

Third 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.- Peterson Inc., a U.S. firm, plans to invest in a new project that will be located either in Ukraine or in Russia. If the Ukraine project is selected it will constitute 35% of the firm's total funds invested in itself. If the Russia project is selected it will constitute only 15% of the firm's total funds. Assume the risk-free rate is 5%. You have the following data on expected returns for each project:

	Peterson	Ukraine	Russia
Expected return	10%	20%	40%
Standard deviation	25%	30%	50%
Beta	.93	1.23	1.45
Correlation with existing Peterson's portfolio	1.00	.50	.05
Weight on overall portfolio	-	.35	.15

- Using the Sharpe-ratio as your performance ratio, which project would you recommend to Peterson? Why?
- Using the Treynor-ratio as your performance ratio, which project would you recommend to Peterson? Why?

2.- Clavin Corporation, a U.S.-based MNC, has a subsidiary in Korea that manages hotels. The subsidiary believes it could also enter into the adventure travel business. The following data has been compiled for the analysis (in wons, Korea's currency):

- Initial outlay: KOW 4000 million
- Life of the project: 3 years
- Earnings before taxes per year: KOW 2000 million
- Salvage value: KOW 1000 million
- Exchange rate: 1500 KOW/USD
- Forecasted exchange rates: $E[S_{t+1}] = 1400$ KOW/USD; $E[S_{t+2}] = 1200$ KOW/USD; $E[S_{t+3}] = 1000$ KOW/USD.
- The Korean government imposes a 30% tax on profits.
- The Korean government also imposes a 10% withholding tax on any funds remitted to the U.S. parent house (including salvage value).
- The U.S. government does not impose any tax on remitted funds.
- The required rate of return is 15%.

- i.- What is the evaluation of the project for Clavin Corporation?
- ii.- What is the evaluation of the project for Clavin Corporation's Korean subsidiary?
- iii.- Would you recommend the project to Clavin Corporation?

3.- Boyd Co., a Dutch company and one of the largest flower distributors in the world, wants to refinance short-term debt amounting to GBP 400 million. An investment bank suggests issuing a straight bond, with annual coupon payments. The investment bank has the following data available:

Dutch government bond yields: 4-year 4.60 % (s.a.)

British government bond yield (gilts): 4-year 5.20 % (s.a.)

Boyd Euro-GBP bond yield: British government bonds + 140 bps

Given the current tight market conditions, an investment bank suggests: a 4-year full-coupon bond, denominations of GBP 1,000, and an issue price of 100% ($P=100$).

(1) Following usual market practices, set the coupon and the yield of the new Boyd bond.

(2) One year from now, Boyd wants to value the bond. If the yield to maturity for similar bonds is 5.50%, without doing any calculation, does the price of the bond increase or decrease?

(3) Go back to (1). Two years later, Boyd wants to buy back the bonds. The yield to maturity for similar bonds is 6% and the exchange rate is 1.45 EUR/GBP. How much does Boyd have to pay (in EUR) for the bond buyback?

4.- The annual Bolivian peso (BOB) interest rate is 10%, while the annual USD interest rate is 5%. Malone Co., a U.S. firm, entered into a currency swap with a swap dealer, where it receives 6.0% annually in USD and pays 9% annually in BOL. The principals in the two currencies are USD 4 million and BOL 30 million. Assume the principals are also exchanged in the final payment. The swap will last for another three years. The exchange rate is .12 USD/BOB. For simplicity, assume the term structure in Bolivia and in the U.S. is flat –i.e., interest rates are constant through time.

- A. Draw a diagram showing the annual swap cash flows.
- B. Value this currency swap for Malone Co.
- C. A year from now, the exchange rate is .09 USD/BOB. Assuming that nothing else has changed, calculate the new value of the swap. With respect to the original situation, has the value of the swap increased for Malone Co.? Why?
- D. Go back to part C. Value the swap using the forward contract decomposition.

II. WSJ CASE (20 points).

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

Read the attached article (April 17, 2003) and briefly answer the following questions:

1) Given what you learned in this class, what kind of additional risk is ABN Amro Holding NV taking by investing in Brazil? What can ABN Amro Holding do to minimize these additional risks?

2) According to the article, many larger international banks are scaling back their operations in Brazil. Why are these big international banks reducing their investment from Brazil? (Do not repeat what the article states.)

3) According to the article, the Brazilian economy is struggling with high interest rates. Have the recent measures taken by President Lula da Silva reduce or increase country risk? Assume U.S. interest rates constant, measure the change in country risk since September 2002.

4) According to the article, ABN Amro agreed to pay BRR 2.29 billion for the Brazilian unit of Banca Intesa SpA in cash and stock. Assume that ABN borrows 30% to pay the agreed amount. Assume ABN Amro's spread in Brazil is 90 bps over the yield of government bonds. Assume the Brazilian banking sector has a beta of 1.10. The Brazilian stock market has an average return of 13%. The tax rate in Brazil is 30%. Assuming that there are no other loans to the new company, calculate the cost of capital for the new entity.

5) Historically, the average annual rate of return in the Brazilian automotive sector is 14%, while the average annual rate return on ABN Amro is 10%. Assume the historical rates of return are a good forecast for future rates of return. By how much would the Brazilian real have to change to cause ABN Amro's Brazilian investment to be unattractive?