CHAPTER 17

Financial Leverage and Capital Structure Policy

I. DEFINITIONS

HOMEMADE LEVERAGE

a 1. The use of personal borrowing to change the overall amount of financial leverage to which an individual is exposed is called:
   a. homemade leverage.
   b. dividend recapture.
   c. the weighted average cost of capital.
   d. private debt placement.
   e. personal offset.

M&M PROPOSITION I

b 2. The proposition that the value of the firm is independent of its capital structure is called:
   a. the capital asset pricing model.
   b. M&M Proposition I.
   c. M&M Proposition II.
   d. the law of one price.
   e. the efficient markets hypothesis.

M&M PROPOSITION II

c 3. The proposition that the cost of equity is a positive linear function of capital structure is called:
   a. the capital asset pricing model.
   b. M&M Proposition I.
   c. M&M Proposition II.
   d. the law of one price.
   e. the efficient markets hypothesis.

BUSINESS RISK

d 4. The equity risk derived from a firm's operating activities is called _____ risk.
   a. market
   b. systematic
   c. extrinsic
   d. business
   e. financial

FINANCIAL RISK

e 5. The equity risk derived from a firm's capital structure policy is called _____ risk.
   a. market
   b. systematic
   c. extrinsic
   d. business
   e. financial

INTEREST TAX SHIELD

a 6. The tax savings of the firm derived from the deductibility of interest expense is called the:
   a. interest tax shield.
   b. depreciable basis.
   c. financing umbrella.
   d. current yield.
   e. tax-loss carryforward savings.

UNLEVERED COST OF CAPITAL

b 7. The unlevered cost of capital is:
   a. the cost of capital for a firm with no equity in its capital structure.
   b. the cost of capital for a firm with no debt in its capital structure.
   c. the interest tax shield times pretax net income.
   d. the cost of preferred stock for a firm with equal parts debt and common stock in its capital structure.
   e. equal to the profit margin for a firm with some debt in its capital structure.

DIRECT BANKRUPTCY COSTS

c 8. The explicit costs, such as the legal expenses, associated with corporate default are classified as _____ costs.
   a. flotation
   b. beta conversion
   c. direct bankruptcy
   d. indirect bankruptcy
   e. unlevered

INDIRECT BANKRUPTCY COSTS

c 9. The costs of avoiding a bankruptcy filing by a financially distressed firm are classified as _____ costs.
   a. flotation
   b. direct bankruptcy
   c. indirect bankruptcy
   d. financial solvency
   e. capital structure

FINANCIAL DISTRESS COSTS

e 10. The explicit and implicit costs associated with corporate default are referred to as the _____ costs of a firm.
   a. flotation
   b. default beta
   c. direct bankruptcy
   d. indirect bankruptcy
   e. financial distress

STATIC THEORY OF CAPITAL STRUCTURE

a 11. The proposition that a firm borrows up to the point where the marginal benefit of the interest tax shield derived from increased debt is just equal to the marginal expense of the resulting increase in financial distress costs is called the:
   a. static theory of capital structure.
   b. M&M Proposition I.
   c. M&M Proposition II.
   d. capital asset pricing model.
   e. open markets theorem.

BANKRUPTCY

b 12. The legal proceeding for liquidating or reorganizing a firm operating in default is called a:
   a. tender offer.
   b. bankruptcy.
   c. merger.
   d. takeover.
   e. proxy fight.

LIQUIDATION

c 13. The complete termination of a firm as a going business concern is called a:
   a. merger.
   b. repurchase program.
   c. liquidation.
   d. reorganization.
   e. divestiture.

ACCOUNTING INSOLVENCY

d 14. A firm that has negative net worth is said to be:
   a. experiencing a business failure.
   b. in legal bankruptcy.
   c. experiencing technical insolvency.
   d. experiencing accounting insolvency.
   e. in Chapter 11 bankruptcy reorganization.

REORGANIZATION

d 15. An attempt to financially restructure a failing firm so that it can continue operating as a going concern is called a:
   a. merger.
   b. repurchase program.
   c. liquidation.
   d. reorganization.
   e. divestiture.

II. CONCEPTS

CAPITAL STRUCTURE

b 16. A firm should select the capital structure which:
- a. produces the highest cost of capital.
- b. maximizes the value of the firm.
- c. minimizes taxes.
- d. is fully unlevered.
- e. has no debt.

CAPITAL STRUCTURE

d 17. The value of a firm is maximized when the:
- a. cost of equity is maximized.
- b tax rate is zero.
- c. levered cost of capital is maximized.
- d. weighted average cost of capital is minimized.
- e. debt-equity ratio is minimized.

