CHAPTER 14
DISTRIBUTIONS TO SHAREHOLDERS: DIVIDENDS AND SHARE REPURCHASES

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

Multiple Choice: Conceptual

Easy:

Dividends versus capital gains **Answer: d Diff: E**

1. Myron Gordon and John Lintner believe that the required return on equity increases as the dividend payout ratio is decreased. Their argument is based on the assumption that

   a. Investors are indifferent between dividends and capital gains.
   b. Investors require that the dividend yield and capital gains yield equal a constant.
   c. Capital gains are taxed at a higher rate than dividends.
   d. Investors view dividends as being less risky than potential future capital gains.
   e. Investors value a dollar of expected capital gains more highly than a dollar of expected dividends because of the lower tax rate on capital gains.

Dividends, DRIPs, and repurchases **Answer: d Diff: E**

2. Which of the following statements is most correct?

   a. In general, stock repurchases are taxed the same way as dividends.
   b. One nice feature of dividend reinvestment plans is that they enable investors to reduce the taxes paid on their dividends.
   c. On average, companies send a negative signal to the marketplace when they announce an increase in their dividend.
   d. If a company is interested in issuing new equity capital, a new stock dividend reinvestment plan probably makes more sense than an open market dividend reinvestment plan.
   e. Statements b and d are correct.

Dividend payout **Answer: a Diff: E**

3. In the real world, we find that dividends

   a. Usually exhibit greater stability than earnings.
   b. Fluctuate more widely than earnings.
   c. Tend to be a lower percentage of earnings for mature firms.
   d. Are usually changed every year to reflect earnings changes.
   e. Are usually set as a fixed percentage of earnings.

Dividend payout **Answer: c Diff: E**

4. A decrease in a firm's willingness to pay dividends is likely to result from an increase in its

   a. Earnings stability.
   b. Access to capital markets.
   c. Profitable investment opportunities.
   d. Collection of accounts receivable.
   e. Stock price.

Dividend theories **Answer: e Diff: E**

5. Which of the following statements best describes the theories of investors' preferences for dividends?

   a. Modigliani and Miller argue that investors prefer dividends to capital gains.
   b. The bird-in-hand theory suggests that a company can reduce its cost of equity capital by reducing its dividend payout ratio.
   c. The tax preference theory suggests that a company can increase its stock price by increasing its dividend payout ratio.
   d. One key advantage of a residual dividend policy is that it enables a company to follow a stable dividend policy.
   e. The clientele effect suggests that companies should follow a stable dividend policy.

Dividend theory and policy **Answer: c Diff: E**

6. Which of the following statements is most correct?

   a. The bird-in-the-hand theory implies that a company can reduce its WACC by reducing its dividend payout.
   b. The bird-in-the-hand theory implies that a company can increase its stock price by reducing its dividend payout.
   c. One problem with following a residual dividend policy is that it can lead to erratic dividend payouts that may prevent the firm from establishing a reliable clientele of investors who prefer a particular dividend policy.
   d. Statements a and c are correct.
   e. All of the statements above are correct.

Optimal dividend policy **Answer: e Diff: E**

7. Which of the following would not have an influence on the optimal dividend policy?

   a. The possibility of accelerating or delaying investment projects.
   b. A strong shareholders' preference for current income versus capital gains.
   c. Bond indenture constraints.
   d. The costs associated with selling new common stock.
   e. All of the statements above can have an effect on dividend policy.

Residual dividend policy **Answer: a Diff: E**

8. Trenton Publishing follows a strict residual dividend policy. All else being equal, which of the following factors are likely to cause an increase in the firm's per-share dividend?

   a. An increase in its net income.
   b. The company increases the proportion of equity financing in its target capital structure.
   c. An increase in the number of profitable projects that it wants to fund this year.
   d. Statements a and b are correct.
   e. All of the statements above are correct.

Stock split **Answer: e Diff: E**

9. A stock split will cause a change in the total dollar amounts shown in which of the following balance sheet accounts?

   a. Cash.
   b. Common stock.
   c. Paid-in capital.
   d. Retained earnings.
   e. None of the statements above is correct.

Stock split **Answer: b Diff: E**

10. You currently own 100 shares of stock in Beverly Brothers Inc. The stock currently trades at $120 a share. The company is contemplating a 2-for-1 stock split. Which of the following best describes your position after the proposed stock split takes place?

    a. You will have 200 shares of stock, and the stock will trade at or near $120 a share.
    b. You will have 200 shares of stock, and the stock will trade at or near $60 a share.
    c. You will have 100 shares of stock, and the stock will trade at or near $60 a share.
    d. You will have 50 shares of stock, and the stock will trade at or near $120 a share.
    e. You will have 50 shares of stock, and the stock will trade at or near $60 a share.

Stock repurchases and DRIPs **Answer: a Diff: E**

11. Which of the following statements is most correct?

   a. One advantage of stock repurchases is that they are generally taxed more favorably than dividend payments.
   b. One advantage of dividend reinvestment plans is that they enable investors to avoid paying taxes on the dividends they receive.
   c. Stock repurchases make sense if a company is interested in increasing its equity ratio.
   d. Stock repurchases make sense if a company believes that its stock is overvalued and that it has a lot of profitable projects to fund over the next year.
   e. One advantage of an open market dividend reinvestment plan is that it increases the number of shares the company has outstanding.

Repurchases, DRIPs, and stock splits **Answer: e Diff: E**

12. Which of the following statements is most correct?

   a. One reason that companies tend to avoid stock repurchases is that dividend payments are taxed more favorably than stock repurchases.
   b. One advantage of dividend reinvestment plans is that they allow shareholders to avoid paying taxes on the dividends that they choose to reinvest.
   c. If a company announces a 2-for-1 stock split and the overall value of the firm remains unchanged, the company’s stock price must have doubled.
   d. All of the statements above are correct.
   e. None of the statements above is correct.

