

Final review questions

Comm 308 (Summer 2014)
Sections AA

Disclaimer: This document is provided to you as a preparatory aid. It may not be complete. You are responsible for all topics covered in the lectures and assignments, as well as all end of chapter suggested questions and any practice questions posted in your course folder (pre, and post mid-term).

1. Equity Valuation (Fall 2012)

ABC Inc.'s first quarterly dividend of \$2 per share is expected to be paid 6 months from today. From then on, dividends will grow by 2% per quarter for three years (for 12 quarters following the first payment). After three years, the dividends will start declining by 1% per quarter in perpetuity. Assume that ABC's required rate of return is 15% (Effective semiannual rate). What is the price of a share of ABC today?

2. Risk and Return:

Concepts reviewed: Risk, Return, CAPM

You have the following information about the probability of the three possible states of the economy and the corresponding returns on asset A, the market portfolio (M) and asset B:

State of the Economy	Probability	Available Assets		
		Asset A	Market Portfolio	Asset B
Boom	0.35	14%	25%	5%
Normal	0.30	-16%	10%	5%
Recession	0.35	14%	-5%	5%

- What is the expected rate of return for stock A based on the above probabilities?
- What is the variance of the return on the market portfolio? What is the variance of asset B, the so called asset? (Fill in missing word!)
- What is the covariance between stock A and the market portfolio? What is stock A's beta? What return should investors require based on stock A's systematic risk?
- Compare your results in parts a) and c) above. Does the expected return calculated in part a) provide adequate compensation given how risky stock A is? Is stock A under- or overvalued (or is it correctly priced)?

3. Options:

Concepts reviewed: Long and short option payoff, portfolio payoff

You are long two calls on the same share of stock with the same expiration date. The exercise price of the first call is \$40 and the exercise price of the second call is \$60. In addition you are short two identical calls, both with an exercise price of \$50. Plot the payoff of this portfolio. What are you betting on?

4. Cost of Capital:

Concepts reviewed: CAPM, WACC, Cash Flow estimation, NPV

Magnum Inc. is considering a new project, requiring an initial investment of \$10 million today (the investment involves the purchase of class 10 equipment with a CCA rate of 30 %). Revenues less expenses from this project (before taxes and excluding depreciation) are expected to be \$3 million per year for 6 years. The project requires an immediate \$200,000 increase in Net Working Capital. The new project falls within Magnum's main line of business (manufacturing car parts) and is no more or less risky than the overall firm. Magnum issued 100,000 15- year 10% semi-annual coupon bonds 6 years ago, with a face value of \$1,000. Magnum's bonds are currently

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traded at par. Magnum has 10,000,000 shares of stock outstanding and the current stock price is \$9. The beta of Magnum common stock is 1.2. The standard deviation of TSE 300 returns is 18%, the risk premium on the market portfolio is 8%, and the T-bill rate equals 5%. The effective marginal corporate tax rate is 35%.

- What is Magnum's cost of equity?
- What is Magnum's WACC?
- Calculate the NPV for this investment. Should Magnum implement this project?

5. Cross-Over Rate: (Summer 1, 2011)

A company is considering two separate, mutually exclusive projects A and B. Project A requires an initial investment of \$100,000 and is expected to generate after-tax cash flows of \$15,000 per year forever. Project B requires an initial investment of \$150,000 and is expected to generate after-tax cash flows of \$18,000 per year forever. The appropriate discount rate is 10 percent.

What is the crossover rate for projects A and B?

- 5.00%
- 6.00%
- 9.00%
- 10.00%
- None of the above.

6. Risk and Return: (Fall 2008)

Diane has \$2,500 to invest. The expected return on the market portfolio is 11 percent with a standard deviation of 15 percent. What are the expected return and standard deviation for the portfolio if Diane borrows an additional \$1,000 at the risk free rate of 4 percent and invests everything in the market portfolio?

- Expected return = 19.40%; standard deviation = 15.40%
- Expected return = 15.40%; standard deviation = 19.40%
- Expected return = 13.80%; standard deviation = 21.00%
- Expected return = 21.00%; standard deviation = 13.80%

7. Risk and Return: (Winter 2014)

A particular asset has a beta of 1.2 and an expected return of 10%. The expected return on the market portfolio is 13% and the risk-free is 5%. Which of the following statement is correct?

- This asset is correctly priced according to the CAPM because its returns lie on the SML.
- This asset is underpriced according to the CAPM because its returns lie above the SML.
- This asset is overpriced according to the CAPM because its returns lie above the SML.
- This asset is overpriced according to the CAPM because its returns lie below the SML.
- This asset is underpriced according to the CAPM because its returns lie below the SML.

8. Risk and Return: (Summer 2, 2013)

Suppose you hold a diversified portfolio consisting of a \$10,000 investment in each of 12 different common stocks. The portfolio's beta is 1.25. Now suppose you decided to sell one of your stocks that has a beta of 1.00 and to use the proceeds to buy a replacement stock with a beta of 1.34. What would the portfolio's new beta be?

- 1.15
- 1.21
- 1.28
- 1.34

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9. Cross-Over Rate: (Fall 2013)

Project A and Project B are mutually independent. Project A has an IRR of 10 percent. Project B has an IRR of 12 percent. The crossover rate is 7%. Both projects have standard cashflow, (i.e. investment at time zero followed by a series of cash inflows). If the firm's marginal cost of capital is 6 percent, then:

- a. Project A should be accepted and Project B rejected.
- b. Project B should be accepted and Project A rejected.
- c. Both projects should be accepted.
- d. Both projects should be rejected.
- e. Decision should be based on NPV and not IRR. Given the information in this question, it is impossible to make a decision.

10. Cross-Over Rate: (Winter 2014)

A new project with a life of 10 years, costs \$210,000 and is expected to generate annual net cash inflows of \$x each year. The project has a discounted payback period of 10 years. Which of the following statement/s is/are most correct: (Note: RRR stands for the required rate of return for the project)

- A. $NPV_A > 0$, and $PI_A > 1$
- B. $IRR_A > RRR_A$, and Payback period will be less than 10 years
- C. $NPV_A = 0$, and $PI_A = 1$
- D. Both A and B
- E. The answer will depend on the magnitude of "x".

11. Bond Sensitivity (Fall 2012)

Which bond's price would be the least sensitive to an unexpected change in the interest rate? (Assume all the bonds have the same YTM)

- A. A discount (or zero coupon) bond with 12 years to maturity
- B. A discount (or zero coupon) bond with 8 years to maturity
- C. A bond with a 10% coupon rate and 8 years to maturity
- D. A bond with a 5% coupon rate and 8 years to maturity
- E. A bond with 5% coupon rate and 10 years to maturity.

12. CAPM (Fall 2012)

In a portfolio of three different stocks, which of the following could not be true? Assume that the portfolio weight of each stock is less than 1.

- A. The riskiness of the portfolio is less than the riskiness of each of the stocks if they were held in isolation.
- B. The riskiness of the portfolio is greater than the riskiness of one or two of the stocks.
- C. The beta of the portfolio is less than the beta of each of the individual stocks.
- D. The beta of the portfolio is greater than the beta of one or two of the individual stock's betas.
- E. None of the above (That is, they all could be true, but not necessarily at the same time).