CHAPTER 13
CAPITAL STRUCTURE AND LEVERAGE

(Difficulty: E = Easy, M = Medium, and T = Tough)

Multiple Choice: Conceptual

Easy:

Business risk **Answer: c Diff: E**

1. A decrease in the debt ratio will generally have no effect on ________________________________ ___.

   a. Financial risk.
   b. Total risk.
   c. Business risk.
   d. Market risk.
   e. None of the above is correct. (It will affect each type of risk above.)

Business risk **Answer: d Diff: E**

2. Business risk is concerned with the operations of the firm. Which of the following is not associated with (or not a part of) business risk?

   a. Demand variability.
   b. Sales price variability.
   c. The extent to which operating costs are fixed.
   d. Changes in required returns due to financing decisions.
   e. The ability to change prices as costs change.

Business risk **Answer: d Diff: E N**

3. Which of the following factors would affect a company's business risk?

   a. The level of uncertainty regarding the demand for its product.
   b. The degree of operating leverage.
   c. The amount of debt in its capital structure.
   d. Statements a and b are correct.
   e. All of the statements above are correct.

Business and financial risk **Answer: d Diff: E**

4. Which of the following statements is most correct?

   a. A firm's business risk is solely determined by the financial characteristics of its industry.
   b. The factors that affect a firm's business risk are determined partly by industry characteristics and partly by economic conditions. Unfortunately, these and other factors that affect a firm's business risk are not subject to any degree of managerial control.
   c. One of the benefits to a firm of being at or near its target capital structure is that financial flexibility becomes much less important.
   d. The firm's financial risk may have both market risk and diversifiable risk components.
   e. None of the statements above is correct.

Optimal capital structure **Answer: e Diff: E**

5. Which of the following statements is most correct?

a. As a rule, the optimal capital structure is found by determining the debt-equity mix that maximizes expected EPS.
b. The optimal capital structure simultaneously maximizes EPS and minimizes the WACC.
c. The optimal capital structure minimizes the cost of equity, which is a necessary condition for maximizing the stock price.
d. The optimal capital structure simultaneously minimizes the cost of debt, the cost of equity, and the WACC.
e. None of the statements above is correct.

Optimal capital structure **Answer: c Diff: E**

6. From the information below, select the optimal capital structure for Minnow Entertainment Company.

a. Debt = 40%; Equity = 60%; EPS = $2.95; Stock price = $26.50.
b. Debt = 50%; Equity = 50%; EPS = $3.05; Stock price = $28.90.
c. Debt = 60%; Equity = 40%; EPS = $3.18; Stock price = $31.20.
d. Debt = 80%; Equity = 20%; EPS = $3.42; Stock price = $30.40.
e. Debt = 70%; Equity = 30%; EPS = $3.31; Stock price = $30.00.

Optimal capital structure **Answer: e Diff: E**

7. Which of the following statements best describes the optimal capital structure?

a. The optimal capital structure is the mix of debt, equity, and preferred stock that maximizes the company's earnings per share (EPS).
b. The optimal capital structure is the mix of debt, equity, and preferred stock that maximizes the company's stock price.
c. The optimal capital structure is the mix of debt, equity, and preferred stock that minimizes the company's weighted average cost of capital (WACC).
d. Statements a and b are correct.
e. Statements b and c are correct.

Target capital structure **Answer: e Diff: E**

8. The firm's target capital structure is consistent with which of the following?

a. Maximum earnings per share (EPS).
b. Minimum cost of debt (k_d).
c. Minimum risk.
d. Minimum cost of equity (k_s).
e. Minimum weighted average cost of capital (WACC).

Leverage and capital structure **Answer: d Diff: E**

9. Which of the following is likely to encourage a company to use more debt in its capital structure?

a. An increase in the corporate tax rate.
b. An increase in the personal tax rate.
c. A decrease in the company's degree of operating leverage.
d. Statements a and c are correct.
e. All of the statements above are correct.

Leverage and capital structure **Answer: e Diff: E**

10. Which of the following statements is most correct?

a. A reduction in the corporate tax rate is likely to increase the debt ratio of the average corporation.
b. An increase in the personal tax rate is likely to increase the debt ratio of the average corporation.
c. If changes in the bankruptcy code make bankruptcy less costly to corporations, then this would likely reduce the debt ratio of the average corporation.
d. All of the statements above are correct.
e. None of the statements above is correct.

Leverage and capital structure **Answer: e Diff: E**

11. Which of the following statements is likely to encourage a firm to increase its debt ratio in its capital structure?

a. Its sales become less stable over time.
b. Its corporate tax rate declines.
c. Management believes that the firm's stock is overvalued.
d. Statements a and b are correct.
e. None of the statements above is correct.