Dividend policy and stock repurchases **Answer: d Diff: E N**

13. Which of the following statements is most correct?

   a. The tax code encourages companies to pay dividends.
   b. If a company uses the residual dividend model to determine its dividend payout ratio, its dividend payout will tend to increase whenever it has a large number of investment opportunities.
   c. The clientele effect encourages companies to adopt a strict version of the residual dividend model.
   d. In many cases, stock repurchases tend to increase earnings per share, but they also increase the firm’s debt ratio and financial risk.
   e. Stock repurchases are taxed the same way as dividends are taxed.

Miscellaneous dividend concepts **Answer: c Diff: E**

14. Which of the following statements is most correct?

    a. If a company puts in place a 2-for-1 stock split, its stock price should roughly double.
    b. Share repurchases are taxed less favorably than dividends; this explains why companies typically pay dividends and avoid share repurchases.
    c. On average, a company's stock price tends to rise when it announces that it is initiating a share repurchase program.
    d. Statements a and b are correct.
    e. All of the statements above are correct.

Miscellaneous dividend concepts **Answer: e Diff: E**

15. Which of the following statements is most correct?

    a. The bird-in-the-hand theory argues that investors prefer dividends because dividends are taxed more favorably than capital gains.
    b. Stock repurchases increase the number of outstanding shares.
    c. The clientele effect can explain why companies tend to vary their dividends a lot on a year-to-year basis.
    d. Statements a and b are correct.
    e. None of the statements above is correct.

Miscellaneous dividend concepts **Answer: e Diff: E**

16. Which of the following statements is most correct?

    a. The tax preference hypothesis suggests that companies can reduce their costs of capital by increasing their dividend payout ratios.
    b. One advantage of the residual dividend policy is that it leads to a stable dividend payout, which is desired by investors.
    c. Firms with a large number of investment opportunities and a relatively small amount of cash tend to have above average dividend payouts.
    d. Statements a and b are correct.
    e. None of the statements above is correct.

Medium:

Dividend theory **Answer: a Diff: M**

17. Which of the following statements is most correct?

    a. The tax preference theory states that, all else equal, investors prefer stocks that pay low dividends because retained earnings can lead to capital gains that are taxed at a lower rate.
    b. An increase in the cost of equity capital (k_s) when a company announces an increase in its dividend per share, would be consistent with the bird-in-the-hand theory.
    c. An increase in the stock price when a company decreases its dividend is consistent with the signaling theory.
    d. A dividend policy that involves paying a consistent percentage of net income is the best policy if the "clientele effect" is correct.
    e. Statements a and d are correct.

Dividend policy **Answer: b Diff: M**

18. Which of the following statements is most correct?

a. The Tax Code encourages companies to pay large dividends to their shareholders.
b. If your company has established a clientele of investors who prefer large dividends, the company is unlikely to adopt a residual dividend policy.
c. If a firm follows a residual dividend policy, holding all else constant, its dividend payout will tend to rise whenever the firm's investment opportunities improve.
d. Statements b and c are correct.
e. All of the statements above are correct.

Dividend policy **Answer: c Diff: M**

19. Which of the following statements is most correct?

a. If Congress cuts the capital gains rate, but leaves the personal tax rate unchanged, then this would provide an incentive for companies to increase their dividend payouts.
b. Despite its drawbacks, a residual dividend policy is an effective way to stabilize dividend payouts, which makes it easier for firms to attract a clientele that prefers high dividends.
c. If a firm follows a residual dividend policy, then a sudden increase in the number of profitable projects is likely to reduce the firm's dividend payout.
d. All of the statements above are correct.
e. None of the statements above is correct.

Dividend policy **Answer: a Diff: M**

20. Which of the following statements is most correct?

a. The bird-in-the-hand theory would predict that companies could decrease their cost of equity financing by raising their dividend payout.
b. The clientele effect can explain why firms often change their dividend policies.
c. One advantage of adopting a residual dividend policy is that it makes it easier for corporations to maintain dividend clienteles.
d. Statements a and c are correct.
e. None of the statements above is correct.

Residual dividend policy **Answer: c Diff: M**

21. If a firm adheres strictly to the residual dividend policy, a sale of new common stock by the company would suggest that

a. The dividend payout ratio has remained constant.
b. The dividend payout ratio is increasing.
c. No dividends were paid for the year.
d. The dividend payout ratio is decreasing.
e. The dollar amount of investments has decreased.

Residual dividend policy **Answer: b Diff: M**

22. If a firm adheres strictly to the residual dividend policy, then if its optimal capital budget requires the use of all earnings for that year (along with new debt according to the optimal debt/total assets ratio), the firm should pay

a. No dividends except out of past retained earnings.
b. No dividends to common stockholders.
c. Dividends, in effect, out of a new issue of common stock.
d. Dividends by borrowing the money (debt).
e. Either statement c or statement d above could be used.

Dividends versus capital gains **Answer: b Diff: M**

23. Modigliani and Miller (MM) argued that dividend policy is irrelevant. On the other hand, Gordon and Lintner (GL) argued that dividend policy does matter. GL's argument rests on the contention that

a. $k_s = D_1/P_0 + g$ is constant for any dividend policy.
b. Because of perceived differences in risk, investors value a dollar of dividends more highly than a dollar of expected capital gains.
c. Investors, because of tax differentials, value a dollar of expected capital gains more highly than a dollar of dividends.
d. Most investors will reinvest rather than spend dividends, so it would save investors money (taxes) if corporations simply reinvested earnings rather than paid them out as dividends.
e. None of the statements above is correct.

