

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 .17 (17%) and a volatility of .09 (9%). Pantuzzo is planning to invest USD 60 million in project A, with a weight on the expanded portfolio ω_{P+A} equal to .20, while the planned amount to invest in project B is USD 30 million, with a weight on the expanded portfolio (ω_{P+B}) equal to .10. The correlation of each project with Pantuzzo's existing portfolio ($\rho_{Proj, Pantuzzo}$) is .40 for A and -.05 for B. Assume, the risk-free rate is 5%.

We are given the following information:

	E[return]	Volatility (σ)	Weights (ω_{P+Proj})	$\rho_{Proj, Pantuzzo}$	Investment
Project A	.24	.15	.20	.40	USD 60M
Project B	.30	.20	.10	-.05	USD 30M

A. Using the Sharpe-Ratio measure, which project would you recommend to Pantuzzo?

B. Suppose you decide to use RAROC to evaluate the projects, which project would you recommend?

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 30-day 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 30-day period are as follows:

Currency	Possible e_f	Probability
CHF	1%	.35
CHF	2%	.65
ESP	0%	.60
ESP	-1%	.40

The 30-day interest rate on the CHF is 6%, the 30-day interest rate on the ESP is 7%, and the 30-day interest rate in the U.S. is 6.5%. 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.- Suppose JRV Corp is considering a project in Colombia, which requires an investment of COP 1000M (COP: Colombian peso). JRV is planning to use the usual 40/60 D/E split. To calculate the cost of capital, JRV gathers the following data (all annualized):

JRV can borrow in Colombia at 9% and in the U.S. at 4%.

5-year government (risk-free) rates: 7% in Colombia and 3% in the U.S.

Effective corporate tax rate in Colombia: 25%

Expected Colombian stock market return: 14%

U.S. stock market return: 8%

Beta of project: 1.4

$E[I_{Col}] = 5\%$

$E[I_{US}] = 2\%$

Stock market volatility: 35% in Colombia, 15% in the U.S.

Bond market volatility: 25% in Colombia, 12% in the U.S.

- a. Using WACC, calculate the cost of capital for the Colombian project.
- b. Suppose JRV does not trust the expected return reported for Colombia and decides to use the Mixed Approach to estimate the Colombian risk premium ($k_M - k_f$). Recalculate the cost of capital for the Colombian project.
- c. Continuation from b. JRV estimates the 1st-year free cash flows (FCF) to be COP 100M. Suppose that 1/3 of those FCF are used to pay for capital expenditures to expand and for replacing worn out assets; the rest is considered a dividend payment to JRV. JRV believes the project would produce dividends perpetually, growing at a 5% per year. Should JRV undertake the project?

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?