

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. Reminder: this is an open book exam, but no open notes.

Time: 1hr 25 minutes.

I. Problems (10 points each).

1. Mr. Malone is the owner of an upscale English pub in Boston. Mr. Malone spends GBP 375,000 a quarter to buy British beer. Mr. Malone wants to set up a USD/GBP hedge that would ensure his ability to make affordable payments in USD, should the EUR collapse. In particular, he is very worried about a potential appreciation of the GBP against the USD in June.

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

(Specify strike prices and costs.) Briefly discuss the advantages and disadvantages of each strategy. Which one would you recommend to Mr. Malone? (Why?)

2. It is July 3, 2003. Malone, a U.S. company, imports beer from Poland. Malone expects to make a payment of PLZ 20 million in September 1, 2003 (PLZ=Polish Zloty). Malone is considering hedging this exposure using a September forward contract, which expires on September 1, 2003 and a money market hedge. The 3-month Polish interest rate is 7.5%, while the 3-month U.S. interest rate is 5%. On July 3, the spot exchange rate is 3.29 PLZ/USD and the September 1 forward trades at 3.32 PLZ/USD.

- (A) Use the information given in the attached Excel output (based on 9 years of monthly changes) to calculate:
- i) The VAR associated with Malone's open position (use a 97.5% C.I.).
 - ii) The worst case scenario for Malone.
- (B) Calculate the amount to be received on September 1, using a forward hedge.
- (C) Calculate the amount to be received on September 1, using a money market hedge.
- (D) Which strategy would you recommend?

• **DATA** (the information below is based on monthly percentage changes from 1994:1 to 2003:1.)

1-mo % change PLZ/USD	
Mean	0.00104
Standard Error	0.001424
Median	0.003569
Mode	#N/A
Standard Deviation	0.01473
Sample Variance	0.000217
Kurtosis	0.147665
Skewness	-0.48031
Range	0.071428
Minimum	-0.03916
Maximum	0.032266
Sum	0.111229
Count	107

3. Constanza Company, a U.S. company, does business in the U.S. and Italy. In attempting to assess its economic exposure, it compiled the following information:

• Its U.S. sales are somewhat affected by the Italian dollar's value because it faces competition from Italian exporters. It forecasts the U.S. sales based on the following exchange rate scenarios:

S_t (USD/EUR)	Revenue from U.S. (in million)
.95	USD 140
1.10	USD 160

- Its EUR revenues on sales to Italy invoiced in EUR are expected to be EUR 150,000,000.
- Its anticipated cost of goods sold is estimated at USD 60 million from the purchase of U.S. material and EUR 70 million from the purchase of Italian materials.
- Fixed operating expenses are USD 30 million.
- Variable operating expenses are estimated at 20 percent of total sales (including Italian sales, translated to a USD amount).
- Interest expense is estimated at EUR 40 million on existing euro loans. In addition, the company has USD 10 million loan, with an interest rate of 7.50%.

A. Create a forecasted income statement for Costanza under each of the two exchange rate scenarios.

B. Explain how Costanza's projected earnings before taxes are affected by possible exchange rate movements.

C. Explain how Costanza can restructure its operations to reduce the sensitivity of its earnings to exchange rate movements, without reducing its volume of business in Italy.

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

Currency	Total inflows	Total outflows	Current Exchange rate
GBP	GBP 25,000	GBP 15,000	1.50 USD/GBP
MXP	MXP 100,000	MXP 200,000	.10 USD/MXP

a.- What is Vandelay's net transaction exposure (NTE)?

b.- Suppose the GBP and the MXP are perfectly correlated. The USD/GBP exchange rate increases to 1.80. What is the change in net transaction exposure for Vandelay Industries?

c.- Go back to part (a). Assume that changes in exchange rates (e_t) follow a normal distribution. The GBP's standard deviation is .20, while the MXP's standard deviation is .005. Determine the VAR (Value-at-Risk) for each currency using a 97.5% confidence level.

II. WSJ CASE (20 points)

Read the attached WSJ article (June. 21, 1998) and briefly answer the following questions:

Note: No points will be given by simply writing lines from the article.

1) The WSJ reports that according to Mr. Landon “the dollar may strengthen to 121 yen and USD per euro within four weeks. In the context of what you have learned in this class, does his forecast make sense? Provide a forecast for the USD/EUR exchange rate in the next four weeks.

2) According to Paul Robson, Bank One expects the decline in the dollar to continue. Which theory are they using to forecast exchange rates?

3) Pendant, a U.S. company, has matching inflows and outflows in JPY and CHF. That is, Pendant’s NTE is equal to zero. According to the article, should Pendant worry about its exposure?

4) Last week, Swiss Cruises, a Swiss company, signed a contract to buy USD 150 million-worth of cruises from a U.S. manufacturer. Since the CHF has been appreciating against the USD lately, Swiss Cruises decided to hedge only 50% of the transaction. Swiss Cruises has more than 90% of its revenue from its sale of Caribbean cruise package to U.S. residents. Describe the Swiss Cruises exposure to foreign exchange risk. What is your assessment of the hedging decision of Swiss Cruises?

5) Mr. Toshihiko said that he would allow a weaker currency. You work for a U.S. firm, which imports Japanese electronics. According the recent actions taken by the Bank of Japan actions, should your firm hedge transactions exposure?

PHILADELPHIA OPTIONS

Friday, March 14, 2003

		Calls		Puts	
		Vol.	Last	Vol.	Last
Australian Dollar					65.37
50,000 Australian Dollars-cents per unit.					
64	June	...	0.01	20	0.31
65	May	20	0.30
66	June	30	0.42	...	0.01
British Pound					162.10
31,250 British Pounds- cents per unit.					
159	June	8	5.74	4	0.63
161	May	19	0.82
162	June	12	1.64	5	3.01
163	May	21	1.30	10	4.27
164	June	21	0.95	10	5.05