Taxes, DRIPs, and stock splits **Answer: d Diff: M R**

24. Congress passed a new tax law that reduced long-term capital gains tax rates from 28 percent to 20 percent. The maximum tax rate for ordinary personal income is 38.6 percent. Which of the following statements is most correct for an investor in a high personal tax bracket?

a. The stock of a company that pays high cash dividends and has a dividend reinvestment plan (DRIP) is a good investment for this individual because he/she will receive more money that can then be reinvested in the company's stock.
b. A 2-for-1 stock split is announced for a stock that the investor currently holds. The company had split the stock because the stock price had increased beyond the optimal price range and is expected to continue to grow. This is good news to the investor because it means that any gains from increased stock value will be taxed at a new lower long-term capital gains rate when the stock is sold.
c. One of the companies in the investor's portfolio recently announced that it will embark on a stock repurchase plan. The lower long-term capital gains tax rate will reduce the investor's taxes if he/she decides to tender some shares of stock in the company.
d. Statements b and c are correct.
e. All of the statements above are correct.

Taxes, DRIPs, and dividends **Answer: e Diff: M**

25. Which of the following statements is most correct?

a. "New-stock" dividend reinvestment plans are similar to stock dividends because they both increase the number of shares outstanding but don't change the total equity of a firm.
b. Investors receiving stock dividends must pay taxes on the new shares at the time the stock dividends are received.
c. Stockholders pay no income tax on dividends reinvested in a dividend reinvestment plan.
d. Statements a and b are correct.
e. None of the statements above is correct.

Stock repurchases and stock splits **Answer: e Diff: M**

26. Which of the following statements is most correct?

a. Stock repurchases can be used by firms to defend against hostile takeovers since they increase the proportion of debt in a firm's capital structure.
b. After a 3-for-1 stock split, a company's price per share will fall and its number of shares outstanding will rise.
c. Investors can interpret a stock repurchase by a firm as a signal that the firm's managers believe the stock is underpriced.
d. Statements a and b are correct.
e. All of the statements above are correct.

Miscellaneous dividend concepts **Answer: a Diff: M**

27. Which of the following statements is most correct?

a. Companies can repurchase shares either (1) to change their capital structures or (2) to distribute cash to stockholders without paying cash dividends. In the second situation, tax considerations will probably play a key role in the decision to repurchase stock versus to pay more cash dividends.
b. Stock dividends provide investors with additional shares of stock, not cash, yet many investors must pay cash in the form of taxes on the value of the stock dividends. For this reason, stock dividends are rarely used today.
c. The bird-in-the-hand theory of dividend policy could be rejected immediately if personal income taxes were abolished.
d. If the curve relating the WACC and the debt ratio looks like a sharp "V," this would make it more feasible for a firm to follow the residual dividend policy than if the curve looks like a shallow bowl (or a shallow "U").
e. The open market type of dividend reinvestment plan is the best type for firms that need to bring in new equity capital.

Miscellaneous dividend concepts **Answer: e Diff: M**

28. Which of the following statements is most correct?

    a. If a firm repurchases its stock in the open market, the shareholders that tender are subject to capital gains taxes.
    b. If you own 100 shares in a company's stock, and the company does a 2-for-1 stock split, you will own 200 shares in the company following the split.
    c. Some dividend reinvestment plans increase the amount of equity capital available to the firm.
    d. Statements a and b are correct.
    e. All of the statements above are correct.

Miscellaneous dividend concepts **Answer: e Diff: M**

29. Which of the following statements is most correct?

    a. An open-market dividend reinvestment plan is likely to be attractive to companies that are looking to issue additional shares of common stock.
    b. Stock repurchases have the effect of reducing financial leverage.
    c. If a company does a 2-for-1 stock split, its stock price will roughly double.
    d. All of the statements above are correct.
    e. None of the statements above is correct.

Miscellaneous dividend concepts **Answer: a Diff: M**

30. Which of the following statements is most correct?

    a. If a company wants to issue new shares of common stock and also wants to implement a dividend reinvestment plan, then it should implement a new-stock dividend reinvestment plan, rather than an open-market purchase plan.
    b. If a company undertakes a 3-for-1 stock split, then the number of shares outstanding should fall, and the stock price should rise.
    c. If a company wants to reduce its debt ratio, then it should repurchase some of its common stock.
    d. Statements a and c are correct.
    e. Statements b and c are correct.

Miscellaneous dividend concepts **Answer: d Diff: M**

31. Which of the following statements is most correct?

    a. If you were testing dividend theories and found that a dividend increase resulted in higher stock prices, then you could rule out all other theories and conclude that the bird-in-the-hand theory was most consistent with the evidence you found.
    b. The clientele effect suggests that investors choose their investments based on firms' past dividend policies and changes to established dividend policies may be costly to investors.
    c. Dividends paid under a residual dividend policy might send conflicting signals to investors.
    d. Statements b and c are correct.
    e. All of the statements above are correct.

Miscellaneous dividend concepts **Answer: a Diff: M**

32. Which of the following actions will enable a company to raise additional equity capital (that is, which of the following will raise the total book value of equity)?

a. The establishment of a new-stock dividend reinvestment plan.
b. A stock split.
c. The establishment of an open-market purchase dividend reinvestment plan.
d. A stock repurchase.
e. Statements a and d are correct.

Miscellaneous concepts **Answer: b Diff: M**

33. Firm M is a mature firm in a mature industry. Its annual net income and net cash flow are both consistently high and very stable. The company's growth prospects are quite limited; therefore, the company's capital budget is small relative to its net income. Firm N is a relatively new firm in a new industry. Its annual operating income fluctuates considerably, but the company has substantial growth opportunities. Its capital budget is expected to be large relative to its net income for the foreseeable future. Which of the following statements is most correct?

a. Firm M probably has a lower debt ratio than Firm N.
b. Firm M probably has a higher dividend payout ratio than Firm N.
c. If the corporate tax rate increases, the debt ratio of both firms is likely to fall.
d. Statements a and b are correct.
e. Statements b and c are correct.