CAPITAL STRUCTURE

e 18. The optimal capital structure has been achieved when the:
- a. debt-equity ratio is equal to 1.
- b. weight of equity is equal to the weight of debt.
- c. cost of equity is maximized given a pre-tax cost of debt.
- d. debt-equity ratio is such that the cost of debt exceeds the cost of equity.
- e. debt-equity ratio selected results in the lowest possible weighed average cost of capital.

BREAK-EVEN EBIT

d 19. ABC, Inc. is comparing two capital structures to determine how to best finance their firm's operations. The first option consists of 100 percent equity financing. The second option is based on a debt-equity ratio of .40. What should ABC do if their expected earnings before interest and taxes (EBIT) is less than the break-even level? Assume there are no taxes.
- a. select the leverage option because the debt-equity ratio is less than .50
- b. select the leverage option since the expected EBIT is less than the break-even level
- c. select the unlevered option since the debt-equity ratio is less than .50
- d. select the unlevered option since the expected EBIT is less than the break-even level
- e. cannot be determined from the information provided

BREAK-EVEN EBIT

a 20. You have computed the break-even point between a capital structure that has no debt and one that has debt. Assume there are no taxes. At the break-even level, the:
- a. firm is just earning enough to pay for the cost of the debt.
- b. firm's earnings before interest and taxes are equal to zero.
- c. earnings per share for the levered option are exactly double those of the unlevered option.
- d. advantages of leverage exceed the disadvantages of leverage.
- e. firm has a debt-equity ratio of .50.

BREAK-EVEN EBIT

a 21. Which one of the following statements is correct concerning the relationship between a capital structure with debt and one without debt? Assume there are no taxes.
   a. When a firm is operating at a point where the actual earnings before interest and taxes (EBIT) exceed the break-even level, then adding debt to the capital structure will increase the earnings per share (EPS).
   b. The earnings per share will equal zero when EBIT is zero for a levered firm.
   c. The advantages of leverage primarily occur when EBIT is just barely positive.
   d. The firm's EPS will always be higher if the firm uses leverage.
   e. EPS are more sensitive to changes in EBIT when a firm is unlevered.

HOMEMADE LEVERAGE

d 22. Bryan invested in Bryco, Inc. stock when the firm was financed solely with equity. The firm is now utilizing debt in its capital structure. To unlever his position, Bryan needs to:
   a. borrow some money and purchase additional shares of Bryco stock.
   b. maintain his current position as the debt of the firm did not affect his personal leverage position.
   c. sell some shares of Bryco stock and hold the proceeds in cash.
   d. sell some shares of Bryco stock and loan it out such that he creates a personal debt-equity ratio equal to that of the firm.
   e. create a personal debt-equity ratio that is equal to exactly 50 percent of the debt-equity ratio of the firm.

HOMEMADE LEVERAGE

e 23. The capital structure chosen by a firm doesn't really matter because of:
   a. taxes.
   b. the interest tax shield.
   c. the relationship between dividends and earnings per share.
   d. the effects of leverage on the cost of equity.
   e. homemade leverage.

M&M PROPOSITION I, NO TAX

c 24. M&M Proposition I with no tax supports the argument that:
   a. business risk determines the return on assets.
   b. the cost of equity rises as leverage rises.
   c. it is completely irrelevant how a firm arranges its finances.
   d. a firm should borrow money to the point where the tax benefit from debt is equal to the cost of the increased probability of financial distress.
   e. financial risk is determined by the debt-equity ratio.

M&M PROPOSITION I, NO TAX

a 25. The proposition that the value of a levered firm is equal to the value of an unlevered firm is known as:
   a. M&M Proposition I with no tax.
   b. M&M Proposition II with no tax.
   c. M&M Proposition I with tax.
   d. M&M Proposition II with tax.
   e. static theory proposition.

M&M PROPOSITION I, NO TAX

a 26. The concept of homemade leverage is most associated with:
   a. M&M Proposition I with no tax.
   b. M&M Proposition II with no tax.
   c. M&M Proposition I with tax.
   d. M&M Proposition II with tax.
   e. static theory proposition.

M&M PROPOSITION II, NO TAX

c 27. Which of the following statements are correct in relation to M&M Proposition II with no taxes?
   I. The return on assets is equal to the weighted average cost of capital.
   II. Financial risk is determined by the debt-equity ratio.
   III. Financial risk determines the return on assets.
   IV. The cost of equity declines when the amount of leverage used by a firm rises.
   a. I and III only
   b. II and IV only
   c. I and II only
   d. III and IV only
   e. I and IV only

M&M PROPOSITION I, WITH TAX

a 28. M&M Proposition I with tax supports the theory that:
   a. there is a positive linear relationship between the amount of debt in a levered firm and its value.
   b. the value of a firm is inversely related to the amount of leverage used by the firm.
   c. the value of an unlevered firm is equal to the value of a levered firm plus the value of the interest tax shield.
   d. a firm's cost of capital is the same regardless of the mix of debt and equity used by the firm.
   e. a firm's weighted average cost of capital increases as the debt-equity ratio of the firm rises.

