

# Dividends and Dividend Policy

# 14



In July 2004, Microsoft was sitting on a cash hoard of nearly \$60 billion. Under growing pressure from shareholders, the company announced it was going to use some of that cash to (1) increase the annual dividend to \$0.32 per share, (2) repurchase about \$30 billion of the company's stock over the next four years, and (3) make a special dividend payment of \$3 per share. Microsoft has over 10 billion shares outstanding, so the special dividend payment totaled a remarkable \$32.6 billion, making it the largest corporate cash disbursement in history.

**THIS CHAPTER WILL PAY YOU SIGNIFICANT DIVIDENDS IF YOU STUDY IT CLOSELY. WHEN YOU ARE FINISHED, YOU SHOULD HAVE A GOOD UNDERSTANDING OF:**

- Dividend types and how dividends are paid.
- The issues surrounding dividend policy decisions.
- The difference between cash and stock dividends.
- Why share repurchases are an alternative to dividends.

To put the size of Microsoft's special dividend in perspective, the total dividends paid by all the companies in the S&P 500 for the year totaled \$213.6 billion. This means Microsoft's special dividend amounted to about 15 percent of all dividends paid by 500 of the largest companies for the year. Still not impressed? Well, consider that when the dividend was sent to investors in December, personal income in the United States rose 3.7 percent. Without the dividend, personal income rose only .3 percent. This means the dividend payment accounted for over 3 percent of all personal income in the United States for the month!

This chapter is about dividend policy. Going back to Chapter 7, we saw that the value of a share of stock depends on all the future dividends that will be paid to shareholders. In that analysis, we took the future stream of dividends as given. What we now examine is how corporations decide on the size

and timing of dividend payments. What we would like to find out is how to establish an optimal dividend policy, meaning a dividend policy that maximizes the stock price. What we discover, among other things, is that it is not at all clear how to do this, or even if there is such a thing as an optimal dividend policy!

**D**ividend policy is an important subject in corporate finance, and dividends are a major cash outlay for many corporations. At first glance, it may seem obvious that a firm would always want to give as much as possible back to its shareholders by paying dividends. It might seem equally obvious, however, that a firm can always invest the money for its shareholders instead of paying it out. The heart of the dividend policy question is just this: Should the firm pay out money to its shareholders, or should the firm take that money and invest it for its shareholders?

It may seem surprising, but much research and economic logic suggest that dividend policy doesn't matter. In fact, it turns out that the dividend policy issue is much like the capital structure question. The important elements are not difficult to identify, but the interactions between those elements are complex and no easy answer exists.

Dividend policy is controversial. Many implausible reasons are given for why dividend policy might be important, and many of the claims made about dividend policy are economically illogical. Even so, in the real world of corporate finance, determining the most appropriate dividend policy is considered an important issue. It could be that financial managers who worry about dividend policy are wasting time, but it could also be true that we are missing something important in our discussions.

In part, all discussions of dividends are plagued by the “two-handed lawyer” problem. President Truman, while discussing the legal implications of a possible presidential decision, asked his staff to set up a meeting with a lawyer. Supposedly Mr. Truman said, “But I don't want one of those two-handed lawyers.” When asked what a two-handed lawyer was, he replied, “You know, a lawyer who says, ‘On the one hand I recommend you do so and so because of the following reasons, but on the other hand I recommend that you don't do it because of these other reasons.’”

Unfortunately, any sensible treatment of dividend policy will appear to have been written by a two-handed lawyer (or, in fairness, several two-handed financial economists). On the one hand, there are many good reasons for corporations to pay high dividends, but, on the other hand, there are also many good reasons to pay low dividends.

We will cover three broad topics that relate to dividends and dividend policy in this chapter. First, we describe the various kinds of dividends and how dividends are paid. Second, we consider an idealized case in which dividend policy doesn't matter. We then discuss the limitations of this case and present some real-world arguments for both high- and low-dividend payouts. Finally, we conclude the chapter by looking at some strategies that corporations might employ to implement a dividend policy, and we discuss share repurchases as an alternative to dividends.

**dividend**

Payment made out of a firm's earnings to its owners, in the form of either cash or stock.

## CASH DIVIDENDS AND DIVIDEND PAYMENT | 14.1

The term **dividend** usually refers to cash paid out of earnings. If a payment is made from sources other than current or accumulated retained earnings, the term **distribution**, rather than *dividend*, is used. However, it is acceptable to refer to a distribution from earnings as a dividend and a distribution from capital as a liquidating dividend. More generally, any

**distribution**

Payment made by a firm to its owners from sources other than current or accumulated retained earnings.

direct payment by the corporation to the shareholders may be considered a dividend or a part of dividend policy.