Multiple Choice: Problems

Easy:

Residual dividend policy **Answer: b Diff: E**

34. Petersen Co. has a capital budget of $1,200,000. The company wants to maintain a target capital structure that consists of 60 percent debt and 40 percent equity. The company forecasts that its net income this year will be $600,000. If the company follows a residual dividend policy, what will be its payout ratio?

a. 0%
b. 20%
c. 40%
d. 60%
e. 80%

Residual dividend policy **Answer: e Diff: E**

35. Chandler Communications' CFO has provided the following information:

- The company's capital budget is expected to be $5,000,000.
- The company's target capital structure is 70 percent debt and 30 percent equity.
- The company's net income is $4,500,000.

If the company follows a residual dividend policy, what portion of its net income should it pay out as dividends this year?

a. 33.33%
b. 40.00%
c. 50.00%
d. 60.00%
e. 66.67%

Residual dividend policy **Answer: b Diff: E**

36. Strategic Systems Inc. expects to have net income of $800,000 during the next year. Its target, and current, capital structure is 40 percent debt and 60 percent common equity. The Director of Capital Budgeting has determined that the optimal capital budget for next year is $1.2 million. If Strategic uses the residual dividend model to determine next year's dividend payout, what is the expected dividend payout ratio?

a. 0%
b. 10%
c. 28%
d. 42%
e. 56%

Residual dividend policy **Answer: c Diff: E**

37. Powell Products anticipates that its capital budget next year will be $3 million. The company expects to report net income of $5 million this year. The company's target capital structure is 65 percent common equity and 35 percent long-term debt. Assume the company follows a strict residual dividend policy. What is the expected dividend payout ratio this year?

a. 65%
b. 39%
c. 61%
d. 56%
e. 100%

Residual dividend policy **Answer: a Diff: E**

38. Arden Manufacturing follows a strict residual dividend policy. The company is forecasting that its net income will be $500 million this year. The company anticipates that its capital budget will be $250 million. The company has a target capital structure that consists of 50 percent equity and 50 percent long-term debt. What is the company's anticipated dividend payout ratio?

a. 75%
b. 55%
c. 50%
d. 25%
e. 47%

Residual dividend policy **Answer: d Diff: E**

39. Redwood Systems follows a strict residual dividend policy. The company estimates that its capital expenditures this year will be $40 million, its net income will be $30 million, and its target capital structure is 60 percent equity and 40 percent debt. What will be the company's dividend payout ratio?

a. 80%
b. 60%
c. 40%
d. 20%
e. 15%

Residual dividend policy **Answer: b Diff: E**

40. Wolfpack Multimedia follows a strict residual dividend policy. Wolfpack forecasts that its net income will be $12 million this year. The company has no depreciation expense so its net cash flow is $12 million, and its target capital structure consists of 70 percent equity and 30 percent debt. Wolfpack's capital budget is $10 million. What is the company's dividend payout ratio?

a. 16.67%
b. 41.67%
c. 11.67%
d. 0.00%
e. 58.30%

Residual dividend policy **Answer: e Diff: E**

41. Plato Inc. expects to have net income of $5,000,000 during the next year. Plato's target capital structure is 35 percent debt and 65 percent equity. The company's director of capital budgeting has determined that the optimal capital budget for the coming year is $6,000,000. If Plato follows a residual dividend policy to determine the coming year's dividend, then what is Plato's payout ratio?

a. 38%
b. 42%
c. 58%
d. 33%
e. 22%

Residual dividend policy **Answer: c Diff: E N**

42. Simon Utility expects to have net income of $5 billion this year. The company has an estimated capital budget of $4 billion, and its capital structure consists of 65 percent common equity and 35 percent debt. If the company follows a strict residual dividend policy, what is the company's expected dividend payout ratio?

a. 0.00%
b. 35.00%
c. 48.00%
d. 65.00%
e. 100.00%

Residual dividend policy **Answer: e Diff: E N**

43. Bettis Bus Co. uses the residual dividend model to determine its common dividend payout. This year the company expects its net income to be $2 million, and it expects to have a 25 percent common dividend payout ratio. The company's target common equity ratio is 40 percent, and the firm is financed with only common equity and debt. What is the company's forecasted total capital budget for the year?

a. $1.25 million
b. $2.25 million
c. $2.50 million
d. $3.25 million
e. $3.75 million

Dividend and capital budget **Answer: e Diff: E**

44. Allensworth Motors forecasts that its earnings per share will be $3.00 this year. The company has 500 million shares of stock outstanding. Allensworth estimates that its capital budget for the upcoming year will be $800 million, and it is committed to funding the entire capital budget. The company is also committed to maintaining its dividend of $2.00 per share, and it wants to avoid issuing new common stock. The company's capital structure consists of debt and common stock. Given the above constraints, what portion of the $800 million capital budget will be funded with debt?

a. 53.13%
b. 46.02%
c. 40.00%
d. 6.25%
e. 37.50%

Stock split **Answer: c Diff: E**

45. Albany Motors recently completed a 3-for-1 stock split. Prior to the split, the company had 10 million shares outstanding and its stock price was $150 per share. After the split, the total market value of the company's stock equaled $1.5 billion. What was the price of the company's stock following the stock split?

a. $ 15
b. $ 45
c. $ 50
d. $150
e. $450

Stock split **Answer: e Diff: E**

46. Loiselle Graphics recently announced a 3-for-1 stock split. Prior to the split, the company's stock was trading at $90 per share. The split had no effect on the wealth of the company's investors. What will be the new stock price?