M&M PROPOSITION I, WITH TAX

d 29. M&M Proposition I with taxes is based on the concept that:
   a. the optimal capital structure is the one that is totally financed with equity.
   b. the capital structure of the firm does not matter because investors can use homemade leverage.
   c. the firm is better off with debt based on the weighted average cost of capital.
   d. the value of the firm increases as total debt increases because of the interest tax shield.
   e. the cost of equity increases as the debt-equity ratio of a firm increases.

M&M PROPOSITION II, WITH TAX

a 30. M&M Proposition II with taxes:
   a. has the same general implications as M&M Proposition II without taxes.
   b. reveals how the interest tax shield relates to the value of a firm.
   c. supports the argument that business risk is determined by the capital structure employed by a firm.
   d. supports the argument that the cost of equity decreases as the debt-equity ratio increases.
   e. reaches the final conclusion that the capital structure decision is irrelevant to the value of a firm.

M&M PROPOSITION II

c 31. M&M Proposition II is the proposition that:
   a. supports the argument that the capital structure of a firm is irrelevant to the value of the firm.
   b. the cost of equity depends on the return on debt, the debt-equity ratio and the tax rate.
   c. a firm's cost of equity capital is a positive linear function of the firm's capital structure.
   d. the cost of equity is equivalent to the required return on the total assets of a firm.
   e. supports the argument that the size of the pie does not depend on how the pie is sliced.

BUSINESS RISK

d 32. The business risk of a firm:
   a. depends on the level of unsystematic risk associated with the assets of the firm.
   b. is inversely related to the required return on the firm's assets.
   c. is dependent upon the relative weights of the debt and equity used to finance the firm.
   d. has a positive relationship with the cost of equity for that firm.
   e. has no relationship with the required return on a firm's assets according to M&M Proposition II.

FINANCIAL RISK

d 33. Which of the following statements concerning financial risk are correct?
   I. Financial risk is the risk associated with the use of debt financing.
   II. As financial risk increases so too does the cost of equity.
   III. Financial risk is wholly dependent upon the financial policy of a firm.
   IV. Financial risk is the risk that is inherent in a firm's operations.
   a. I and III only
   b. II and IV only
   c. II and III only
   d. I, II, and III only
   e. I, II, III, and IV

INTEREST TAX SHIELD

e 34. The present value of the interest tax shield is expressed as:
   a. $(T_C \times D) \div R_A$.
   b. $V_U + (T_C \times D)$.
   c. $[EBIT \times (T_C \times D)] \div R_U$.
   d. $[EBIT \times (T_C \times D)] \div R_A$.
   e. $T_c \times D$.

INTEREST TAX SHIELD

c 35. The interest tax shield has no value for a firm when:
   I. the tax rate is equal to zero.
   II. the debt-equity ratio is exactly equal to 1.
   III. the firm is unlevered.
   IV. a firm elects 100 percent equity as their capital structure.
   a. I and III only
   b. II and IV only
   c. I, III, and IV only
   d. II, III, and IV only
   e. I, II, and IV only

INTEREST TAX SHIELD

c 36. The interest tax shield is a key reason why:
   a. the required rate of return on assets rises when debt is added to the capital structure.
   b. the value of an unlevered firm is equal to the value of a levered firm.
   c. the net cost of debt to a firm is generally less than the cost of equity.
   d. the cost of debt is equal to the cost of equity for a levered firm.
   e. firms prefer equity financing over debt financing.

INTEREST TAX SHIELD

d 37. Which of the following will tend to diminish the benefit of the interest tax shield given a progressive tax rate structure?
   I. a reduction in tax rates
   II. a large tax loss carryforward
   III. a large depreciation tax deduction
   IV. a sizeable increase in taxable income
   a. I and II only
   b. I and III only
   c. II and III only
   d. I, II, and III only
   e. I, II, III, and IV

BANKRUPTCY

e 38. Which one of the following statements concerning bankruptcy is correct?
   a. The administrative costs incurred in a bankruptcy are considered indirect bankruptcy costs.
   b. Bondholders have a greater incentive than stockholders to keep a firm from filing for bankruptcy.
   c. Bankruptcy is sometimes used as a means to increase payroll costs.
   d. The assets of a firm tend to increase in value when a firm is in financial distress.
   e. An implicit cost of bankruptcy is the loss of key employees.