Dividends come in several different forms. The basic types of cash dividends are:

1. Regular cash dividends
2. Extra dividends
3. Special dividends
4. Liquidating dividends

Later in the chapter, we discuss dividends paid in stock instead of cash, and we also consider an alternative to cash dividends, stock repurchase.

## Cash Dividends

The most common type of dividend is a cash dividend. Commonly, public companies pay **regular cash dividends** four times a year. As the name suggests, these are cash payments made directly to shareholders, and they are made in the regular course of business. In other words, management sees nothing unusual about the dividend and no reason why it won't be continued.

Sometimes firms will pay a regular cash dividend and an *extra cash dividend*. By calling part of the payment “extra,” management is indicating that that part may or may not be repeated in the future. A *special dividend* is similar, but the name usually indicates that this dividend is viewed as a truly unusual or one-time event and it won't be repeated. Finally, the payment of a *liquidating dividend* usually means that some or all of the business has been liquidated, that is, sold off.

However it is labeled, a cash dividend payment reduces corporate cash and retained earnings, except in the case of a liquidating dividend (where paid-in capital may be reduced).

Of course, there are other types of dividends. In 2004, 24 percent of the companies listed on the Japanese Nikkei stock market gave shareholders alternative dividends in the form of food items, prepaid phone cards, and so forth. For example, McDonald's Holdings Company (Japan) gave its shareholders coupon books for free hamburgers.

## Standard Method of Cash Dividend Payment

The decision to pay a dividend rests in the hands of the board of directors of the corporation. When a dividend has been declared, it becomes a liability of the firm and cannot be rescinded easily. Sometime after it has been declared, a dividend is distributed to all shareholders as of some specific date.

Commonly, the amount of the cash dividend is expressed in terms of dollars per share (*dividends per share*). As we have seen in other chapters, it is also expressed as a percentage of the market price (the *dividend yield*) or as a percentage of net income or earnings per share (the *dividend payout*).

## Dividend Payment: A Chronology

The mechanics of a cash dividend payment can be illustrated by the example in Figure 14.1 and the following description:

1. **Declaration date.** On January 15, the board of directors passes a resolution to pay a dividend of \$1 per share on February 16 to all holders of record as of January 30.
2. **Ex-dividend date.** To make sure that dividend checks go to the right people, brokerage firms and stock exchanges establish an *ex-dividend date*. This date is two

### regular cash dividend

Cash payment made by a firm to its owners in the normal course of business, usually made four times a year.

### declaration date

Date on which the board of directors passes a resolution to pay a dividend.

### ex-dividend date

Date two business days before the date of record, establishing those individuals entitled to a dividend.



FIGURE 14.1

Example of the  
procedure for  
dividend payment

1. **Declaration date:** The board of directors declares a payment of dividends.
2. **Ex-dividend date:** A share of stock goes ex dividend on the date the seller is entitled to keep the dividend; under NYSE rules, shares are traded ex dividend on and after the second business day before the record date.
3. **Record date:** The declared dividends are distributable to those who are shareholders of record as of this specific date.
4. **Payment date:** The dividend checks are mailed to shareholders of record.

business days before the date of record (discussed next). If you buy the stock before this date, then you are entitled to the dividend. If you buy on this date or after, then the previous owner will get the dividend.

In Figure 14.1, Wednesday, January 28, is the ex-dividend date. Before this date, the stock is said to trade “with dividend,” or “cum dividend.” Afterwards, the stock trades “ex dividend.”

The ex-dividend date convention removes any ambiguity about who is entitled to the dividend. Since the dividend is valuable, the stock price will be affected when the stock goes “ex.” We examine this effect below.

3. **Date of record.** Based on its records, the corporation prepares a list on January 30 of all individuals believed to be stockholders. These are the *holders of record*, and January 30 is the *date of record* (or record date). The word *believed* is important here. If you bought the stock just before this date, the corporation’s records might not reflect that fact because of mailing or other delays. Without some modification, some of the dividend checks would get mailed to the wrong people. This is the reason for the ex-dividend day convention.
4. **Date of payment.** The dividend checks are mailed on February 16.

**date of record**

Date by which holders must be on record to receive a dividend.

**date of payment**

Date that the dividend checks are mailed.

