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ECO 442

Problem Set 1 - Foreign Exchange

1. You are a government official in the island country of Malawi (local currency the *mali*). You have borrowed heavily from foreign banks and your debt is denominated in *dollars*. Suppose this year you need to make a payment of $200,000 for interest on this debt to the foreign banks.

a) Assume the current exchange rate is $E_{\$/mali}$=56.2. How large is your interest payment in *mali* terms?

b) Suppose the previous year you had bought $50,000 on the forward market at the 12-month forward rate of 58.4 \$/*mali*. Now, how much (in *mali*) do you need to make the $200,000 interest payment (Note: any money not bought in the forward market must be bought in the spot market)? Assume the current spot rate of (a).

c) Suppose that, instead of buying dollars on the forward market, you had purchased a call option for $50,000 at a strike price of $52.8 \$/*mali*. Now, how much (in *mali*) do you need to make the $200,000 interest payment (Note: any money not bought with the option must be bought in the spot market)? Assume the current spot rate of (a).

2**.** The current *yen*/\$ exchange rate is 95, and the *peso*/\$ exchange rate is 3.2. If triangular arbitrage holds, what is the *yen*/*peso* exchange rate?

3. Assume the current spot exchange rate is $1.95 =1.00£ and the three-month forward rate is $1.90 = 1.00£. Based on your analysis of the exchange rate, you are pretty confident that the spot exchange rate will be $1.92 = 1.00£ in three months. Assume that you are a foreign exchange investor which a choice to either buy or sell £1,000,000 on the forward market.

a. What actions (buy or sell pounds) would you take to speculate in the forward market?

b. What is the expected dollar profit from speculation?

c. What would be your speculative profit (or loss) be in dollar terms if the spot exchange rate actually turns out to be $1.86/£.

4. Assume the following spot exchange rates.

$S^{\$/jpy}_{bid}$ = .080
$S^{\$/jpy}_{ask}$= .085

where the bid price refers to (the bank) buying yen and the ask price to (the bank) selling yen.

a) Suppose an Japanese exporter has just received a payment of $50,000. How many Yen do they receive on conversion?

b) Suppose a U.S. firm has to make an immediate payment of 100,000 Yen. How many dollars do they need to make this payment?