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Problem Set #4

due Monday October 21, 2019

PART I. *True, False, or Uncertain?* Give a brief explanation of your answer.

1. *(10 points)* The Federal Reserve is likely to keep U.S. interest rates unchanged at the next meeting of the Federal Open Market Committee on October 29-30 because the inflation rate is currently at 1.8 percent (*this is a fact*).

PART II.

1. *(30 points)* **Money Demand Abroad** Suppose there is a temporary decrease in aggregate real money demand abroad, that is, given a certain level of income and interest rate foreign residents demand less foreign money. In a diagram with the *domestic* money market at the bottom and the Forex market at the top illustrate the short-run effects on the exchange rate (# of domestic currency units for 1 unit of foreign currency), the interest rate and money supply under the following assumptions:

(a) *(15 points)* the foreign central bank accommodates the reduction in money demand and leaves the foreign interest rate unchanged;

(b) *(15 points)* the foreign central bank leaves foreign money supply unchanged.

2. *(60 points)* **Domestic Money Demand** Suppose the interest rate on a 1-year EUR denominated deposit is $R_{EUR} = 0.05, E^e_{CHF/EUR} = 1.21, P_{CHF} = 1, P_{EUR} = 0.9$. Suppose also that nominal money supply in Switzerland is equal $M^s_{CHF} = 400, Y_{CHF} = 100$ and that real money demand is equal to

$$L(R_{CHF}, Y_{CHF}) = 300 + 1.02 \times Y_{CHF} - 100 \times R_{CHF}$$

(a) *(10 points)* Find the equilibrium interest rate on a 1-year CHF denominated deposit R_{CHF}.

(b) *(10 points)* Find the equilibrium spot exchange rate $E_{CHF/EUR}$.

(c) *(10 points)* Suppose money demand *temporarily* changes to

$$L^1(R_{CHF}, Y_{CHF}) = 300 + 1 \times Y_{CHF} - 100 \times R_{CHF}$$

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.)*

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

(e) *(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 (c) if the domestic central bank accommodates the change in domestic money demand.

(f) *(10 points)* Solve for the new short run level of money supply $M^{s,2}_{CHF}$. Do the spot exchange rate and the domestic interest rate change in the short run?