AcF305: International Financial and Risk Management

Week 7 tutorial questions

1. Assume that the contracts discussed below are described with the GBP as the home currency and that the option's expiration date matches the expiration date of the cash flow to be hedged. Illustrate how the exchange rate at the contract expiration (maturity) affects the GBP value of:

    a. An NZD 500,000 accounts receivable and a purchase of ten puts each worth NZD 50,000 with a strike price of GBP/NZD 0.42.
    b. A JPY 10,000,000 accounts payable and a purchase of ten calls each worth JPY 1,000,000 with a strike price of GBP/JPY 0.0067.

2. The Thailand Plettery Steel Company has a debt of NZD 100,000, which is repayable in 12 months. Plettery's controller Jane Due is having trouble sleeping at night knowing that the debt is unhedged. The current THB/NZD exchange rate is 20, and p.a. interest rates are 21 percent on THB and 10 percent on NZD. Jane is considering a forward hedge (at $F_{t,T} = 20 \times 1.21/1.10 = 22$), but a friend tells her that he recently bought a call on NZD 100,000 with $X = 20$, and is willing to sell it to her at the historical cost, THB 1 per NZD or THB 100,000 for the total contract. What should she do?

3. Assume that the interest rates are 21 percent and 10 percent p.a. in Thailand and Switzerland, respectively. Consider a call and a put with X = THB/CHF 21.

    a. What is the lower bound for European-style options with lives equal to $T - t$ = 1 year, 6 months, 3 months, and 1 month, when S_t = 18, 20, 22, and 24, respectively?
    b. If $S_t = 20$, $r_{t,T} = 0$ .21, $r^*_{t,T} = 0.10$, a one-year call with X = THB/CHF 20 priced at 1 is undervalued. Show that there is an arbitrage opportunity.