18.9 SUMMARY AND CONCLUSIONS

In this chapter, we first discussed the types of dividends and how they are paid. We then defined dividend policy and examined whether or not dividend policy matters. Next, we illustrated how a firm might establish a dividend policy and described an important alternative to cash dividends, a share repurchase.

In covering these subjects, we saw that:

1. Dividend policy is irrelevant when there are no taxes or other imperfections because shareholders can effectively undo the firm's dividend strategy. Shareholders who receive dividends greater than desired can reinvest the excess. Conversely, shareholders who receive dividends smaller than desired can sell off extra shares of stock.
2. Individual shareholder income taxes and new issue flotation costs are real-world considerations that favor a low-dividend payout. With taxes and new issue costs, the firm should pay out dividends only after all positive NPV projects have been fully financed.
3. There are groups in the economy that may favor a high payout. These include many large institutions such as pension plans. Recognizing that some groups prefer a high payout and some prefer a low payout, the clientele effect argument supports the idea that dividend policy responds to the needs of stockholders. For example, if 40 percent of the stockholders prefer low dividends and 60 percent of the stockholders prefer high dividends, approximately 40 percent of companies will have a low-dividend payout, and 60 percent will have a high payout. This sharply reduces the impact of any individual firm's dividend policy on its market price.
4. A firm wishing to pursue a strict residual dividend payout will have an unstable dividend. Dividend stability is usually viewed as highly desirable. We therefore discussed a compromise strategy that provides for a stable dividend and appears to be quite similar to the dividend policies many firms follow in practice.
5. A stock repurchase acts much like a cash dividend, but has a significant tax advantage. Stock repurchases are therefore a very useful part of overall dividend policy.

To close out our discussion of dividends, we emphasize one last time the difference between dividends and dividend policy. Dividends are important, because the value of a share of stock is ultimately determined by the dividends that will be paid. What is less clear is whether or not the time pattern of dividends (more now versus more later) matters. This is the dividend policy question, and it is not easy to give a definitive answer to it.

Chapter Review and Self-Test Problems

18.1 Residual Dividend Policy The Readata Corporation practices a strict residual dividend policy and maintains a capital structure of 60 percent debt, 40 percent equity. Earnings for the year are $5,000. What is the maximum amount of capital spending possible without selling new equity? Suppose that planned investment outlays for the coming year are $12,000. Will Readata be paying a dividend? If so, how much?

18.2 **Repurchase versus Cash Dividend** Gothic Corporation is deciding whether to pay out \$500 in excess cash in the form of an extra dividend or a share repurchase. Current earnings are \$2.50 per share, and the stock sells for \$25. The market value balance sheet before paying out the \$500 is as follows:

Market Value Balance Sheet (before paying out excess cash)			
Excess cash	\$ 500	Debt	\$ 500
Other assets	2,500	Equity	2,500
Total	\$3,000	Total	\$3,000

Evaluate the two alternatives in terms of the effect on the price per share of the stock, the EPS, and the PE ratio.

Answers to Chapter Review and Self-Test Problems

18.1 Readata has a debt-equity ratio of .60/.40 = 1.50. If the entire \$5,000 in earnings were reinvested, then \$5,000 × 1.50 = \$7,500 in new borrowing would be needed to keep the debt-equity ratio unchanged. Total new financing possible without external equity is thus \$5,000 + 7,500 = \$12,500.

If planned outlays are \$12,000, then this amount will be financed with 40 percent equity. The needed equity is thus \$12,000 × .40 = \$4,800. This is less than the \$5,000 in earnings, so a dividend of \$5,000 − 4,800 = \$200 will be paid.

18.2 The market value of the equity is \$2,500. The price per share is \$25, so there are 100 shares outstanding. The cash dividend would amount to \$500/100 = \$5 per share. When the stock goes ex dividend, the price will drop by \$5 per share to \$20. Put another way, the total assets decrease by \$500, so the equity value goes down by this amount to \$2,000. With 100 shares, the new stock price is \$20 per share. After the dividend, EPS will be the same, \$2.50, but the PE ratio will be \$20/2.50 = 8 times.

With a repurchase, \$500/25 = 20 shares will be bought up, leaving 80. The equity will again be worth \$2,000 total. With 80 shares, this is \$2,000/80 = \$25 per share, so the price doesn't change. Total earnings for Gothic must be \$2.50 × 100 = \$250. After the repurchase, EPS will be higher at \$250/80 = \$3.125. The PE ratio, however, will be \$25/3.125 = 8 times.

