. How does a change in money supply affect interest rates and exchange rates? On all graphs, label the initial equilibrium point "A".

   (a) Illustrate how a **temporary** decrease in the U.S. money supply affects the money and FX markets. Label the short-run equilibrium point "B". [Hint: Just focus on the short-run here as expected depreciation won't change, also prices are sticky in this case]

   (b) Now illustrate how a **permanent** decrease in the U.S. money supply affects the money and FX markets. Label the **long-run equilibrium** point "B". [Hint: in the long-run prices are flexible]