

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 20 minutes.

I.- Problems (10 points each).

1.- Pantuzzo Inc. is considering two projects: one in Argentina (project A) and one in Brazil (project B). Pantuzzo's existing portfolio has an expected return of .20 (20%) and a volatility of (10%). The weight of project A in the expanded portfolio (P+A) is .15, while the weight of project B in the expanded portfolio (P+B) is .10. The correlation of each project with Pantuzzo's existing portfolio is .40 for A and -.20 for B. Assume, the risk-free rate is 5%

We are given the following information:

	Expected return	Volatility (σ)	Weight on portfolio	Correlation with portfolio
Project A	.24	.15	.15	.40
Project B	.30	.20	.10	-.20

Which project would you recommend Pantuzzo to adopt? Why?

2.- The annual Mexican peso (MXN) interest rate is 10%, while the annual USD interest rate is 6%. Malone Co., a U.S. firm, entered into a currency swap with a swap dealer, where Malone receives 5.0% annually in USD and pays 8% annually in MXN. The principals in the two currencies are USD 4 million and MXN 45 million. The swap will last for another four years. The exchange rate is .11 USD/MXN. For simplicity, assume the term structure in Mexico 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. What is the implied forward rate established in for each of the four years.
- D. Suppose the MXN interest rate decreases by 2%. Without doing any calculations, has the value of the swap for Malone Co. increased or decreased? Why?
- E. Suppose that a year from now, the exchange rate is .09 USD/MXN. Value the swap using the forward rate method.

3.- Boyd Corp., a U.S. firm, considers obtaining 70% of its one-year financing in Swiss francs (CHF) and 30% in Spanish pesetas (ESP). The forecasts of the appreciation (against the USD) of the CHF and ESP for the next year are as follows:

Currency	Possible e_t	Probability
CHF	1%	.35
CHF	2%	.65
ESP	2%	.60
ESP	3%	.40

The annual interest rate on the CHF is 6%, the annual interest rate on the ESP is 6%, and the annual interest rate in the U.S. is 7%. Calculate the possible effective financing rates of the overall portfolio. Would you advise Boyd Corp. to obtain financing abroad or at home? (Justify your answer, considering borrowing in CHF only, ESP only, in the above mentioned 70-30 portfolio of currencies, and in USD only.)

4.- Storm Corporation is considering an investment in Switzerland. They have the following information about the project:

- Initial investment required is CHF 50 million.
- The project's life is three years.
- The price, demand, and variable cost of the product in Switzerland are as follows:

<u>Year</u>	<u>Price</u>	<u>Demand</u>	<u>Variable cost</u>
1	CHF 60	600,000 units	CHF 30
2	CHF 65	550,000 units	CHF 35
3	CHF 70	450,000 units	CHF 40

- Fixed cost are estimated to be CHF 5 million per year.
- Projected exchange rates are $S_t = .50$ USD/CHF, $S_{t+1}^F = .52$ USD/CHF, $S_{t+2}^F = .55$ USD/CHF, and $S_{t+3}^F = .60$ USD/CHF.
- The Swiss government imposes a tax of 30% on income. In addition, it will impose a 10% tax on earnings remitted by the subsidiary. The U.S. government does not impose any additional taxes.
- All cash flows received by the subsidiary are to be sent to the parent company at the end of each year.
- The Swiss government allows for a maximum depreciation of CHF 10 million per year.
- Storm assesses that after taxes the salvage value of the investment is CHF 10 million. Assume that this amount is no subject to additional taxes.
- Storm requires a 15% rate of return on this project (i.e., discount rate is 15%)

(a) Should Storm accept this project? (Calculate NPV from the subsidiary's and parent's point of view).

(b) Does Storm's decision depend on the salvage value? (Hint: calculate the break even salvage value.)

II. WSJ CASE (20 points). Note: No points will be given by simply writing lines from the article.

Read the attached WSJ article and briefly answer the following questions:

1) Given what you learned in this class, why are several U.S. public utilities investing in Australia? (Repeating what Mr. Shapard said will give you zero points.)

2) What kind of additional risk is Texas Utilities incurring by purchasing Eastern Energy?

3) Why is Texas Utilities financing the majority of its Eastern Energy's purchase with long-term debt issued in Australia?

4) First, consider that Eastern Energy is the only foreign venture for Texas Utilities. Second, Eastern Energy had 1994 revenue of USD 560 million. In 1994 the exchange rate was .73 USD/AUD. Eastern Energy after tax profits are roughly 12% of total revenue (in 1994). Assume that in 1996, Eastern Energy revenue will decrease by 10% (in AUD) compared to 1994 levels. Provide a measure of the economic exposure of Texas Utilities in 1996? Compared to 1994 levels, could you say if the economic exposure of Texas Utilities will increase, decrease or remain constant in 1996?

5) Historically, the average annual rate of return in Australian utilities is 15%, while the average annual rate return on U.S. utilities is 12%. Assume the historical rates of return are a good forecast for future rates of return. By how much would the Australian dollar have to depreciate to cause Texas Utilities foreign investment to backfire?