Concepts Review and Critical Thinking Questions

1. **Dividend Policy Irrelevance** How is it possible that dividends are so important, but, at the same time, dividend policy is irrelevant?
2. **Stock Repurchases** What is the impact of a stock repurchase on a company's debt ratio? Does this suggest another use for excess cash?
3. **Dividend Policy** What is the chief drawback to a strict residual dividend policy? Why is this a problem? How does a compromise policy work? How does it differ from a strict residual policy?
4. **Dividend Chronology** On Tuesday, December 8, Hometown Power Co.'s board of directors declares a dividend of 75 cents per share payable on Wednesday, January 17, to shareholders of record as of Wednesday, January 3. When is

the ex-dividend date? If a shareholder buys stock before that date, who gets the dividends on those shares, the buyer or the seller?

5. **Alternative Dividends** Some corporations, like one British company that offers its large shareholders free crematorium use, pay dividends in kind (that is, offer their services to shareholders at below-market cost). Should mutual funds invest in stocks that pay these dividends in kind? (The fundholders do not receive these services.)

6. **Dividends and Stock Price** If increases in dividends tend to be followed by (immediate) increases in share prices, how can it be said that dividend policy is irrelevant?

7. **Dividends and Stock Price** Last month, Central Virginia Power Company, which had been having trouble with cost overruns on a nuclear power plant that it had been building, announced that it was "temporarily suspending payments due to the cash flow crunch associated with its investment program." The company's stock price dropped from $28.50 to $25 when this announcement was made. How would you interpret this change in the stock price (that is, what would you say caused it)?

8. **Dividend Reinvestment Plans** The DRK Corporation has recently developed a dividend reinvestment plan, or DRIP. The plan allows investors to reinvest cash dividends automatically in DRK in exchange for new shares of stock. Over time, investors in DRK will be able to build their holdings by reinvesting dividends to purchase additional shares of the company.

   Over 1,000 companies offer dividend reinvestment plans. Most companies with DRIPs charge no brokerage or service fees. In fact, the shares of DRK will be purchased at a 10 percent discount from the market price.

   A consultant for DRK estimates that about 75 percent of DRK's shareholders will take part in this plan. This is somewhat higher than the average.

   Evaluate DRK's dividend reinvestment plan. Will it increase shareholder wealth? Discuss the advantages and disadvantages involved here.

9. **Dividend Policy** For initial public offerings of common stock, 2000 was a very big year, with over $80.6 billion raised by the process. Relatively few of the 452 firms involved paid cash dividends. Why do you think that most chose not to pay cash dividends?

10. **Investment and Dividends** The Phew Charitable Trust pays no taxes on its capital gains or on its dividend income or interest income. Would it be irrational for it to have low-dividend, high-growth stocks in its portfolio? Would it be irrational for it to have municipal bonds in its portfolio? Explain.

Questions and Problems

Basic
(Questions 1–13)

1. **Dividends and Taxes** Caputo, Inc., has declared a $5.00 per share dividend. Suppose capital gains are not taxed, but dividends are taxed at 34 percent. New IRS regulations require that taxes be withheld at the time the dividend is paid. Caputo sells for $80 per share, and the stock is about to go ex dividend. What do you think the ex-dividend price will be?

2. **Stock Dividends** The owners' equity accounts for Octagon International are shown here:

Basic
(*continued*)

Common stock ($1 par value)	$ 10,000
Capital surplus	150,000
Retained earnings	552,500
Total owners' equity	$712,500

a. If Octagon stock currently sells for $20 per share and a 10 percent stock dividend is declared, how many new shares will be distributed? Show how the equity accounts would change.

b. If Octagon declared a 25 percent stock dividend, how would the accounts change?

3. **Stock Splits** For the company in Problem 2, show how the equity accounts will change if:

a. Octagon declares a five-for-one stock split. How many shares are outstanding now? What is the new par value per share?

b. Octagon declares a one-for-four reverse stock split. How many shares are outstanding now? What is the new par value per share?

4. **Stock Splits and Stock Dividends** Rooster Rocks Corporation (RRC) currently has 100,000 shares of stock outstanding that sell for $70 per share. Assuming no market imperfections or tax effects exist, what will the share price be after:

a. RRC has a five-for-three stock split?

b. RRC has a 15 percent stock dividend?

c. RRC has a 42.5 percent stock dividend?

d. RRC has a four-for-seven reverse stock split?

e. Determine the new number of shares outstanding in parts (*a*) through (*d*).

