

YOU HAVE 75 MINUTES TO COMPLETE BOTH PARTS OF THIS EXAM

Instructions:

- 1) The part of the exam is closed book and closed notes. No scrap paper is allowed; use the back of the exam if necessary.
- 2) Partial points are based on readily observable evidence that you know at least part of the solution concept. The more evidence presented (and the clearer the evidence), the better the chance for partial points. In other words, **SHOW ALL WORK!**
- 3) If you have additional time remaining, give your work one last check.
- 4) True/False questions are worth 2 points. Multiple-choice questions are worth 3 points. Short answer/Fill in the Blanks questions usually take less than three sentences and are worth 4 points.

1. This class often uses the term "cost of debt" when discussing bond valuation. For a bond trading at a discount with semi-annual coupon payments, the "cost of debt" is closest to:

- A
- a. the bond's nominal rate.
 - b. the bond's effective rate.
 - c. the bond's current yield.
 - d. the bond's coupon rate.
 - e. none of the above.

2. Common stock represents the residual ownership interest in a firm thus common stockholders are the last to get paid in the event of a bankruptcy.

- A
- a. True
 - b. False

3. Claims of preferred stock holders are junior to claims of debt holders, but senior to those of common stock holders. If a firm fails to pay preferred stock dividends, the preferred stockholders cannot force a firm into bankruptcy.

- A
- a. True
 - b. False

4. The required return on a project is determined by:

- C
- a. the riskless return, the project beta and the company's debt.
 - b. the project beta, the company's equity and the return on the market portfolio.
 - c. the riskless return, the project beta, and the return on the market portfolio.
 - d. the riskless return, the market return, and the company's equity.
 - e. None of the above.

5. Which of the following statements is false?

- BO
- a. Operating leverage is usually measured above the EBIT line on the income statement.
 - b. Financial leverage is less controllable than operating leverage.
 - c. Value increases when the risk of a project decreases.
 - d. Financial leverage can be attributable to the presence of fixed costs.
 - e. A firm's WACC is the required return on an average risk project.

6. A company has a capital structure which consists of 50 percent debt and 50 percent equity. Which of the following statements is most correct?

- A
- a. The cost of equity financing is greater than or equal to the cost of debt financing.
 - b. The WACC exceeds the cost of equity financing.
 - c. The WACC is calculated on a before-tax basis.
 - d. The WACC represents the cost of capital based on historical averages. In that sense, it does not represent the marginal cost of capital.
 - e. As a firm increases its weight of debt (i.e. becomes more levered), we generally expect the beta of the firm to decrease.

7. Briefly list the major conclusions of the perfect capital markets theory of capital structure?

CS is Irrelevant

Risk of Firm is function of operating Risk

Same Real Answer

A
B

8. The cost of common stock is the rate of return stockholder's require on the firm's common stock.

- a. True
- b. False

9. If two bonds have similar terms (coupon, maturity, etc) except the rating differ, the bond with the AAA bond will have the higher yield to maturity than a BBB bond.

- a. True
- b. False

10. (4 points) Match the term with the date:

- | | | |
|------------------|----------|----------------------|
| Record Date | <u>B</u> | a. February 28, 2008 |
| Payment Date | <u>C</u> | b. March 15, 2008 |
| Ex-Dividend Date | <u>B</u> | c. April 1, 2008 |
| Declaration Date | <u>A</u> | d. March 18, 2008 |

11. What are the three components/decisions in creating the dividend policy for a firm?

- a. L.R. payout ratio
- b. How much this gtr/year
- c. From where we get the money

12. In the pecking order view of capital structure, issuing hybrid securities with large proportions of equity are preferred to issuing hybrid securities with low proportions of equity.

- a. True
- b. False

Debt is good Equity is bad

13. Historically which of the following BEST describes the correct order of returns? (lowest to highest)? Assume the corporate bonds, preferred stock and common stock is for a single (the same) company.

- a. T-bonds, Corporate bonds, Preferred Stocks, Common Stocks
- b. T-bonds, Corporate Bonds, Common Stocks, Preferred Stocks
- c. Corporate Bonds, T-bonds, Common Stocks, Preferred Stocks
- d. Preferred Stocks, T-bonds, Corporate bonds, Common Stocks
- e. Common Stocks, Preferred Stocks, Corporate Bonds, T-bonds

14. What is the optimal capital structure? Why?

Mix of debt + equity that minimizes WACC as this maximize firm value stock price

15. What is the optimal dividend policy? Why?

Like residual, as it implies optimal CR, CS, and send no fake signals to market

B
A

YOUR NAME

Key

EXAM 2 FINC 4531

FALL 2008

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1. (10 points) Rolling Corporation is constructing its Cost of Capital schedule. The firm is at its target capital structure. Its bonds have an 8.5 percent coupon, paid semiannually, a current maturity of 9 years, and sell for \$1051.30. Rolling's beta is 1.3, the risk-free rate is 4.5 %, and the market risk premium is 6.8 %. Rolling is a constant growth firm, which just paid a dividend of \$1.10, sells for \$20.00 per share, and has a growth rate of 5 %. The firm's tax rate is 40%.