a. $270
b. $ 45
c. $180
d. $ 60
e. $ 30

Stock split **Answer: b Diff: E N**

47. Urlacher Digital's stock is trading at $120 a share. The company plans to announce a 3-for-2 stock split. The stock split is expected to increase the company's market capitalization by 5 percent. What is the expected stock price after the stock split is completed?

a. $189.00
b. $ 84.00
c. $ 80.00
d. $ 50.40
e. $ 75.60

Stock split **Answer: e Diff: E**

48. Tarheel Computing's stock was trading at $150 per share before its recent 3-for-1 stock split. The 3-for-1 split led to a 5 percent increase in Tarheel's market capitalization. (Market capitalization equals the stock price times the number of shares.) What was Tarheel's price after the stock split?

a. $472.50
b. $ 50.00
c. $ 47.62
d. $428.57
e. $ 52.50

Medium:

Residual dividend policy **Answer: d Diff: M**

49. Flavortech Inc. expects EBIT of $2,000,000 for the coming year. The firm's capital structure consists of 40 percent debt and 60 percent equity, and its marginal tax rate is 40 percent. The cost of equity is 14 percent, and the company pays a 10 percent interest rate on its $5,000,000 of long-term debt. One million shares of common stock are outstanding. In its next capital budgeting cycle, the firm expects to fund one large positive NPV project costing $1,200,000, and it will fund this project in accordance with its target capital structure. Assume that new debt will also have an interest rate of 10 percent. If the firm follows a residual dividend policy and has no other projects, what is its expected dividend payout ratio?

a. 82.6%
b. 60.0%
c. 40.0%
d. 17.4%
e. 5.6%

Residual dividend policy **Answer: b Diff: M**

50. Grant Grocers is considering the following independent, average-risk investment projects:

Project	Size of Project	Project IRR
Project V	$1.0 million	12.0%
Project W	1.2 million	11.5
Project X	1.2 million	11.0
Project Y	1.2 million	10.5
Project Z	1.0 million	10.0

The company has a target capital structure that consists of 50 percent debt and 50 percent equity. Its after-tax cost of debt is 8 percent, its cost of equity is estimated to be 13.5 percent, and its net income is $2.5 million. If the company follows a residual dividend policy, what will be its payout ratio?

a. 12%
b. 32%
c. 54%
d. 66%
e. 100%

Residual dividend policy **Answer: c Diff: M**

51. Your company has decided that its capital budget during the coming year will be $20 million. Its optimal capital structure is 60 percent equity and 40 percent debt. Its earnings before interest and taxes (EBIT) are projected to be $34.667 million for the year. The company has $200 million of assets; its average interest rate on outstanding debt is 10 percent; and its tax rate is 40 percent. If the company follows the residual dividend policy and maintains the same capital structure, what will its dividend payout ratio be?

    a. 15%
    b. 20%
    c. 25%
    d. 30%
    e. 35%

Residual dividend and capital budget **Answer: b Diff: M**

52. Brock Brothers wants to maintain its capital structure that consists of 30 percent debt and 70 percent equity. The company forecasts that its net income this year will be $1,000,000. The company follows a residual dividend policy and anticipates a dividend payout ratio of 40 percent. What is the size of the company's capital budget?

    a. $ 600,000
    b. $ 857,143
    c. $1,000,000
    d. $1,428,571
    e. $2,000,000

Residual dividend and capital budget **Answer: d Diff: M**

53. The following facts apply to your company:

Target capital structure:	50% debt; 50% equity.
EBIT:	$200 million.
Assets:	$500 million.
Tax rate:	40%.
Cost of new and old debt:	8%.

    Based on the residual dividend policy, the payout ratio is 60 percent. How large (in millions of dollars) will the capital budget be?

    a. $ 43.2
    b. $ 50.0
    c. $ 64.8
    d. $ 86.4
    e. $108.0

Stock repurchase **Answer: c Diff: M**

54. Makeover Inc. believes that at its current stock price of $16.00 the firm is undervalued in the market. Makeover plans to repurchase 2.4 million of its 20 million shares outstanding. The firm's managers expect that they can repurchase the entire 2.4 million shares at the expected equilibrium price after repurchase. The firm's current earnings are $44 million. If management's assumptions hold, what is the expected per-share market price after repurchase?

    a. $16.00
    b. $17.26
    c. $18.18
    d. $20.00
    e. $24.40

CHAPTER 14
ANSWERS AND SOLUTIONS

1. Dividends versus capital gains **Answer: d Diff: E**

2. Dividends, DRIPs, and repurchases **Answer: d Diff: E**

Statement a is false; repurchases are taxed as capital gains. Statement b is false; investors still have to pay income taxes on reinvested dividends. Statement c is false; an increase in dividends is usually a positive signal. Statement d is true.

3. Dividend payout **Answer: a Diff: E**

4. Dividend payout **Answer: c Diff: E**

5. Dividend theories **Answer: e Diff: E**

Statement e is true; the others are false. MM developed the dividend irrelevance theory. Reducing the payout would have the effect of increasing the cost of equity if the bird-in-the-hand theory holds. The tax preference theory suggests that a company can increase its stock price by reducing its payout ratio. The residual dividend policy should be followed to determine the long-run target payout ratio. If followed year to year, dividends would fluctuate.

6. Dividend theory and policy **Answer: c Diff: E**

Statement c is true; the others are false. The bird-in-the-hand theory implies that a company can reduce its WACC and increase its stock price by increasing its dividend payout.