5. **Regular Dividends** The balance sheet for Apple Pie Corp. is shown here in market value terms. There are 4,000 shares of stock outstanding.

Market Value Balance Sheet

Cash	$ 15,000	Equity	$150,000
Fixed assets	135,000		
Total	$150,000	Total	$150,000

The company has declared a dividend of $1.25 per share. The stock goes ex dividend tomorrow. Ignoring any tax effects, what is the stock selling for today? What will it sell for tomorrow? What will the balance sheet look like after the dividends are paid?

6. **Share Repurchase** In the previous problem, suppose Apple Pie has announced it is going to repurchase $3,000 worth of stock. What effect will this transaction have on the equity of the firm? How many shares will be outstanding? What will the price per share be after the repurchase? Ignoring tax effects, show how the share repurchase is effectively the same as a cash dividend.

7. **Stock Dividends** The market value balance sheet for Inbox Manufacturing is shown here. Inbox has declared a 20 percent stock dividend. The stock goes ex dividend tomorrow (the chronology for a stock dividend is similar to that for a cash dividend). There are 10,000 shares of stock outstanding. What will the ex dividend price be?

Basic
(continued)

Market Value Balance Sheet			
Cash	$180,000	Debt	$150,000
Fixed assets	320,000	Equity	350,000
Total	$500,000	Total	$500,000

8. **Stock Dividends** The company with the common equity accounts shown here has declared an 8 percent stock dividend at a time when the market value of its stock is $20 per share. What effects on the equity accounts will the distribution of the stock dividend have?

Common stock ($1 par value)	$ 350,000
Capital surplus	1,650,000
Retained earnings	3,000,000
Total owners' equity	$5,000,000

9. **Stock Splits** In the previous problem, suppose the company instead decides on a four-for-one stock split. The firm's 60-cent per share cash dividend on the new (post-split) shares represents an increase of 10 percent over last year's dividend on the pre-split stock. What effect does this have on the equity accounts? What was last year's dividend per share?

10. **Residual Dividend Policy** Soprano, Inc., a litter recycling company, uses a residual dividend policy. A debt-equity ratio of .80 is considered optimal. Earnings for the period just ended were $900, and a dividend of $420 was declared. How much in new debt was borrowed? What were total capital outlays?

11. **Residual Dividend Policy** Joe C Corporation has declared an annual dividend of $0.50 per share. For the year just ended, earnings were $8 per share.
    a. What is Joe C's payout ratio?
    b. Suppose Joe C has seven million shares outstanding. Borrowing for the coming year is planned at $18 million. What are planned investment outlays assuming a residual dividend policy? What target capital structure is implicit in these calculations?

12. **Residual Dividend Policy** Red Zeppelin Corporation follows a strict residual dividend policy. Its debt-equity ratio is 3.
    a. If earnings for the year are $140,000, what is the maximum amount of capital spending possible with no new equity?
    b. If planned investment outlays for the coming year are $770,000, will Red Zeppelin pay a dividend? If so, how much?
    c. Does Red Zeppelin maintain a constant dividend payout? Why or why not?

13. **Residual Dividend Policy** Pamela Rock (PR), Inc., predicts that earnings in the coming year will be $45 million. There are 12 million shares, and PR maintains a debt-equity ratio of 2.
    a. Calculate the maximum investment funds available without issuing new equity and the increase in borrowing that goes along with it.
    b. Suppose the firm uses a residual dividend policy. Planned capital expenditures total $60 million. Based on this information, what will the dividend per share be?

Basic (*continued*)

c. In part (*b*), how much borrowing will take place? What is the addition to retained earnings?

d. Suppose PR plans no capital outlays for the coming year. What will the dividend be under a residual policy? What will new borrowing be?

Intermediate (Questions 14–16)

14. **Homemade Dividends** You own 1,000 shares of stock in Kiessling Corporation. You will receive a 60-cent per share dividend in one year. In two years, Kiessling will pay a liquidating dividend of $30 per share. The required return on Kiessling stock is 15 percent. What is the current share price of your stock (ignoring taxes)? If you would rather have equal dividends in each of the next two years, show how you can accomplish this by creating homemade dividends. Hint: Dividends will be in the form of an annuity.

15. **Homemade Dividends** In the previous problem, suppose you want only $200 total in dividends the first year. What will your homemade dividend be in two years?