The firm's book value balance sheet is as follows:

Asset	\$25,800	Long Term Debt	\$31,000
		Equity (\$.50 par)	\$1,700
		Retained Earnings	-\$6,900

a. What is the firm's leverage ratio?

$$\frac{31 \times 1051.30}{(31 \times 1051.30) + \left(\frac{1700}{.5} \times 20\right)} = \frac{32590}{32590 + 68000} = 32.4\%$$

b. What is the yield to maturity on Rolling's bonds?

$$PV = 1051.30 - 1051.30 \quad n = 9 \times 2 = 18 \quad I = 385 \times 2 = 7.7\%$$

c. What is Rolling' cost of retained earnings using the Discounted Cash Flow/Constant Growth approach?

$$r_s = \frac{1.10(1.05)}{20} + 5\% = 10.775\%$$

d. What is Rolling' cost of retained earnings using the Capital Asset Pricing Model approach?

$$r_s = 4.5 + 1.3(6.8) = 13.34\%$$

e. Using your DCF estimate of the cost of retained earnings, what is Rolling' WACC?

$$(32.4\%)(7.7\%(1-40\%)) + (100\% - 32.4\%)(10.775\%) = 8.78\% \approx 8.8\%$$

2. (8 points) In 2008, the Lissa Company paid dividends of \$10,000,000 on after-tax income (cash flow) of \$25,000,000. Capital budget projects totaled \$25,000,000 in 2008. 2008 was a normal year for earnings, dividends, and capital budgets. For the past 12 years, earnings have grown at a constant rate of 8%. However, in 2009, earnings are expected to fall to \$20,000,000 and the firm expects to have profitable investment opportunities will grow to 18,000,000. It is predicted that Lissa will not maintain the 2009 level of earnings growth, and the company will return to the 2008 earnings (\$25,000,000) and growth rate (8%) in 2010. Lissa's target market value leverage ratio is 50% and it is at the target.

a. Calculate Lissa's total dividends for 2008 if its dividend payment is set to force dividends to grow at the long-run growth rate in earnings.

$$10 \times 1.08 = \$10,800,000$$

b. Calculate Lissa's total dividends for 2008 if it continues its 2008 dividend payout ratio.

$$\frac{D_1}{E_1} = \frac{10}{25} \Rightarrow \frac{10}{25} \times 20 = D_1 = \$8,000,000$$

c. Calculate Lissa's total dividends for 2008 if it uses a pure residual dividend.

$$NI = D_{10} = \text{Equity} \text{ part of CB} \Rightarrow 20 = D_{10} = 18 \times 5 = D_{10} = 11$$

d. Choosing only among a, b, and c, What is Lissa's optimal dividend policy? Why?

L.R. residual is optimal. Lissa has been paying close to optimal and next year returns to normal. Thus should continue current pattern. A

3. (3 points) Assume that BIM is selling for \$180 per share. BIM implements a 6% stock dividend, and no other change in the value of the firm occurs. What is the value of one share after the stock dividend?

$$\frac{180}{1.06} = \$169.81$$

4. (4 points) Find the fair value of a bond with a remaining life of 12 years, and a coupon rate of 9% per year paid semi-annually. Assume that the required rate of return on the bond is 6% per year.

$PV = 1259.03$ $FV = 1000$ $L = 6/2 = 3$
 $N = 12 \times 2 = 24$ $PMT = 90/2 = 45$

5. (4 points) The just paid per-share annual dividend on a common stock just is \$3.00. Stock holders require a 12% rate of return. Find the fair value of the stock for the cases where dividends grow at 25% for 4 years, and then at 5% per year forever.

$3.75 \quad 4.69 \quad 5.86 \quad 7.32 \quad 7.69$ $\frac{7.69}{12} = 109.86$ NPV $12,035.467$
 85.73 586 $7.32 + 11.78$

6. (Point values are as listed) Use the following information for the next several questions. Consider a world of perfect capital markets. This world has no corporate or personal taxes, all investors have homogeneous expectations, no bankruptcy costs, and M&M's no-tax theory of capital structure is true.

Company Y is financed has the following market value balance sheet:

Assets = \$335 Liabilities = \$91
Equity = \$244

The firm had \$31.95 in EBIT last year. The firm has 50 shares outstanding. The firm expects this same return for the foreseeable future. The firm is a zero growth firm, which pays out all excess earnings as dividends. Any time the firm changes its capital structure, it changes only the debt/equity mix and does not change its total assets. The firm's liabilities consist entirely of perpetual debt. The firm's debt is risk-less, perpetual, selling at par, and has a 4.5% yield. If the firm were to change its capital structure, new debt would still have a 4.5% yield. The expected return on the market portfolio is 10%. Given this information, answer the following questions:

a. (2 points) What is the firm's return on equity?

$$\frac{27.85}{244} = 11.42\%$$

b. (2 points) What is the firm's current weighted average cost of capital.

$$\frac{31.95}{335} = 9.54\% \quad \& \quad \frac{91}{335} \times 4.5 + \frac{244}{335} \times 11.42\% = 9.54\%$$

c. (2 points) What is the current price per share?

$$\frac{244}{50} = 4.88$$

d. (2 points) What is the beta of the firm's levered equity?

$$11.4 = 4.5 + B(10 - 4.5) = 1.258$$

Now assume that the above firm issues enough equity to repurchase all of the firm's debt. This change in capital structure reveals no new information about future firm prospects.

e. (2 points) What is the overall firm's new return on equity?

since WACC does not change by then + firm is all equity

f. (2 points) What is the firm's new unlevered equity beta?

$$9.54 = 4.5 + B(10 - 4.5)$$

$$B = 1.916$$

$$\frac{31.95}{4.10} = 27.85$$

$$\frac{31.95}{335}$$