

Quiz 1: Equity Instruments

Answer all questions and show necessary work. Please be brief. This is an open books, open notes exam.

1. Modern Media, an all-equity funded US entertainment company, is planning an acquisition of an Mexican entertainment firm for \$ 500 million (entirely financed with equity). The expected cash flows for the target company have been estimated in nominal pesos and you have been asked for some advice on the inputs to use to estimate the cost of equity to discount these cash flows.
 - a. Given your desire to get a precise beta, which beta estimate would you use in your computation? (1 point)
 - i. The beta estimated for the US company against the S&P 500 (1.50)
 - ii. The beta estimated for the Mexican company against the Mexican Bolsa (0.60)
 - iii. The weighted average of the US and Mexican company betas (1.30)
 - iv. The average regression beta across entertainment companies (1.25)
 - v. The average unlevered beta across entertainment companies (1.05)
 - vi. None of the above
 - b. The Mexican government has 10-year U.S. dollar denominated bonds, trading at 5.25%, and 10-year nominal peso denominated bonds, trading at 7.25%, and both are rated AA by S&P. The ten-year U.S. T. bond rate is 4%. What risk free rate would you use to estimate the cost of equity? (1 point)
 - c. The historical risk premium for the U.S, over the last 80 years, is 4.5% and the historical risk premium, over the last 15 years, for Mexico is 9%. The standard deviation in the Mexican equity index has been roughly twice the standard deviation in the Mexican dollar denominated bond. Using the beta and risk free rate from the last two sections, estimate the cost of equity. (2 points)

2. You are trying to compute the cost of capital for a retail firm with significant operating lease commitments and some conventional debt and have collected the following information:
- There are two classes of shares outstanding in the firm: 12 million of non-voting shares that trade at \$ 10 a share and 2.5 million voting shares that do not trade but have an estimated value of \$ 12 a share.
 - The firm has a bank loan on its books with a face value of \$ 50 million, with 5 years left to maturity. The stated interest rate on the loan is 5%, but the company currently is rated BBB and the market interest rate on BBB rated bonds is 6%.
 - The firm has expected lease commitments of \$15 million each year for the next 8 years.
 - The cost of equity for the firm is 10%. The effective tax rate is 30% and the marginal tax rate is 40%

Estimate the cost of capital for the firm.

(3 points)

3. Leon Technology is a firm that specializes in advanced telecommunication software and has been in existence for 4 years. For the current year, the firm reported \$ 5 million in after-tax operating income and a book value of equity of \$ 25 million. However, the operating income was computed after an R&D expense of \$ 5 million. You believe that it will take approximately 5 years for R&D to commercially pay off in this business and have collected the R&D expenses for the 3 prior years the firm has been in existence:

	Year -3	Year -2	Year -1
R&D expense	\$ 2 million	\$ 3 million	\$ 4 million

- a. Estimate the capitalized value of research at Leon Technology. (2 points)

- b. Estimate the corrected after-tax operating income for Leon Technology (1 point)