Leverage and capital structure **Answer: a Diff: E**

12. Which of the following factors is likely to encourage a corporation to increase the proportion of debt in its capital structure?

a. An increase in the corporate tax rate.
b. An increase in the personal tax rate.
c. An increase in the company's degree of operating leverage.
d. The company's assets become less liquid.
e. An increase in expected bankruptcy costs.

Leverage and capital structure **Answer: e Diff: E**

13. Which of the following would increase the likelihood that a company would increase its debt ratio in its capital structure?

a. An increase in costs incurred when filing for bankruptcy.
b. An increase in the corporate tax rate.
c. An increase in the personal tax rate.
d. A decrease in the firm's business risk.
e. Statements b and d are correct.

Leverage and capital structure **Answer: a Diff: E N**

14. Which of the following factors is likely to encourage a company to increase its debt ratio?

a. An increase in the corporate tax rate.
b. An increase in the personal tax rate.
c. Its assets become less liquid.
d. Both statements a and c are correct.
e. All of the statements above are correct.

Leverage and capital structure **Answer: c Diff: E N**

15. Jones Co. currently is 100 percent equity financed. The company is considering changing its capital structure. More specifically, Jones' CFO is considering a recapitalization plan in which the firm would issue long-term debt with a yield of 9 percent and use the proceeds to repurchase common stock. The recapitalization would not change the company's

total assets nor would it affect the company's basic earning power, which is currently 15 percent. The CFO estimates that the recapitalization will reduce the company's WACC and increase its stock price. Which of the following is also likely to occur if the company goes ahead with the planned recapitalization?

a. The company's net income will increase.
b. The company's earnings per share will decrease.
c. The company's cost of equity will increase.
d. The company's ROA will increase.
e. The company's ROE will decrease.

Leverage and capital structure **Answer: e Diff: E N**

16. Which of the following statements is most correct?

a. When a company increases its debt ratio, the costs of both equity and debt capital increase. Therefore, the weighted average cost of capital (WACC) must also increase.
b. The capital structure that maximizes stock price is generally the capital structure that also maximizes earnings per share.
c. Since debt financing is cheaper than equity financing, increasing a company's debt ratio will always reduce the company's WACC.
d. The capital structure that maximizes stock price is generally the capital structure that also maximizes the company's WACC.
e. None of the statements above is correct.

Leverage and capital structure **Answer: c Diff: E**

17. Which of the following statements is most correct?

a. When a company increases its debt ratio, the costs of equity and debt capital both increase. Therefore, the weighted average cost of capital (WACC) must also increase.
b. The capital structure that maximizes stock price is generally the capital structure that also maximizes earnings per share.
c. All else equal, an increase in the corporate tax rate would tend to encourage a company to increase its debt ratio.
d. Statements a and b are correct.
e. Statements a and c are correct.

Capital structure and WACC **Answer: e Diff: E**

18. Which of the following statements is most correct?

a. Since debt financing raises the firm's financial risk, increasing a company's debt ratio will always increase the company's WACC.
b. Since debt financing is cheaper than equity financing, increasing a company's debt ratio will always reduce the company's WACC.
c. Increasing a company's debt ratio will typically reduce the marginal costs of both debt and equity financing; however, it still may raise the company's WACC.
d. Statements a and c are correct.
e. None of the statements above is correct.

Capital structure, ROA, and ROE **Answer: d Diff: E**

19. Ridgefield Enterprises has total assets of $300 million. The company currently has no debt in its capital structure. The company's basic earning power is 15 percent. The company is contemplating a recapitalization where it will issue debt at 10 percent and use the proceeds to buy back shares of the company's common stock. If the company proceeds with

the recapitali-zation its operating income, total assets, and tax rate will remain the same. Which of the following will occur as a result of the recapitalization?

a. The company's ROA will decline.
b. The company's ROE will increase.
c. The company's basic earning power will decline.
d. Statements a and b are correct.
e. All of the statements above are correct.

Capital structure, WACC, TIE, and EPS **Answer: a Diff: E**

20. Which of the following statements is most correct?

a. The capital structure that maximizes stock price is also the capital structure that minimizes the weighted average cost of capital (WACC).
b. The capital structure that maximizes stock price is also the capital structure that maximizes earnings per share.
c. The capital structure that maximizes stock price is also the capital structure that maximizes the firm's times interest earned (TIE) ratio.
d. Statements a and b are correct.
e. Statements b and c are correct.