BANKRUPTCY

e 39. Indirect bankruptcy costs:
   a. effectively limit the amount of equity a firm issues.
   b. serve as an incentive to increase the financial leverage of a firm.
   c. include direct costs such as legal and accounting fees.
   d. tend to increase as the debt-equity ratio decreases.
   e. include the costs incurred by a firm as it tries to avoid seeking bankruptcy protection.

OPTIMAL CAPITAL STRUCTURE

e 40. When a firm is operating with the optimal capital structure:
   I. the debt-equity ratio will also be optimal.
   II. the weighted average cost of capital will be at its minimal point.
   III. the required return on assets will be at its maximum point.
   IV. the increased benefit from additional debt is equal to the increased bankruptcy costs of that debt.
   a. I and IV only
   b. II and III only
   c. I and II only
   d. II, III, and IV only
   e. I, II, and IV only

OPTIMAL CAPITAL STRUCTURE

d 41. The optimal capital structure will tend to include more debt for firms with:
   a. the highest depreciation deductions.
   b. the lowest marginal tax rate.
   c. substantial tax shields from other sources.
   d. lower probability of financial distress.
   e. less taxable income.

OPTIMAL CAPITAL STRUCTURE

c 42. The optimal capital structure of a firm _____ the marketed claims and _____ the nonmarketed claims against the cash flows of the firm.
   a. minimizes; minimizes
   b. minimizes; maximizes
   c. maximizes; minimizes
   d. maximizes; maximizes
   e. equates; (leave blank)

OPTIMAL CAPITAL STRUCTURE

c 43. The optimal capital structure:
   a. will be the same for all firms in the same industry.
   b. will remain constant over time unless the firm does an acquisition.
   c. of a firm will vary over time as taxes and market conditions change.
   d. places more emphasis on the operations of a firm rather than the financing of a firm.
   e. is unaffected by changes in the financial markets.

M&M THEORY

b 44. The basic lesson of M&M Theory is that the value of a firm is dependent upon the:
   a. capital structure of the firm.
   b. total cash flows of the firm.
   c. percentage of a firm to which the bondholders have a claim.
   d. tax claim placed on the firm by the government.
   e. size of the stockholders claims on the firm.

OBSERVED CAPITAL STRUCTURES

b 45. Corporations in the U.S. tend to:
   a. minimize taxes.
   b. underutilize debt.
   c. rely less on equity financing than they should.
   d. have extremely high debt-equity ratios.
   e. rely more heavily on bonds than stocks as the major source of financing.

OBSERVED CAPITAL STRUCTURES

e 46. In general, the capital structures used by U.S. firms:
   a. tend to overweigh debt in relation to equity.
   b. are easily explained in terms of earnings volatility.
   c. are easily explained by analyzing the types of assets owned by the various firms.
   d. tend to be those which maximize the use of the firm's available tax shelters.
   e. vary significantly across industries.

BANKRUPTCY PROCESS

c 47. A firm is technically insolvent when:
   a. it has a negative net worth on its balance sheet.
   b. the value of the firm's assets is less than the value of the firm's liabilities.
   c. it is unable to meet its financial obligations.
   d. it files the legal forms petitioning for bankruptcy protection.
   e. the value of its stock declines by more than 50 percent.

BANKRUPTCY PROCESS

b 48. Which one of the following statements is correct concerning a Chapter 7 bankruptcy?
   a. A firm in Chapter 7 bankruptcy is reorganizing its operations such that is can return to being a viable concern.
   b. Under a Chapter 7 bankruptcy, a trustee will assume control of the firm's assets until those assets can be liquidated.
   c. Chapter 7 bankruptcies are always involuntary on the part of the firm.
   d. Under a Chapter 7 bankruptcy, the claims of creditors are paid prior to the administrative costs of the bankruptcy.
   e. Chapter 7 bankruptcy allows a firm to restructure its equity position such that new shares of stock are generally issued prior to the firm coming out of bankruptcy.

BANKRUPTCY PROCESS

e 49. Under a Chapter 7 bankruptcy, which one of the following is generally considered to be the highest priority claim?
   a. consumer claim
   b. dividend payment to preferred shareholder
   c. company contribution to the employees' retirement account
   d. payment to an unsecured creditor
   e. payment of employee wages

BANKRUPTCY PROCESS

e 50. A firm may file for Chapter 11 bankruptcy:
   I. in an attempt to gain a competitive advantage.
   II. using a prepack.
   III. while allowing the current management to continue running the firm.
   IV. even though it is not insolvent.
   a. I and III only
   b. I, II, and IV only
   c. I and II only
   d. III and IV only
   e. I, II, III, and IV

STATIC THEORY OF CAPITAL STRUCTURE

a 51. The static theory of capital structure:
   a. assumes that the firm's operations and assets are fixed.
   b. assumes that the firm's operations are fixed but that its assets are increasing.
   c. supports increasing the leverage employed by a firm when the probability of financial distress becomes significant.
   d. equates the benefits of equity financing to the costs associated with the probability of financial distress.
   e. states that a firm should operate at the point where the cost of capital is maximized.