7. Optimal dividend policy **Answer: e Diff: E**

8. Residual dividend policy **Answer: a Diff: E**

Statement a is true. If net income increases, and all else is equal (that is, the same number of projects are available to invest in as before, etc.), the company will have more money left over after making its investments to pay out as dividends. Statement b is false. If the company increases the proportion of equity financing in its target capital structure, it will need to either increase the proportion of equity (by increasing retained earnings, therefore, leaving less money for dividends) or reduce the proportion of debt it uses (meaning it will have less debt to finance new projects and will need more of its retained earnings to make investments). Statement c is false. If the company has more profitable projects, this will leave less money for dividends.

9. Stock split **Answer: e Diff: E**

10. Stock split **Answer: b Diff: E**

With a 2-for-1 stock split, the price is (roughly) halved and the number of shares doubles.

11. Stock repurchases and DRIPs **Answer: a Diff: E**

Statement a is true. If a company repurchases stock instead of paying dividends, the existing shares will go up in value. This capital gain is taxed at a lower rate than dividends, which are taxed at ordinary income tax rates. Statement b is false. As soon as the dividend is paid, the taxes due are calculated. The IRS doesn't care if the investor reinvests them or buys a plane with them. Statement c is false. If a company repurchases its stock, it reduces assets (it uses cash to buy back the shares) and reduces equity. The amount of debt remains unchanged; however, since equity has decreased the proportion of debt increases. Statement d is false. If a company believes the stock is overvalued, it will not repurchase shares because it will end up paying too much for the shares. If the company has many profitable projects, it will want to invest in those and not use its cash to repurchase shares. Statement e is false. An open-market DRIP means that dividends are used to buy shares from someone else on the secondary market. The total number of shares outstanding does not change.

12. Repurchases, DRIPs, and stock splits **Answer: e Diff: E**

Dividend payments are taxed at the personal tax rate. Stock repurchases end up producing capital gains, which are taxed at a lower rate than the personal tax rate. Therefore, statement a is false. Dividend reinvestment plans (DRIPs) are not a way to circumvent the IRS. The company really paid a dividend, which is taxed like ordinary income. You chose to reinvest it. The IRS doesn't care whether you bought more stock or bought a new car. You still receive the income and you still pay income taxes on it. Therefore, statement b is false. If there is a 2-for-1 stock split, this means that for every share you used to own, you now own two. In order for your net wealth to remain unchanged, the stock price would have to fall by half, not double. Therefore, statement c is false. Since statements a, b, and c are false, the correct choice is statement e.

13. Dividend policy and stock repurchases **Answer: d Diff: E N**

The correct answer is statement d. Since dividends are exposed to double taxation, statement a is incorrect. Statement b is also incorrect. Just the opposite will occur. As the number of a firm's investment opportunities increase, its payout will tend to decrease. Statement c is also incorrect. The clientele effect suggests that there are investors with different dividend preferences. So, even though a firm adopts a policy less than a strict residual dividend model, investors exist who will still be attracted to the firm's policy. Finally, statement e is incorrect. Stock repurchases may not be taxed at all, whereas dividends are always taxed as ordinary income to the investor. Therefore, statement d is the correct choice.

14. Miscellaneous dividend concepts **Answer: c Diff: E**

Statement c is true; the others are false. If a 2-for-1 stock split is initiated, a firm's stock price should decrease by one-half its original price. Repurchases allow shareholders to obtain capital gains by selling their stock, which are taxed at a lower rate than dividends. Since repurchase announcements are viewed as positive signals by investors, the stock price would tend to increase.

15. Miscellaneous dividend concepts **Answer: e Diff: E**

Statement a is false; the theory states that investors prefer dividends because they are more certain about receiving dividends than they are about capital gains. In addition, the statement is false because capital gains are taxed more favorably than dividends. Statement b is false because stock repurchases decrease the number of outstanding shares. Statement c is false. If a company attracts a particular clientele, it would want to keep that clientele. Changing its dividends frequently would make it impossible for any one clientele to be happy. Therefore, the correct choice is statement e.

16. Miscellaneous dividend concepts **Answer: e Diff: E**

Statement e is correct. The tax preference theory suggests that individuals prefer capital gains to dividends due to the preferential tax treatment for capital gains. A residual dividend policy leads to an unstable dividend payment. The residual policy is used only to develop a long-run dividend payout policy. A firm with a large number of investment opportunities and a small amount of cash would have a low dividend payout.

17. Dividend theory **Answer: a Diff: M**

Statement a is true; the other statements are false. The bird-in-the-hand theory states that investors prefer dividends; therefore, if dividends are increased, the cost of equity decreases. The signaling theory states that dividend decreases are "bad news", so stock price will decrease. Paying a consistent percentage of net income will result in fluctuating dividends because net income fluctuates. The clientele effect states that investors prefer a stock that has a high or low steady dividend, but not a fluctuating one.

18. Dividend policy **Answer: b Diff: M**

19. Dividend policy **Answer: c Diff: M**

Statement c is true; the other statements are false. Investors would prefer their distributions in the form of capital gains since they are made relatively more attractive with a cut in the capital gains tax rate. A residual policy does not stabilize dividend payouts. A residual policy involves paying dividends only after all profitable projects have been undertaken. An increase in the availability of these projects would leave less available for dividends after projects are financed.

20. Dividend policy **Answer: a Diff: M**

Statement a is true; the other statements are false. The clientele effect suggests that firms should change dividend policies infrequently. The residual dividend policy would make it difficult for investors to reliably predict dividends and form clienteles.

21. Residual dividend policy **Answer: c Diff: M**

Statement c is true; the other statements are false. The residual dividend policy implies that dividends should be paid only out of "leftover" earnings. The sale of new common stock implies that the firm has already used all retained earnings. Therefore, no dividends would have been paid.