Capital structure theory **Answer: d Diff: E**

21. Which of the following statements about capital structure theory is most correct?

a. Signaling theory suggests firms should in normal times maintain reserve borrowing capacity that can be used if an especially good investment opportunity comes along.
b. In general, an increase in the corporate tax rate would cause firms to use less debt in their capital structures.
c. According to the "trade-off theory," an increase in the costs of bankruptcy would lead firms to reduce the amount of debt in their capital structures.
d. Statements a and c are correct.
e. All of the statements above are correct.

Miscellaneous capital structure concepts **Answer: c Diff: E N**

22. Which of the following statements is most correct?

a. If Congress were to pass legislation that increases the personal tax rate, but decreases the corporate tax rate, this would encourage companies to increase their debt ratios.
b. If a company were to issue debt and use the money to repurchase common stock, this action would have no impact on the company's return on assets. (Assume that the repurchase has no impact on the company's operating income.)
c. If a company were to issue debt and use the money to increase assets, this action would increase the company's return on equity. (Assume that the company's return on assets remains unchanged.)
d. Statements a and b are correct.
e. Statements b and c are correct.

Financial leverage and EPS **Answer: a Diff: E**

23. Volga Publishing is considering a proposed increase in its debt ratio, which will also increase the company's interest expense. The plan would involve the company issuing new bonds and using the proceeds to buy back shares of its common stock. The company's CFO expects that the plan will not change the company's total assets or operating income. How-ever, the company's CFO does estimate that it will increase the company's earnings per share (EPS). Assuming the CFO's estimates are correct, which of the following statements is most correct?

a. Since the proposed plan increases Volga's financial risk, the company's stock price still might fall even though its EPS is expected to increase.
b. If the plan reduces the company's WACC, the company's stock price is also likely to decline.
c. Since the plan is expected to increase EPS, this implies that net income is also expected to increase.
d. Statements a and b are correct.
e. Statements a and c are correct.

Financial leverage and EPS **Answer: c Diff: E**

24. Which of the following statements is most correct?

a. Increasing financial leverage is one way to increase a firm's basic earning power (BEP).
b. Firms with lower fixed costs tend to have greater operating leverage.
c. The debt ratio that maximizes EPS generally exceeds the debt ratio that maximizes share price.
d. Statements a and b are correct.
e. Statements a and c are correct.

Financial leverage and ratios **Answer: d Diff: E**

25. Company A and Company B have the same tax rate, the same total assets, and the same basic earning power. Both companies have a basic earning power that exceeds their before-tax costs of debt, k_d. However, Company A has a higher debt ratio and higher interest expense than Company B. Which of the following statements is most correct?

a. Company A has a lower net income than B.
b. Company A has a lower ROA than B.
c. Company A has a lower ROE than B.
d. Statements a and b are correct.
e. None of the statements above is correct.

Financial leverage and ratios **Answer: b Diff: E**

26. Firm U and Firm L each have the same total assets. Both firms also have a basic earning power of 20 percent. Firm U is 100 percent equity financed, while Firm L is financed with 50 percent debt and 50 percent equity. Firm L's debt has a before-tax cost of 8 percent. Both firms have positive net income. Which of the following statements is most correct?

a. The two companies have the same times interest earned (TIE) ratio.
b. Firm L has a lower ROA than Firm U.
c. Firm L has a lower ROE than Firm U.
d. Statements a and b are correct.
e. Statements b and c are correct.

Medium:

Optimal capital structure **Answer: d Diff: M**

27. As a general rule, the capital structure that

a. Maximizes expected EPS also maximizes the price per share of common stock.
b. Minimizes the interest rate on debt also maximizes the expected EPS.
c. Minimizes the required rate on equity also maximizes the stock price.
d. Maximizes the price per share of common stock also minimizes the weighted average cost of capital.
e. None of the statements above is correct.

Operating and financial leverage **Answer: e Diff: M**

28. Which of the following statements is most correct?

a. Firms whose sales are very sensitive to changes in the business cycle are more likely to rely on debt financing.
b. Firms with large tax loss carry forwards are more likely to rely on debt financing.
c. Firms with a high operating leverage are more likely to rely on debt financing.
d. Statements a and c are correct.
e. None of the statements above is correct.

Financial leverage and ratios **Answer: c Diff: M**

29. Company A and Company B have the same total assets, operating income (EBIT), tax rate, and business risk. Company A, however, has a much higher debt ratio than Company B. Company A's basic earning power (BEP) exceeds its cost of debt financing (k_d). Which of the following statements is most correct?

a. Company A has a higher return on assets (ROA) than Company B.
b. Company A has a higher times interest earned (TIE) ratio than Company B.
c. Company A has a higher return on equity (ROE) than Company B, and its risk, as measured by the standard deviation of ROE, is also higher than Company B's.
d. Statements b and c are correct.
e. All of the statements above are correct.