STATIC THEORY OF CAPITAL STRUCTURE

c 52. The static theory of capital structure supports the theory that value-maximizing managers will:
   a. look to the asset side of the balance sheet to increase firm value since the mix of debt and equity selected is unlikely to affect firm value.
   b. not concern themselves with the capital structure of the firm as it is an irrelevant issue.
   c. select the capital structure for which the cost associated with the probability of financial distress equals the benefit of the interest tax shield.
   d. select an all equity capital structure to ensure the value of the firm is maximized.
   e. select the capital structure which maximizes the interest tax shield.

III. PROBLEMS

BREAK-EVEN EBIT

e 53. Becker Industries is considering an all equity capital structure against one with both debt and equity. The all equity capital structure would consist of 25,000 shares of stock. The debt and equity option would consist of 15,000 shares of stock plus $250,000 of debt with an interest rate of 7 percent. What is the break-even level of earnings before interest and taxes between these two options? Ignore taxes.
   a. $41,150
   b. $41,450
   c. $41,500
   d. $42,680
   e. $43,750

BREAK-EVEN EBIT

a 54. Blackstone, Inc. is currently an all equity firm that has 65,000 shares of stock outstanding at a market price of $22 a share. The firm has decided to leverage their operations by issuing $605,000 of debt at an interest rate of 6.5 percent. This new debt will be used to repurchase shares of the outstanding stock. The restructuring is expected to increase the earnings per share. What is the minimum level of earnings before interest and taxes that Blackstone is expecting? Ignore taxes.
   a. $92,950
   b. $94,700
   c. $95,250
   d. $95,400
   e. $96,150

BREAK-EVEN EBIT

b 55. Martha White's Fabrics is currently an all equity firm that has 15,000 shares of stock outstanding at a market price of $12.50 a share. Company management has decided to issue $50,000 worth of debt and use the funds to repurchase shares of the outstanding stock. The interest rate on the debt will be 9 percent. What are the earnings per share at the break-even level of earnings before interest and taxes? Ignore taxes.
   a. $1.005
   b. $1.125
   c. $1.175
   d. $1.200
   e. $1.250

HOMEMADE LEVERAGE

c 56. Martin & Sons (M&S) currently is an all equity firm with 40,000 shares of stock outstanding at a market price of $25 a share. The company's earnings before interest and taxes are $80,000. M&S has decided to add leverage to their financial operations by issuing $500,000 of debt with a 7 percent interest rate. This $500,000 will be used to repurchase shares of stock. You own 1,000 shares of M&S stock. You also loan out funds at a 7 percent rate of interest. How many of your shares of stock in M&S must you sell to offset the leverage that the firm is assuming? Assume that you loan out all of the funds you receive from the sale of your stock.

a. 400 shares
b. 450 shares
c. 500 shares
d. 550 shares
e. 600 shares

HOMEMADE LEVERAGE

d 57. You currently own 500 shares in K&S Stores. K&S is currently an all equity firm that has 25,000 shares of stock outstanding at a market price of $10 a share. The company's earnings before interest and taxes is $20,000. K&S has decided to issue $150,000 of debt at a 6 percent rate of interest. This $150,000 will be used to repurchase shares of stock. How many shares of K&S stock must you sell to unlever your position if you can loan out funds at a 6 percent rate of interest?

a. 150 shares
b. 200 shares
c. 250 shares
d. 300 shares
e. 500 shares

HOMEMADE LEVERAGE

d 58. R&F Enterprises is an all equity firm with 70,000 shares of stock outstanding at a market price of $8 a share. The company has earnings before interest and taxes of $42,000. R&F decides to issue $200,000 of debt at a 7 percent rate of interest. The $200,000 will be used to repurchase shares of the outstanding stock. Currently, you own 1,500 shares of R&F stock. How many shares of this stock must you sell to unlever your position if you can loan out funds at a 7 percent rate of interest?

a. 489 shares
b. 497 shares
c. 508 shares
d. 536 shares
e. 541 shares

M&M PROPOSITION I, NO TAX

a 59. Thompson & Thomson is an all equity firm that has 500,000 shares of stock outstanding. The company is in the process of borrowing $8 million at 9 percent interest to repurchase 200,000 shares of the outstanding stock. What is the value of this firm if you ignore taxes?
   a. $20.0 million
   b. $20.8 million
   c. $21.0 million
   d. $21.2 million
   e. $21.3 million