22. Residual dividend policy **Answer: b Diff: M**

23. Dividends versus capital gains **Answer: b Diff: M**

24. Taxes, DRIPs, and stock splits **Answer: d Diff: M R**

Statements b and c are true; therefore, d is the correct answer. The dividends in a DRIP are still taxed at the personal income tax rate; this would be a bad investment for an individual in a high tax bracket. Stock splits are good signals because management believes the stock price will continue to increase. The increases in the stock price will be taxed at the lower long-term capital gains tax rate when the stock is sold. The investor will be taxed at the lower long-term capital gains rate if she tenders her shares in a stock repurchase.

25. Taxes, DRIPs, and dividends **Answer: e Diff: M**

Statement e is true. New-stock DRIPs increase the equity of a firm. Investors receive new shares with a stock dividend, but don't incur any taxes unless they sell the shares later for a gain. Stockholders do pay taxes on dividends reinvested.

26. Stock repurchases and stock splits **Answer: e Diff: M**

27. Miscellaneous dividend concepts **Answer: a Diff: M**

Firms often repurchase shares to enable them to change their capital structure more quickly than they could do so normally. Also, firms repurchase shares to distribute cash to those stockholders desiring to sell their stock. Stockholders receive capital gains, and long-term capital gains are taxed at lower rates than cash dividends. Thus, for individuals in high-tax brackets capital gains would be preferred to cash dividends. Consequently, tax considerations play a key role in the decision to repurchase stock versus to pay more cash dividends. The other statements are false.

28. Miscellaneous dividend concepts **Answer: e Diff: M**

29. Miscellaneous dividend concepts **Answer: e Diff: M**

Statement e is the correct answer. An open-market dividend reinvestment plan buys existing shares in the market. No new additional shares are issued. Stock repurchases increase financial leverage by reducing equity. With a 2-for-1 split, a firm's stock price would roughly halve.

30. Miscellaneous dividend concepts **Answer: a Diff: M**

Statement a is true; the other statements are false. A 3-for-1 split results in an increase in the number of shares outstanding and a fall in the price per share. The firm would increase its debt ratio by repurchasing some of its own shares.

31. Miscellaneous dividend concepts **Answer: d Diff: M**

Statements b and c are true; therefore, statement d is the correct choice. A dividend increase leading to an increase in stock price is consistent with signaling also.

32. Miscellaneous dividend concepts **Answer: a Diff: M**

The correct answer is a. Of the statements, only statement a will result in new equity for the firm.

33. Miscellaneous concepts **Answer: b Diff: M**

Statement a is false. Since Firm M has less business risk than N, it is likely to have a higher debt ratio than N because M can take on more financial risk. Statement b is true. Firm M will have a higher dividend payout ratio than N since it does not need the funds for investment. Statement c is false. If the corporate tax rate increases, debt financing will become more attractive to both firms.

34. Residual dividend policy **Answer: b Diff: E**

The amount of new investment that must be financed with equity is: $1,200,000 × 40% = $480,000. Since the firm has $600,000 of net income only $120,000 will be left for dividends. This means the payout ratio is $120,000/$600,000 = 20%.

35. Residual dividend policy **Answer: e Diff: E**

$5,000,000 × 0.3 = $1,500,000 of retained earnings needed to fund the capital budget. $4,500,000 - $1,500,000 = $3,000,000 of net income available for dividends. Dividend payout ratio = $3,000,000/$4,500,000 = 0.6667, or 66.67%.

36. Residual dividend policy **Answer: b Diff: E**

Equity requirement = 0.6($1,200,000) = $720,000.

Expected NI	$800,000
Equity requirement	720,000
Available for dividends	$ 80,000

Payout ratio = $80,000/$800,000 = 0.10 = 10%.

37. Residual dividend policy **Answer: c Diff: E**

Out of the $3 million capital budget, 65 percent must be funded by equity, so (0.65)($3,000,000) = $1,950,000 of the capital budget must be funded from retained earnings. Earnings available to be paid out as dividends = $5,000,000 - $1,950,000 = $3,050,000. Payout ratio = $3,050,000/$5,000,000 = 61%.

38. Residual dividend policy **Answer: a Diff: E**

Since the capital budget is $250 million and the capital structure is 50% equity and 50% debt, $125 million of the capital budget will come from debt and $125 million will come from equity. Subtracting the $125 million (needed for the equity portion) from NI, leaves you with $375 million to pay out as dividends. $375/$500 is a 75% payout ratio.

39. Residual dividend policy **Answer: d Diff: E**

Step 1: Determine the equity portion that will be used to fund capital expenditures:
Capital expenditures are $40 million. Forty percent of this will be funded by debt and 60 percent by equity. The equity portion used to fund capital expenditures = 0.6 × $40 million = $24 million.

Step 2: Determine the amount of net income left to pay dividends:
If $24 million of net income is used to pay for capital projects, there will be $6 million of net income left to pay dividends, $30 - $24 = $6 million.

Step 3: Calculate the dividend payout ratio:
Payout ratio = Div/NI
= $6/$30
= 20%.

40. Residual dividend policy **Answer: b Diff: E**

Facts given: NI = $12 million; NCF = $12 million; Capital budget = $10 million; Target capital structure: 70% equity, 30% debt.

Of this $10 million, 70% will be funded with equity ($7 million), and 30% with debt ($3 million). Therefore, the company will use $7 million of its net income towards its capital budget. This leaves $5 million ($12 million - $7 million) for dividends.

Payout ratio = Div/NI
= $5 million/$12 million
= 41.67%.

41. Residual dividend policy **Answer: e Diff: E**

If the firm's optimal capital budget requires $6,000,000 in financing, then, to stay at its target capital structure, Plato will retain earnings of $6,000,000 × 0.65 = $3,900,000. This leaves $5,000,000 - $3,900,000 = $1,100,000 available for dividends. Thus, Plato's payout ratio is $1,100,000/$5,000,000 = 0.22 = 22%.