Limits of leverage **Answer: d Diff: M**

30. Which of the following are practical difficulties associated with capital structure and degree of leverage analyses?

a. It is nearly impossible to determine exactly how P/E ratios or equity capitalization rates (k_s values) are affected by different degrees of financial leverage.
b. Managers' attitudes toward risk differ and some managers may set a target capital structure other than the one that would maximize stock price.
c. Managers often have a responsibility to provide continuous service; they must preserve the long-run viability of the enterprise. Thus, the goal of employing leverage to maximize short-run stock price and minimize capital cost may conflict with long-run viability.
d. All of the statements above are correct.
e. None of the statements above represents a serious impediment to the practical application of leverage analysis in capital structure determination.

Signaling theory **Answer: b Diff: M**

31. If you know that your firm is facing relatively poor prospects but needs new capital, and you know that investors do not have this information, signaling theory would predict that you would

a. Issue debt to maintain the returns of equity holders.
b. Issue equity to share the burden of decreased equity returns between old and new shareholders.
c. Be indifferent between issuing debt and equity.
d. Postpone going into capital markets until your firm's prospects improve.
e. Convey your inside information to investors using the media to eliminate the information asymmetry.

Capital structure and WACC **Answer: d Diff: M**

32. Which of the following statements is most correct?

a. The optimal capital structure minimizes the WACC.
b. If the after-tax cost of equity financing exceeds the after-tax cost of debt financing, firms are always able to reduce their WACC by increasing the amount of debt in their capital structure.

c. Increasing the amount of debt in a firm's capital structure is likely to increase the costs of both debt and equity financing.
d. Statements a and c are correct.
e. Statements b and c are correct.

Capital structure and WACC **Answer: b Diff: M**

33. Which of the following statements is most correct?

a. A firm can use retained earnings without paying a flotation cost. Therefore, while the cost of retained earnings is not zero, the cost of retained earnings is generally lower than the after-tax cost of debt financing.
b. The capital structure that minimizes the firm's weighted average cost of capital is also the capital structure that maximizes the firm's stock price.
c. The capital structure that minimizes the firm's weighted average cost of capital is also the capital structure that maximizes the firm's earnings per share.
d. If a firm finds that the cost of debt financing is currently less than the cost of equity financing, an increase in its debt ratio will always reduce its weighted average cost of capital.
e. Statements a and b are correct.

Miscellaneous capital structure concepts **Answer: a Diff: M**

34. Which of the following statements is most correct?

a. In general, a firm with low operating leverage has a small proportion of its total costs in the form of fixed costs.
b. An increase in the personal tax rate would not affect firms' capital structure decisions.
c. A firm with high business risk is more likely to increase its use of financial leverage than a firm with low business risk, assuming all else equal.
d. Statements a and b are correct.
e. All of the statements above are correct.

Miscellaneous capital structure concepts **Answer: c Diff: M**

35. Which of the following statements is correct?

a. "Business risk" is differentiated from "financial risk" by the fact that financial risk reflects only the use of debt, while business risk reflects both the use of debt and such factors as sales variability, cost variability, and operating leverage.
b. If corporate tax rates were decreased while other things were held constant, and if the Modigliani-Miller tax-adjusted tradeoff theory of capital structure were correct, this would tend to cause corporations to increase their use of debt.
c. If corporate tax rates were decreased while other things were held constant, and if the Modigliani-Miller tax-adjusted tradeoff theory of capital structure were correct, this would tend to cause corporations to decrease their use of debt.
d. The optimal capital structure is the one that simultaneously (1) maximizes the price of the firm's stock, (2) minimizes its WACC, and (3) maximizes its EPS.
e. None of the statements above is correct.

Tough:

Variations in capital structures **Answer: d Diff: T**

36. Which of the following is correct?

a. Generally, debt to total assets ratios do not vary much among different industries although they do vary for firms

within a particular industry.
b. Utilities generally have very high common equity ratios due to their need for vast amounts of equity-supported capital.
c. The drug industry has a high debt to common equity ratio because their earnings are very stable and thus, can support the large interest costs associated with higher debt levels.
d. Wide variations in capital structures exist between industries and also between individual firms within industries and are influenced by unique firm factors including managerial attitudes.
e. Since most stocks sell at or around their book values, using accounting values provides an accurate picture of a firm's capital structure.

