ECON 133 – Securities Markets – Fall 2010
Practice Problems – Foreign Exchange

1. Which of the following currency movements can be described as dollar appreciation? Note, ¥ denotes Japanese yen and CA$ denotes Canadian dollar.

   a. From ¥100/$ to ¥110/$
   b. From ¥110/$ to ¥100/$
   c. From $0.7/CA$ to $0.8/CA$
   d. From CA$1.5/$ to CA$1.4/$

2. Uncovered Interest Parity – The annual interest rate on the euro zone is 10% and 5% in the U.S. Suppose the exchange rate is currently at 1.25 dollar per euro. Calculate the expected exchange rate one year from now, assuming the uncovered interest rate parity holds.

   ANS: You don't have to memorize any equations. Just remember, the high-interest currency has to depreciate.

   UIP: $1+5\% = (1+10\%) \times (1/1.25)/E_1$
   $E_1 = 0.838$ euro/$, the dollar appreciates.

3. Covered Interest Parity – The risk-free interest rate in the US is 4% while the risk-free interest rate in the UK is 9%. If the British pound is worth $2.00 in the spot market, a 1-year futures rate on the British pound should be worth _____.
   A. $1.83
   B. $1.91
   C. $2.08
   D. $2.18

$$F_1 = (2.00)\frac{1+.04}{1+.09} = 1.91$$

4. One year U.S. interest rates are 5% and European interest rates are 7%. The spot euro direct exchange rate quote is 1.32 and the one year forward rate direct quote is 1.35. If you have $1 million dollars or € 1 million to start with what would be your dollar profits from an interest arbitrage based on this data?

   A. $94,322
   B. $55,345
   C. $44,318
   D. $33,595

   This is called covered interest arbitrage, the steps are outlined below:
   1. Borrow $1 million, in one year owe: $1 million *1.05 = $1,050,000
   2. Sell dollars and buy euro spot: $1,000,000/$1.32 = €757,575.76
   3. Invest in euro securities and earn 7.00%: €757,575.76 * 1.07 = €810,606.06
   4. Cover $1,050,000 owed in one year by selling euro forward:
   €810,606.06 * $1.35 = $1,094,318.18
   Repay $1,050,000 and net $1,094,318.18 - $1,050,000 = $44,318.18