M&M PROPOSITION I, NO TAX

c 60. Uptown Interior Designs is an all equity firm that has 40,000 shares of stock outstanding. The company has decided to borrow $1 million to buy out the shares of a deceased stockholder who holds 2,500 shares. What is the total value of this firm if you ignore taxes?
   a. $15.5 million
   b. $15.6 million
   c. $16.0 million
   d. $16.8 million
   e. $17.2 million

M&M PROPOSITION I, NO TAX

e 61. You own 25 percent of Unique Vactions, Inc. You have decided to retire and want to sell your shares in this closely held, all equity firm. The other shareholders have agreed to have the firm borrow $1.5 million to purchase your 1,000 shares of stock. What is the total value of this firm today if you ignore taxes?
   a. $4.8 million
   b. $5.1 million
   c. $5.4 million
   d. $5.7 million
   e. $6.0 million

M&M PROPOSITION II, NO TAX

d 62. Your firm has a debt-equity ratio of .75. Your pre-tax cost of debt is 8.5 percent and your required return on assets is 15 percent. What is your cost of equity if you ignore taxes?
   a. 11.25 percent
   b. 12.21 percent
   c. 16.67 percent
   d. 19.88 percent
   e. 21.38 percent

M&M PROPOSITION II, NO TAX

b 63. Bigelow, Inc. has a cost of equity of 13.56 percent and a pre-tax cost of debt of 7 percent. The required return on the assets is 11 percent. What is the firm's debt-equity ratio based on M&M II with no taxes?
   a. .60
   b. .64
   c. .72
   d. .75
   e. .80

M&M PROPOSITION II, NO TAX

d 64. The Backwoods Lumber Co. has a debt-equity ratio of .80. The firm's required return on assets is 12 percent and its cost of equity is 15.68 percent. What is the pre-tax cost of debt based on M&M II with no taxes?
   a. 6.76 percent
   b. 7.00 percent
   c. 7.25 percent
   d. 7.40 percent
   e. 7.50 percent

M&M PROPOSTION I, WITH TAX

b 65. The Winter Wear Company has expected earnings before interest and taxes of $2,100, an unlevered cost of capital of 14 percent and a tax rate of 34 percent. The company also has $2,800 of debt that carries a 7 percent coupon. The debt is selling at par value. What is the value of this firm?
   a. $9,900
   b. $10,852
   c. $11,748
   d. $12,054
   e. $12,700

M&M PROPOSITION I, WITH TAX

b 66. Gail's Dance Studio is currently an all equity firm that has 80,000 shares of stock outstanding with a market price of $42 a share. The current cost of equity is 12 percent and the tax rate is 34 percent. Gail is considering adding $1 million of debt with a coupon rate of 8 percent to her capital structure. The debt will be sold at par value. What is the levered value of the equity?
   a. $2.4 million
   b. $2.7 million
   c. $3.3 million
   d. $3.7 million
   e. $3.9 million

M&M PROPOSITION I, WITH TAX

c 67. The Montana Hills Co. has expected earnings before interest and taxes of $8,100, an unlevered cost of capital of 11 percent, and debt with both a book and face value of $12,000. The debt has an annual 8 percent coupon. The tax rate is 34 percent. What is the value of the firm?
   a. $48,600
   b. $50,000
   c. $52,680
   d. $56,667
   e. $60,600

M&M PROPOSITION I, WITH TAX

c 68. Scott's Leisure Time Sports is an unlevered firm with an after-tax net income of $86,000. The unlevered cost of capital is 10 percent and the tax rate is 34 percent. What is the value of this firm?
   a. $567,600
   b. $781,818
   c. $860,000
   d. $946,000
   e. $1,152,400

M&M PROPOSITION I, WITH TAX

c 69. An unlevered firm has a cost of capital of 14 percent and earnings before interest and taxes of $150,000. A levered firm with the same operations and assets has both a book value and a face value of debt of $700,000 with a 7 percent annual coupon. The applicable tax rate is 35 percent. What is the value of the levered firm?
   a. $696,429
   b. $907,679
   c. $941,429
   d. $1,184,929
   e. $1,396,429

M&M PROPOSITION II, WITH TAX

c 70. The Spartan Co. has an unlevered cost of capital of 11 percent, a cost of debt of 8 percent, and a tax rate of 35 percent. What is the target debt-equity ratio if the targeted cost of equity is 12 percent?
   a. .44
   b. .49
   c. .51
   d. .56
   e. .62