42. Residual dividend policy **Answer: c Diff: E N**

The capital budget is $4 billion. Of that budget, 65 percent will be paid for with common equity to keep the capital structure the same. The equity will come from additions to retained earnings or net income.

0.65 × $4 billion capital budget = $2.6 billion.

This leaves $5 - $2.6 = $2.4 billion of net income to pay as dividends.

$$\text{Payout ratio} = \frac{\$2.4\ \text{billion}}{\$5.0\ \text{billion}} = 48\%.$$

43. Residual dividend policy **Answer: e Diff: E N**

NI = $2,000,000; Dividend Payout = 25%; Common Equity = 40%; and Debt = 60%.

The addition to retained earnings = 75% × $2,000,000 = $1,500,000. The forecasted total capital budget is Addition to RE/% of Common Equity = $1,500,000/0.40 = $3,750,000.

44. Dividend and capital budget **Answer: e Diff: E**

Retained earnings are ($3.00 - $2.00) × 500 million = $500 million. Therefore, the percentage of the capital budget that is funded with debt is: ($800 – $500)/$800 = 0.375 or 37.5%.

45. Stock split **Answer: c Diff: E**

The shareholder gets three shares for every one he/she used to have, so now he/she has three times as many shares. In order to have the same amount of wealth, the value of each share must fall to 1/3 of what it was before. Therefore, the new per share value is $150/3 = $50. Before the split, a shareholder with one share had $150 of stock. Now, after the split, a shareholder with three shares will have 3 × $50 = $150 of stock.

46. Stock split **Answer: e Diff: E**

1 share of stock will now become 3 shares, but the total dollar value must remain the same. Therefore, the new stock price is $90/3 = $30.

47. Stock split **Answer: b Diff: E N**

For every two shares you own, you will receive three shares. So, if you had two shares with a total value of 2 × $120 = $240, now you will have three shares with a value of $240 as a direct effect of the split. However, in this case the announcement of the split will send prices up by 5 percent. (Splits sometimes signal good information about the company's prospects.) So the price will rise by 5 percent because of the signaling effect, so the share price is $240/3 × 1.05 = $84.

48. Stock split **Answer: e Diff: E**

If the stock splits 3-for-1, there will be 3 shares now for each one that used to exist. If the number of shares triples, the price of each share would be 1/3 of what it was before. Therefore, the price would immediately be 1/3 of $150, or $50. However, the stock split also led to a 5 percent increase in the stock price. Therefore, the new price would be $50 × 1.05 = $52.50.

49. Residual dividend policy **Answer: d Diff: M**

EBIT	$2,000,000	
Int	548,000	($5,480,000 debt × 10% coupon)
EBT	$1,452,000	
Taxes	580,800	($1,452,000 EBT × 40% tax rate)
NI	$ 871,200	
Project funding	720,000	$1,200,000 project funded:
Residual earnings		0.60 equity = $720,000
payable as dividends	$ 151,200	0.40 debt = $480,000

Dividend payout ratio = $151,200/$871,200 = 17.36% ≈ 17.4%.

50. Residual dividend policy **Answer: b Diff: M**

The company's WACC is 8%(0.5) + 13.5%(0.5) = 10.75%. Comparing the WACC with the project IRRs reveals that the company will undertake projects V, W, and X. Total financing costs for these projects is $3,400,000. Of this amount, 0.5($3,400,000) = $1,700,000 will be financed from retained earnings. Thus, $2,500,000 - $1,700,000 = $800,000 will be available for dividends. The payout ratio is then $800,000/$2,500,000 = 32%.

51. Residual dividend policy **Answer: c Diff: M**

Capital budget = $20 million.
Optimal capital structure: 60% equity, 40% debt.
EBIT = $34.667 million.
Assets = $200 million.
k_d = 10%; T = 40%; Dividend payout = ?
Debt = 0.40($200 million) = $80 million.
Interest = 0.10($80 million) = $8 million.

EBIT	$34.667
Int	8.000
EBT	$26.667
Taxes (40%)	10.667
NI	$16.000

Capital budget = $20 million.
Equity needed = 0.60($20 million) = $12 million.

NI	$16
Equity needed	12
Amount remaining for dividend	$ 4

Dividend payout = $4/$16 = 25%.

52. Residual dividend and capital budget **Answer: b Diff: M**

Since the company expects to pay out 40% of net income or $400,000, it must expect to have $600,000 of retained earnings available for capital investment. Given that the firm will finance new investment with 70% equity and 30% debt, $600,000 must represent 70 percent of the firm's capital budget, that is, $600,000 = (0.7)CB or CB = $857,143.

53. Residual dividend and capital budget **Answer: d Diff: M**

Debt = 0.5(Assets) = 0.5($500) = $250 million.
Interest = 0.08($250) = $20 million.

EBT = EBIT - I
= $200 - $20 = $180.

NI = $180 - Taxes
= $180 - $180(0.4) = 0.6($180) = $108 million.

Dividends = $108(0.6) = $64.80 million.
Retained earnings = NI - D = $108.00 - $64.80 = $43.20 million.

Half of the capital budget will be debt, half common equity from retained earnings, so the capital budget will be:

Capital budget = $\frac{\$43.20}{0.5}$ = $86.40 million.

54. Stock repurchase **Answer: c Diff: M**

Step 1: Current EPS = \$44 million/20 million = \$2.20 per share.

Step 2: P/E ratio = \$16.00/\$2.20 = 7.27x.

Step 3: EPS after repurchase = \$44 million/17.6 million = \$2.50.

Step 4: Expected market price after repurchase:
$7.27 \times \$2.50 = \$18.175 = \$18.18$ per share.