Web Appendix 13A

Multiple Choice: Conceptual

Easy:

DOL, DFL, and DTL **Answer: c Diff: E**

13A-37. Which of the following statements is most correct?

a. An increase in fixed costs, (holding sales and variable costs constant) will reduce the company's degree of operating leverage.
b. An increase in interest expense will reduce the company's degree of financial leverage.
c. If the company has no debt outstanding, then its degree of total leverage equals its degree of operating leverage.
d. Answers a and b are correct.
e. Answers b and c are correct.

Medium:

Financial leverage **Answer: e Diff: M**

13A-38. The use of financial leverage by the firm has a potential impact on which of the following?

(1) The risk associated with the firm.
(2) The return experienced by the shareholder.
(3) The variability of net income.
(4) The degree of operating leverage.
(5) The degree of financial leverage.

a. 1, 3, 5
b. 1, 2, 5
c. 2, 3, 5
d. 2, 3, 4, 5
e. 1, 2, 3, 5

Financial leverage **Answer: d Diff: M**

13A-39. If a firm uses debt financing (Debt ratio = 0.40) and sales change from the current level, which of the following statements is most correct?

a. The percentage change in net operating income (EBIT) resulting from the change in sales will exceed the percentage change in net income (NI).

b. The percentage change in EBIT will equal the percentage change in net income.
c. The percentage change in net income relative to the percentage change in sales (and in EBIT) will not depend on the interest rate paid on the debt.
d. The percentage change in net operating income will be less than the percentage change in net income.
e. Since debt is used, the degree of operating leverage must be greater than 1.

Financial risk **Answer: b Diff: M**

13A-40. Which of the following statements is most correct?

a. Suppose Company A's EPS is expected to experience a larger percentage change in response to a given percentage change in sales than Company B's EPS. Other things held constant, Company A would appear to have more business risk than Company B.
b. Statement a would be correct if the term "EBIT" were substituted for "EPS."
c. Statement a would be correct if the term "EBIT" were substituted for "sales."
d. Statement a would be correct if the words "financial risk" were substituted for "business risk."
e. The statements above are false.

Operating and financial leverage **Answer: a Diff: M**

13A-41. Which of the following statements is most correct?

a. The degree of operating leverage (DOL) depends on a company's fixed costs, variable costs, and sales. The DOL formula assumes (1) that fixed costs are constant and (2) that variable costs are a constant proportion of sales.
b. The degree of total leverage (DTL) is equal to the DOL plus the degree of financial leverage (DFL).
c. Arithmetically, financial leverage and operating leverage offset one another so as to keep the degree of total leverage constant. Therefore, the formula shows that the greater the degree of financial leverage, the smaller the degree of operating leverage.
d. The statements above are true.
e. The statements above are false.

Operating and financial leverage **Answer: e Diff: M**

13A-42. Which of the following statements is most correct?

a. All else being equal, an increase in a firm's fixed costs will increase its degree of operating leverage.
b. Firms that have large fixed costs and low variable costs have a higher degree of financial leverage than do firms with low fixed costs and high variable costs.
c. If a firm's net income rises 10 percent every time its EBIT rises 10 percent, this implies the firm has no debt outstanding.
d. None of the statements above is correct.
e. Answers a and c are correct.

DOL **Answer: c Diff: M**

13A-43. The degree of operating leverage has which of the following characteristics?

a. The closer the firm is operating to breakeven quantity, the smaller the DOL.
b. A change in quantity demanded will produce the same percentage change in EBIT as an identical change in price per unit of output, other things held constant.
c. The DOL is not a fixed number for a given firm, but will depend upon the time zero values of the economic variables Q (Quantity), P (Price), and V (Volume).

d. The DOL relates the change in net income to the change in net operating income.
e. If the firm has no debt, the DOL will equal 1.

Debt ratio and DOL **Answer: a Diff: M**

13A-44. Company D has a 50 percent debt ratio, whereas Company E has no debt financing. The two companies have the same level of sales, and the same degree of operating leverage. Which of the following statements is most correct?

a. If sales increase 10 percent for both companies, then Company D will have a larger percentage increase in its net income.
b. If sales increase 10 percent for both companies, then Company D will have a larger percentage increase in its operating income (EBIT).
c. If EBIT increases 10 percent for both companies, then Company D's net income will rise by more than 10 percent, while Company E's net income will rise by less than 10 percent.
d. Answers a and c are correct.
e. None of the answers above is correct.