M&M PROPOSITION II, WITH TAX

d 71. Hey Guys!, Inc. has debt with both a face and a market value of $3,000. This debt has a coupon rate of 7 percent and pays interest annually. The expected earnings before interest and taxes is $1,200, the tax rate is 34 percent, and the unlevered cost of capital is 12 percent. What is the firm's cost of equity?
   a. 13.25 percent
   b. 13.89 percent
   c. 13.92 percent
   d. 14.14 percent
   e. 14.25 percent

M&M PROPOSITION II, WITH TAX

e 72. Anderson's Furniture Outlet has an unlevered cost of capital of 10 percent, a tax rate of 34 percent, and expected earnings before interest and taxes of $1,600. The company has $3,000 in bonds outstanding that have an 8 percent coupon and pay interest annually. The bonds are selling at par value. What is the cost of equity?
   a. 8.67 percent
   b. 9.34 percent
   c. 9.72 percent
   d. 9.99 percent
   e. 10.46 percent

M&M PROPOSITION II, WITH TAX

b 73. Walter's Distributors have a cost of equity of 13.84 percent and an unlevered cost of capital of 12 percent. The company has $5,000 in debt that is selling at par value. The levered value of the firm is $12,000 and the tax rate is 34 percent. What is the pre-tax cost of debt?
   a. 7.92 percent
   b. 8.10 percent
   c. 8.16 percent
   d. 8.84 percent
   e. 9.00 percent

M&M PROPOSITION II, WITH TAX

b 74. Rosita's has a cost of equity of 13.8 percent and a pre-tax cost of debt of 8.5 percent. The debt-equity ratio is .60 and the tax rate is .34. What is Rosita's unlevered cost of capital?
   a. 8.83 percent
   b. 12.30 percent
   c. 13.97 percent
   d. 14.08 percent
   e. 14.60 percent

M&M PROPOSITION II, WITH TAX

e 75. Your firm has a pre-tax cost of debt of 7 percent and an unlevered cost of capital of 13 percent. Your tax rate is 35 percent and your cost of equity is 15.26 percent. What is your debt-equity ratio?
   a. .43
   b. .49
   c. .51
   d. .54
   e. .58

M&M PROPOSITION II, WITH TAX

c 76. Wild Flowers Express has a debt-equity ratio of .60. The pre-tax cost of debt is 9 percent while the unlevered cost of capital is 14 percent. What is the cost of equity if the tax rate is 34 percent?
   a. 7.52 percent
   b. 8.78 percent
   c. 15.98 percent
   d. 16.83 percent
   e. 17.30 percent

INTEREST TAX SHIELD

a 77. Your firm has a $250,000 bond issue outstanding. These bonds have a 7 percent coupon, pay interest semiannually, and have a current market price equal to 103 percent of face value. What is the amount of the annual interest tax shield given a tax rate of 35 percent?
   a. $6,125
   b. $6,309
   c. $9,500
   d. $17,500
   e. $18,025

INTEREST TAX SHIELD

d 78. Bertha's Boutique has 2,000 bonds outstanding with a face value of $1,000 each and a coupon rate of 9 percent. The interest is paid semi-annually. What is the amount of the annual interest tax shield if the tax rate is 34 percent?
   a. $58,500
   b. $60,100
   c. $60,750
   d. $61,200
   e. $62,250

INTEREST TAX SHIELD

c 79. Juanita's Steak House has $12,000 of debt outstanding that is selling at par and has a coupon rate of 8 percent. The tax rate is 34 percent. What is the present value of the tax shield?
   a. $2,823
   b. $2,887
   c. $4,080
   d. $4,500
   e. $4,633

WEIGHTED AVERAGE COST OF CAPITAL

a 80. Your firm has expected earnings before interest and taxes of $1,600. Your unlevered cost of capital is 13 percent and your tax rate is 34 percent. You have debt with both a book and a face value of $2,500. This debt has an 8 percent coupon and pays interest annually. What is your weighted average cost of capital?
   a. 11.77 percent
   b. 12.03 percent
   c. 12.20 percent
   d. 12.50 percent
   e. 12.69 percent

WEIGHTED AVERAGE COST OF CAPITAL

d 81. A firm has debt of $5,000, equity of $16,000, a leveraged value of $8,900, a cost of debt of 8 percent, a cost of equity of 12 percent, and a tax rate of 34 percent. What is the firm's weighted average cost of capital?
   a. 7.29 percent
   b. 7.94 percent
   c. 8.87 percent
   d. 10.40 percent
   e. 11.05 percent

