Exchange Rates and International Economics

Exchange Rates

• Exchange rates = "price" of a currency
  – How much of 1 currency you must give up to acquire the other currency
• In this way, one can view a currency as a commodity
  – Currency markets resemble goods markets
• Exchange rates can be fixed, managed, freely floating
• Note that demand for a foreign product indicates a demand for that currency, and a supply of your currency

Demand/Supply for Currency

• Demand for a currency is downward sloping in relation to its “price” (exchange rate)
• Supply of currency is upward sloping in relation to its “price” (exchange rate)
• The equilibrium exchange rate is the intersection of the demand and supply for that currency
Demand/Supply for Currency

- What causes the demand/supply for currency to change?
  - Changes in the demand/supply for foreign goods
  - Changes in the demand/supply for domestic goods
  - Changes in interest rates in both countries
  - Changes in political stability, resources, etc. in either country
- In other words, demand for currency is often a "derived demand"

Currency Appreciation/Depreciation

- A currency appreciates when its value rises – that is, it can command more foreign currency (FC) than it did previously
- A currency depreciates when its value falls – that is, it commands less FC than it did previously.
- Note, if ¥/$ exchange rate rises, the US$ has appreciated, while the ¥ has depreciated (since the $/¥ rate fell)

Exchange Rate Arbitrage

- Is the ¥/$ exchange rate the same in Tokyo as it is in New York?
- Can we determine the ¥/$ exchange rate if we know the £/$ and the £/¥?
- We know that the existence of arbitrage opportunities motivated international trade – similarly, arbitrage opportunities exist in international finance
- To determine if arbitrage opportunities exist with exchange rates, we must look at the “Cross Rates”
Interest and Exchange Rates

- We have previously discussed why SR exchange rates may fluctuate.
- Here are some additional potential influences on SR exchange rates:
  - Interest rate changes
  - Changes in the expected future spot rate (erₙ)

Return on Foreign Assets

- What determines the expected return on a foreign asset? (e.g., a bond denominated in Mexican pesos)
  - Basic return on the bond itself
  - Expected gain loss on currency exchanges
- Recall that the real return on a domestic investment is equal to the (Nominal Return) – (Inflation Rate) - For an international investment, we must consider exchange rate changes as well.

Example #1

- Suppose you have $1000 to invest
- Current US$/MXP exchange rate is 3MXP/1$
- Return on Mexican Bond (iₗ) = 5%
- Suppose, after 1 year, (unexpected) 3.3% depreciation of MXP
- What is the real return on the bond?
• We can extend this example by including the domestic interest rate (i) and the expected future exchange rate (er$^e$)
  • Suppose that (i) changes while $i_f$ and er remain constant
    – This should cause the domestic currency to appreciate

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Example #2

• Suppose US, Swiss 90-day bonds
• US interest rate (i) = 9%
• Swiss interest rate ($i_f$) = 5%
• er = $.50/1SF
• er$^e$ = $.505/1SF

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Example #3

• What happens if the expected future spot rate (er$^e$) changes?
• Suppose US, Swiss 90-day bonds
• US interest rate (i) = 9%
• Swiss interest rate ($i_f$) = 5%
• er = $.50/1SF
• er$^e$ = $.505/1SF