Degree of leverage **Answer: a Diff: M**

13A-45. Which of the following is a key benefit of using the degree of leverage concept in financial analysis?

a. It allows decision makers a relatively clear assessment of the consequences of alternative actions.
b. It establishes the optimal capital structure for the firm.
c. It shows how a given change in leverage will affect sales.
d. All of the statements above.
e. Only statements a and c above are correct.

ANSWERS AND SOLUTIONS

1. Business risk **Answer: c Diff: E**

2. Business risk **Answer: d Diff: E**

3. Business risk **Answer: d Diff: E N**

The correct answer is statement d. Statements a and b are correct. Both relate directly to the business side of the firm. Statement c, on the other hand, is related to the financial risk of the firm. Since statements a and b are correct, statement d is the correct choice.

4. Business and financial risk **Answer: d Diff: E**

5. Optimal capital structure **Answer: e Diff: E**

The optimal capital structure maximizes the firm's stock price and minimizes the firm's WACC.

6. Optimal capital structure **Answer: c Diff: E**

7. Optimal capital structure **Answer: e Diff: E**

8. Target capital structure **Answer: e Diff: E**

9. Leverage and capital structure **Answer: d Diff: E**

Both an increase in the corporate tax rate and a decrease in the company's degree of operating leverage will encourage the firm to use more debt in its capital structure. Therefore, the correct choice is statement d.

10. Leverage and capital structure **Answer: e Diff: E**

Statement e is the correct choice. Lowering the corporate tax rate reduces the tax advantages of debt leading firms to use less debt financing. If the personal tax rate were to increase, individuals would now find interest received on corporate debt less attractive, causing firms to utilize less debt financing. An increase in the costs of bankruptcy would lead firms to use less debt in order to reduce the probability of having to incur these higher costs.

11. Leverage and capital structure **Answer: e Diff: E**

Statement e is correct. Less stable sales would lead a firm to reduce its debt ratio. A lower corporate tax rate reduces the tax advantage of the deductibility of interest expense. This reduction in the tax shield provided by debt would encourage less use of debt. If management believes the firm's stock is overvalued, then it would want to issue equity rather than debt, thereby increasing the firm's equity ratio.

12. Leverage and capital structure **Answer: a Diff: E**

Statement a is correct; all the other statements are false. Since interest is tax deductible, it would make sense to increase debt if the corporate tax rate rises. Interest received by individual investors is not tax exempt, so an increase in the personal tax rate would not encourage a firm to increase its debt level in the capital structure. Increasing operating leverage would discourage a company from increasing debt. If a company's assets become less liquid, it would hurt the company's financial position, making it less likely that the firm could make interest payments when necessary. An increase in expected bankruptcy costs would encourage a company to use less debt.

13. Leverage and capital structure **Answer: e Diff: E**

If the costs incurred when filing for bankruptcy increased, firms would be penalized more if they filed for bankruptcy and would be less willing to take that risk. Therefore, they would reduce debt levels to help avoid bankruptcy risk, so statement a is false. An increase in the corporate tax rate would mean that firms would get larger tax breaks for interest payments. Therefore, firms have an incentive to increase interest payments, in order to reduce taxes. Therefore, they will increase their debt ratios, so statement b is true. An increase in the personal tax rate decreases the after-tax return that investors will receive. Firms will have to issue debt at higher interest rates in order to provide investors with the same after-tax returns they used to receive. This will raise firms' costs of debt, which will increase their WACCs, so firms will not increase their debt ratios. Therefore, statement c is false. If a firm's business risk decreases, then this will tend to increase its debt ratio. Therefore, statement d is true. Since both statements b and d are true, the correct choice is statement e.

14. Leverage and capital structure **Answer: a Diff: E N**

The correct answer is statement a. If corporate tax rates increase, then companies get a larger tax advantage from debt in their capital structure, so they will increase their debt ratios. If personal taxes increase, bondholders will pay more taxes and will demand a higher rate of return from companies to compensate them. Therefore, companies will need to pay higher interest rates, which makes debt more expensive. Therefore, an increase in the personal tax rate will not encourage corporations to increase their debt ratios. If their assets become less liquid, companies will have to pay a higher interest rate on their bonds. (Remember, $k = k^* + IP + DRP + MRP + LP$. If assets are less liquid, LP increases.) This makes the debt more expensive and makes companies less likely to increase their debt ratios.

