International Financial Management   FINA 4860
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Second Midterm Exam

No points will be given by simply writing down formulas, and writing down definitions or irrelevant statements from the book, or saying "yes," will get you zero points. Justify all your answers. If you cannot prove something give some intuition. Good luck. <u>Reminder</u>: this is an open book exam, but <u>no</u> open notes.
<u>Time</u>: 1hr 20 minutes.

I. Problems (10 points each).

1. Chambers Inc. will pay GBP 500,000 in 270 days. It considers using (1) a forward hedge, (2) a money market hedge, or (3) no hedge. Chambers develops the following information:
* Spot rate of British pound as of today = 1.61 USD/GBP
* The 270-day forward rate of the British pound, $F_{t,270}$, is equal to 1.58 USD/GBP
* The interest rates, for a 270-day holding period, are as follows:
      deposit rate: 3.5% in the U.K., and 1% in the U.S.
      borrowing rate: 4% in U.K., and 1.5% in the U.S.
* Chambers Inc. forecasted the future spot rate in 180 days as follows:

Possible Outcomes	Probability
1.56 USD/GBP	25%
1.58 USD/GBP	35%
1.60 USD/GBP	30%
1.66 USD/GBP	10%

Carefully describe each strategy. Which hedging strategy would you recommend to Chambers Inc? Do preferences matter for your strategy recommendation? Justify your answer.

2. Mr. Pendant is the owner of a publishing house in New York. Mr. Pendant exports books to Australia for AUD 500,000 per quarter. Mr. Pendant wants to set up a USD/AUD hedge that would ensure his ability to meet his USD obligations in the U.S., should the AUD collapse. In particular, he is very worried about a potential depreciation of the AUD against the USD in June. The AUD/USD exchange rate is 1.0188 USD/AUD.

A.   Specify what type of options should Mr. Pendant use (calls or puts).
B.   How many standardized contracts should Mr. Pendant buy?
C.   Using the information given in the quote clip, construct:
            i) at the money (closest in-the-money) June hedge.
            ii) out-of-the money June hedge.
            iii) a collar (with out-of-the-money options)

(Specify strike prices, total premium costs and worst case scenario.) Briefly discuss the advantages and disadvantages of each strategy. Which one would you recommend to Mr. Pendant? (Why?)

3. Assume that the following regression model was applied to historical annual data:

$e_{f,t} = \alpha + \beta\ INT_t + \tau\ INC_t + \delta\ TB_t + \varepsilon_t,$

where $e_{f,t}$ is the percentage change in the **KWD/USD** exchange rate in period t (KWD=Kuwaiti Dinar), INT_t is the interest rate differential between Kuwaiti and the U.S. in period t, INC_t is the income growth rate differential between Kuwait and the U.S. in period t-1, TB_t represents the change in the U.S. trade balance and ε_t is an error term. Assume that the regression coefficients were estimated as

$\alpha = .005$

$\beta = .90$

$\tau = -.70$

$\delta = .2$

This year the change in the U.S. trade balance, TB_t, is forecasted to be 10% and the income growth rate differential, INC_t, is forecasted to be 2%. This year INT_t is forecasted as follows:

INT	Probability
-2%	.10
-1%	.30
0%	.30
2%	.20
5%	.10

Now, you have to answer the following questions:

i. Using the above information, what will be your forecast for $e_{f,t}$?

ii. Assume St-1 is equal to 3.55 **USD/KWD**. Determine a range for your forecast for St?

4. You work for Quahog Industries, U.S. MNC. Quahog gives you the following projections for next year:

Currency	Total inflows	Total outflows	Current Exchange rate
CAD	CAD 80,000	CAD 40,000	1.00 USD/CAD
ARS (Peso argentino)	ARS 300,000	ARS 600,000	0.20 USD/ARS

a.- What is Quahog's overall transaction exposure (NTE)?

b.- Suppose the CAD and the ARS have zero correlation. The USD/CAD exchange rate increases to 1.20 USD/CAD. What is the change in NTE for Quahog Industries?

c.- Go back to part (a). Assume that changes in exchange rates (e_f) follow a normal distribution, with zero mean. The CAD's standard deviation is .08, while the ARS's standard deviation is .20. Determine the VAR (Value-at-Risk) for each currency using a 97.5% confidence level.

II. CASE (20 points)

Questions are based on the posted Bloomberg article (October 30, 2012). Briefly answer the following questions:
Note: No points will be given by simply writing lines from the article.

1) Norsk Hydro, the Norwegian aluminum and electricity giant, has transaction exposure in euros. What effect will the recent good news -improved numbers for the Spanish economy, speculation that Sandy will be better than expected- have on hedging activities: increase hedging or decrease hedging? (Hint: think about confidence intervals for overall net TE.)

2) Suppose Norsk Hydro decides to price its exports in Norwegian krones (NKK). Does this policy eliminate transaction exposure? What about economic exposure?

3) Suppose Norsk Hydro has matching inflows and outflows in JPY and HUF –i.e., overall net TE=0. According to the article, should Norsk Hydro worry about its exposure?

4) Suppose you believe Neil O'Connor, who expects a depreciation of the JPY against the USD. You work for Honda, which exports are priced in USD. According to Mr. O'Connor's expectation, should Honda hedge transactions exposure?

5) Many Swedish exporting companies, like Volvo and Ericson, have manufacturing plants outside Sweden. Approximately, 60% of Volvo's outflows are denominated in foreign currency, while 90% of Volvo's inflows are denominated in foreign currency. Suppose Volvo practice selective –i.e., not hedging 100%- hedging of its receivables denominated in foreign currency. Does selective hedging of transaction exposure affect its economic exposure? Briefly explain.

PHILADELPHIA OPTIONS

Tuesday October 22, 2012

		Calls		Puts	
		Vol.	Last	Vol.	Last
Australian Dollar					**101.88**
10,000 Australian Dollars -cents per unit.					
99	June	9	2.44	4	0.84
100	Apr	11	1.23	9	1.08
102	June	5	1.62	6	1.55
103	May	4	1.56	8	2.32
105	June	1	0.78	3	5.10
British Pound					**159.51**
10,000 British Pounds -cents per unit.					
156	June	4	5.74	3	0.67
158	May	10	0.84	...	...
160	June	8	1.66	2	3.21
161	May	5	1.36	3	4.42
162	June	3	0.99	1	5.15