16. **Stock Repurchase** McNair Corporation is evaluating an extra dividend versus a share repurchase. In either case, $4,000 would be spent. Current earnings are $.90 per share, and the stock currently sells for $35 per share. There are 150 shares outstanding. Ignore taxes and other imperfections in answering the first two questions.

a. Evaluate the two alternatives in terms of the effect on the price per share of the stock and shareholder wealth.

b. What will be the effect on McNair's EPS and PE ratio under the two different scenarios?

c. In the real world, which of these actions would you recommend? Why?

Challenge (Questions 17–18)

17. **Expected Return, Dividends, and Taxes** The Gecko Company and the Gordon Company are two firms whose business risk is the same but that have different dividend policies. Gecko pays no dividend, whereas Gordon has an expected dividend yield of 8 percent. Suppose the capital gains tax rate is zero, whereas the income tax rate is 35 percent. Gecko has an expected earnings growth rate of 20 percent annually, and its stock price is expected to grow at this same rate. If the aftertax expected returns on the two stocks are equal (because they are in the same risk class), what is the pretax required return on Gordon's stock?

18. **Dividends and Taxes** As discussed in the text, in the absence of market imperfections and tax effects, we would expect the share price to decline by the amount of the dividend payment when the stock goes ex dividend. Once we consider the role of taxes, however, this is not necessarily true. One model has been proposed that incorporates tax effects into determining the ex-dividend price:[7]

$$(P_0 - P_X)/D = (1 - T_P)/(1 - T_G)$$

where P_0 is the price just before the stock goes ex, P_X is the ex-dividend share price, D is the amount of the dividend per share, T_P is the relevant marginal personal tax rate, and T_G is the effective marginal tax rate on capital gains.

a. If $T_P = T_G = 0$, how much will the share price fall when the stock goes ex?

b. If $T_P = 28$ percent and $T_G = 0$, how much will the share price fall?

c. If $T_P = 35$ percent and $T_G = 28$ percent, how much will the share price fall?

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[7] N. Elton and M. Gruber, "Marginal Stockholder Tax Rates and the Clientele Effect," *Review of Economics and Statistics* 52 (February 1970).

Challenge (*continued*)

d. Suppose the only owners of stock are corporations. Recall that corporations get at least a 70 percent exemption from taxation on the dividend income they receive, but they do not get such an exemption on capital gains. If the corporation's income and capital gains tax rates are both 35 percent, what does this model predict the ex-dividend share price will be?

e. What does this problem tell you about real-world tax considerations and the dividend policy of the firm?

S&P Problem

1. Dividend Payouts Use the annual financial statements for General Mills (GIS), Boston Beer (SAM), and US Steel (X) to find the dividend payout ratio for each company for the last three years. Why would these companies pay out a different percentage of income as dividends? Is there anything unusual about the dividends paid by US Steel? How is this possible?

What's On the Web?

18.1 Dividend Reinvestment Plans As we mentioned in the chapter, dividend reinvestment plans (DRIPs) permit shareholders to automatically reinvest cash dividends in the company. To find out more about DRIPs go to www.fool.com, follow the "Fool's School" link and then the "DRIP Investing" link. What are the advantages Motley Fool lists for DRIPs? What are the different types of DRIPs? What is a Direct Purchase Plan? How does a Direct Purchase Plan differ from a DRIP?

18.2 Dividends Go to www.companyboardroom.com and scroll down until you see the section titled Today's Highlighted Dividends and follow the "Full List" link. How many companies went "ex" on this day? What is the largest declared dividend? For the stocks going "ex" today, what is the longest time until the payable date?

18.3 Stock Splits Go to www.companyboardroom.com and scroll down until you see the section titled Today's Highlighted Splits and follow the "Full List" link. How many stock splits are listed? How many are reverse splits? What is the largest split and the largest reverse split in terms of shares? Pick a company and follow the link. What type of information do you find?

18.4 Dividend Yields Which stock has the highest dividend yield? To answer this (and more), go to www.amex.com and follow the "Screening" link. Use the minimum value box for "Annual Dividend Yield" to find out how many stocks have a dividend yield above 3 percent. Above 5 percent? Now use the "Annual Dividend Amount" to find out how many stocks have an annual dividend above $2. Above $4?

18.5 Stock Splits How many times has Procter & Gamble stock split? Go to the web page at www.pg.com, and you will find a pull-down menu listed under "Investing." Follow the "Stock History" link, then the "Stock Split History." When did Procter & Gamble stock first split? What was the split? When was the most recent stock split?

Spreadsheet Templates 18–5, 18–11, 18–16