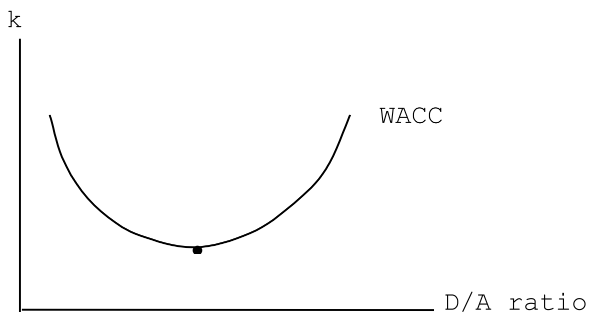
15. Leverage and capital structure **Answer: c Diff: E N**

The correct answer is statement c. The company will have higher debt interest payments, so net income will decline. Thus, statement a is false. The effect on EPS is ambiguous. Earnings decline (NI), but so will the number of shares. Therefore, statement b is false. The firm's recapitalization will not change total assets. However, since net income declines, ROA will decrease; so statement d is false. As long as the BEP ratio is greater than the cost of debt, ROE will increase. However, you don't have enough information to determine the cost of debt, so you can make no determination about ROE. Thus, statement e is false. The increase in debt will increase the risk to shareholders, so the cost of equity will increase. Therefore, statement c is correct.

16. Leverage and capital structure **Answer: e Diff: E N**

The correct answer is statement e. Statement a is incorrect. Typically, the cost of debt rises slower than the cost of equity. Also, the firm is substituting cheaper debt for more expensive equity. At some point, increasing debt will likely lead to an increase in the WACC. But this is not true across all levels of debt. [Think of a firm with no debt: increasing the debt ratio to just 10% will probably lower the WACC]. This also explains why statement c is incorrect. A firm with a high debt ratio (i.e., 90%) will likely increase its WACC by further increasing its debt. Statement b is incorrect. Although EPS is maximized, the total value of the company may be compromised. This contrasts with statement d. The capital structure that maximizes stock price should minimize the WACC. So, statement d is also incorrect.

17. Leverage and capital structure **Answer: c Diff: E**



Statement a is false. The WACC does not necessarily increase. Remember, you are replacing high cost equity with low cost debt. When there is very little debt in the capital structure, the WACC will actually decrease. (See the diagram above.) The capital structure that maximizes stock price is not necessarily the capital structure that maximizes EPS, so statement b is false. If the corporate tax rate increases, companies will obtain a bigger tax advantage for their interest payments. Thus, they may increase their debt levels to take advantage of this situation, and this would raise debt ratios. Therefore, the correct answer is statement c.

18. Capital structure and WACC **Answer: e Diff: E**

Statement a is false; if you are to the left of the firm's optimal capital structure on the WACC curve, increasing a company's debt ratio will actually decrease the firm's WACC. Statement b is false; if you are to the right of the firm's optimal capital structure on the WACC curve, increasing a company's debt ratio will actually increase the firm's WACC. Statement c is false; as you increase the firm's debt ratio the cost of debt will increase because you're using more debt. Because you're using more debt the cost of equity also increases because the firm's financial risk has increased. From statements a and b you can see that whether the WACC is increased depends on where you are on the WACC curve relative to the firm's optimal capital structure. Therefore, the correct answer is statement e.

19. Capital structure, ROA, and ROE **Answer: d Diff: E**

Statements a and b are correct; therefore, statement d is the appropriate choice. ROA = NI/TA. If total assets remain the same, but NI decreases (because of the new interest payment), ROA will decrease. NI will fall, but not as much in comparison to the amount that common equity will fall because BEP > k_d, thus ROE = NI/CE will rise. BEP will remain the same. BEP = EBIT/TA, where TA and EBIT remain the same (which was given in the problem).

20. Capital structure, WACC, TIE, and EPS **Answer: a Diff: E**

Statement a is correct; the other statements are false. The capital structure that maximizes the firm's stock price generally calls for a debt ratio that is lower than the one that maximizes EPS. The firm could maximize its TIE by having no debt (that is zero interest payments). But, this capital structure would probably not maximize the firm's stock price.

21. Capital structure theory **Answer: d Diff: E**

Statements a and c are correct; therefore, statement d is the correct choice. An increase in the corporate tax rate reduces the after-tax cost of debt making it more attractive relative to equity. Thus, firms might be expected to use more debt in their capital structure rather than less debt.

22. Miscellaneous capital structure concepts **Answer: c Diff: E N**

The correct answer is statement c. Statement a is not correct. Just the opposite is true--we would expect companies to use less debt. Statement b is not correct. The additional debt would result in an increase in interest expense and a decrease in net income. Since assets are unchanged, the company's ROA must decrease. Statement c is correct. The additional debt would be used to purchase additional assets. We are told that the ROA stays the same. Therefore, if assets increase, it must mean that net income also increases. There is no change in equity, so the ROE of the firm must increase.