WEIGHTED AVERAGE COST OF CAPITAL

e 82. Your firm has a debt-equity ratio of .60. Your cost of equity is 11 percent and your after-tax cost of debt is 7 percent. What will your cost of equity be if the target capital structure becomes a 50/50 mix of debt and equity?
   a. 9.50 percent
   b. 10.50 percent
   c. 11.00 percent
   d. 11.25 percent
   e. 12.00 percent

WEIGHTED AVERAGE COST OF CAPITAL

a 83. Your firm has earnings before interest and taxes of $160,000. Both the book and the market value of debt is $300,000. Your unlevered cost of equity is 12 percent while your cost of debt is 8 percent. The tax rate is 35 percent. What is your weighted average cost of capital?
   a. 10.72 percent
   b. 10.91 percent
   c. 10.98 percent
   d. 11.06 percent
   e. 11.23 percent

IV. ESSAYS

CAPITAL STRUCTURE THEORIES

84. Draw the following two graphs, one above the other: In the top graph, plot firm value on the vertical axis and total debt on the horizontal. Use the graph to illustrate the value of a firm under M&M without taxes, M&M with taxes, and the static theory of capital structure. On the lower graph, plot the WACC on the vertical axis and the debt/equity ratio on the horizontal axis. Use the graph to illustrate the value of the firm's WACC under M&M without taxes, M&M with taxes, and the static theory. Briefly explain what the two graphs tell us about firm value and its cost of capital under the three different theories.

    The student should replicate and explain Figure 17.8 from the text.

PREPACKAGED BANKRUPTCY

85. What are the advantages of a prepackaged bankruptcy for a firm? What are the disadvantages?

    A prepack allows a firm to minimize its stay in bankruptcy court and should allow the firm to minimize its bankruptcy costs as well. In either case, management is freed up to spend time on more productive tasks such as operating the firm. The negative side of a prepack is a little more difficult to discern. Astute students will recognize that prepacks take time to negotiate, that is, they may save time during bankruptcy, but they are likely to take more time up front than a straight bankruptcy filing. Furthermore, it is also likely that the firm must give creditors a better deal in order to get them to sign on to the bankruptcy agreement. Should this be the case, the firm may actually get better terms from its creditors by going through with a full bankruptcy process.

CAPITAL STRUCTURE THEORY

86. Is there an easily identifiable debt-equity ratio that will maximize the value of a firm? Why or why not?

    Students should explain that in a world with taxes, transaction costs, and financial distress costs, there are both benefits and costs to higher debt loads, and there is no way to target exactly what the ideal capital structure should be.

BUSINESS AND FINANCIAL RISK

87. Describe some of the sources of business risk and financial risk. Do financial decision makers have the ability to "trade off" one type of risk for the other?

    Students should intuitively recognize that some of the observed variation in capital structures across industries reflect the differences in the nature of the industries themselves i.e., business risk. Similarly, intuition would suggest that firms with large capital requirements and stable cash flows (e.g., electric utilities) are more likely to be willing to raise funds via large amounts of borrowing. Alternatively, firms with lower tangible asset needs and highly uncertain cash flows (e.g., small software companies) are more likely to employ equity.

CAPITAL STRUCTURE THEORIES

88. Based on M&M with taxes and without taxes, how much time should a financial manager spend analyzing the capital structure of their firm? What if the analysis is based on the static theory?

    Under either M&M scenario, the financial manager should invest no time in analyzing the firm's capital structure. With no taxes, capital structure is irrelevant. With taxes, M&M says a firm will maximize its value by using 100 percent debt. In both cases, the manager has nothing to decide. With the static theory, however, the manager must determine the optimal amount of debt and equity by analyzing the tradeoff between the benefits of the interest tax shield versus the financial distress costs. Ultimately, finding the optimal capital structure is challenging in this case.

HOMEMADE LEVERAGE

89. Explain homemade leverage and why it matters.

    Homemade leverage is the ability of investors to alter their own financial leverage to achieve a desired capital structure no matter what a firm's capital structure might be. If investors can use homemade leverage to create additional leverage or to undo existing leverage of the firm at their discretion then the actual capital structure decision of the firm itself becomes irrelevant.

COST OF EQUITY

90. In each of the theories of capital structure the cost of equity rises as the amount of debt increases. So why don't financial managers use as little debt as possible to keep the cost of equity down? After all, isn't the goal of the firm to maximize share value and minimize shareholder costs?

    This question requires students to differentiate between the cost of equity and the weighted average cost of capital. In fact, it gets to the essence of capital structure theory: the firm trades off higher equity costs for lower debt costs. The shareholders benefit (to a point, according to the static theory) because their investment in the firm is leveraged, enhancing the return on their investment. Thus, even though the cost of equity rises, the overall cost of capital declines (again, up to a point according to the static theory) and firm value rises.