23. Financial leverage and EPS **Answer: a Diff: E**

Statement a is true; a higher EPS does not always mean that the stock price will increase. Statement b is false; a lower WACC will mean a higher stock price. Statement c is false; EPS can increase just because shares outstanding decline. (The firm's net income will decline because its interest expense increases.)

24. Financial leverage and EPS **Answer: c Diff: E**

Statement a is false because BEP = EBIT/Total assets. The extent to which the firm uses debt financing does not affect EBIT or total assets. Statement b is false because firms with a high percentage of fixed costs have a high degree of operating leverage by definition.

25. Financial leverage and ratios **Answer: d Diff: E**

BEP = EBIT/TA. Since they both have the same total assets and the same BEP, then EBIT must be the same for both companies. If A has a higher debt ratio and higher interest expense than B, and they both have the same EBIT and tax rate, then A must have a lower NI than B. Therefore, statement a is true. If A has a lower NI than B but both have the same total assets, then A's ROA (NI/TA) must be lower than B's ROA. Therefore, statement b is true. If both companies have the same total assets but A's debt ratio is higher than B's, then A's equity must be lower (since Total assets = Total debt + Total equity). If A has less equity, and a lower NI than B, it is not possible to judge which company's ROE (NI/EQ) is higher.

26. Financial leverage and ratios **Answer: b Diff: E**

BEP = EBIT/TA. If both firms have the same BEP ratio and same total assets, then they must have the same EBIT. Since Firm U has no debt in its capital structure, Firm U will have higher net income than Firm L because U has no interest expense and L does. The TIE ratio is EBIT/Int. If the two companies have the same EBIT, the one with the lower interest expense (Firm U), will have a higher TIE. Therefore, statement a is false. Firms L and U have the same EBIT, but Firm L has a higher interest expense, so its net income will be lower than Firm U. Since ROA is equal to NI/TA, and the two firms have the same total assets, Firm L will have a lower ROA than Firm U. Therefore, statement b is true. Leverage will increase ROE if BEP > k_d. Since BEP is 20 percent and k_d is 8 percent, leverage will increase Firm L's ROE. Therefore, statement c is false.

27. Optimal capital structure **Answer: d Diff: M**

28. Operating and financial leverage **Answer: e Diff: M**

29. Financial leverage and ratios **Answer: c Diff: M**

Statement a is false; A's net income is lower than B's due to higher interest expense, but its assets are equal to B's, so A's ROA must be lower than B's ROA. Statement b is false; A has the same EBIT as B, but higher interest payments than B; therefore, A's TIE is lower than B's. Statement c is correct.

30. Limits of leverage **Answer: d Diff: M**

31. Signaling theory **Answer: b Diff: M**

32. Capital structure and WACC **Answer: d Diff: M**

Statement b is false because it is not always true.

33. Capital structure and WACC **Answer: b Diff: M**

Statement b is true; the other statements are false. The cost of retained earnings should be higher than debt financing. EPS is maximized at a higher capital structure than the one that minimizes the firm's weighted average cost of capital. Increasing debt increases the risk of bankruptcy, which can increase the costs of both debt and equity.

34. Miscellaneous capital structure concepts **Answer: a Diff: M**

Statement a is true; the other statements are false. If the personal tax rate were increased, investors would prefer to receive less of their income as interest--implying firms would substitute equity for debt. High business risk is associated with high operating leverage; therefore, firms with high business risk would use less debt.

35. Miscellaneous capital structure concepts **Answer: c Diff: M**

If corporate tax rates were decreased while other things were held constant, and if the MM tax-adjusted tradeoff theory of capital structure were correct, corporations would decrease their use of debt because the tax shelter benefit would not be as great as when tax rates are high. Business risk is the riskiness of the firm's operations if it uses no debt. The optimal capital structure does not maximize EPS, and the degree of total leverage shows how a given change in sales will affect earnings per share.

36. Variations in capital structures **Answer: d Diff: T**

13A-37. DOL, DFL, and DTL **Answer: c Diff: E**

13A-38. Financial leverage **Answer: e Diff: M**

13A-39. Financial leverage **Answer: d Diff: M**

13A-40. Financial risk **Answer: b Diff: M**

13A-41. Operating and financial leverage **Answer: a Diff: M**

13-42. Operating and financial leverage **Answer: e Diff: M**

13-43. DOL **Answer: c Diff: M**

13-44. Debt ratio and DOL **Answer: a Diff: M**

Statement a is correct; the other statements are false. After the sales increase, the percentage increase in EBIT will be the same for both companies. Company E's net income will rise by exactly 10%.

13-45. Degree of leverage **Answer: a Diff: M**