**More on the Ex-Dividend Date**

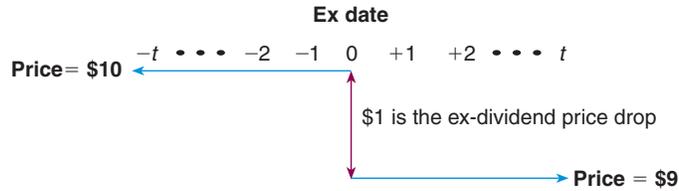
The ex-dividend date is important and is a common source of confusion. We examine what happens to the stock when it goes ex, meaning that the ex-dividend date arrives. To illustrate, suppose we have a stock that sells for \$10 per share. The board of directors declares a dividend of \$1 per share, and the record date is Tuesday, June 12. Based on our discussion above, we know that the ex date will be two business (not calendar) days earlier, on Friday, June 8.

If you buy the stock on Thursday, June 7, right as the market closes, you’ll get the \$1 dividend because the stock is trading cum dividend. If you wait and buy the stock right as the market opens on Friday, you won’t get the \$1 dividend. What will happen to the value of the stock overnight?

If you think about it, the stock is obviously worth about \$1 less on Friday morning, so its price will drop by this amount between close of business on Thursday and the Friday opening. In general, we expect that the value of a share of stock will go down by about the dividend amount when the stock goes ex dividend. The key word here is *about*. Since dividends are taxed, the actual price drop might be closer to some measure of the aftertax

**FIGURE 14.2**

Price behavior  
around the ex-  
dividend date for a  
\$1 cash dividend

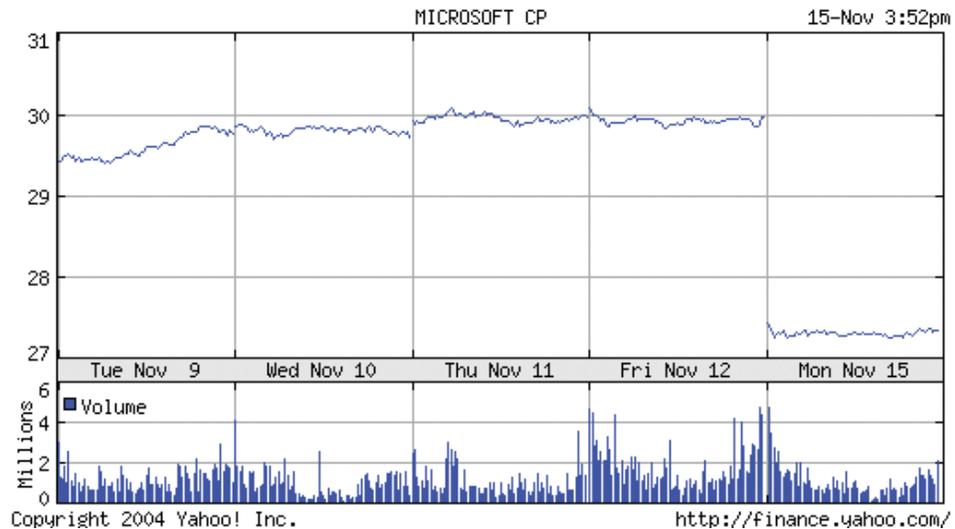


The stock price will fall by the amount of the dividend on the ex date (Time 0). If the dividend is \$1 per share, the price will be equal to  $\$10 - 1 = \$9$  on the ex date.

Before ex date (Time -1)	Dividend = \$0	Price = \$10
On ex date (Time 0)	Dividend = \$1	Price = \$9

value of the dividend. Determining this value is complicated because of the different tax rates and tax rules that apply for different buyers. The series of events described here is illustrated in Figure 14.2.

As an example of the price drop on the ex-dividend date, consider the Microsoft dividend we discussed at the beginning of the chapter. The stock went ex dividend on November 15, 2004 with a total dividend of \$3.08 per share, consisting of a \$3 special dividend and a \$0.08 regular dividend. The stock price chart below shows the change in Microsoft's stock price on the four days prior to the ex-dividend date and on the ex-dividend date.



The stock closed at \$29.97 on November 12 (a Friday) and opened at \$27.34 on November 15, a drop of \$2.63. With a 15 percent tax rate on dividends, we would have expected a drop of \$2.62, so the actual price drop was almost exactly what we expected (we discuss dividend tax rates in a subsequent section).

**EXAMPLE 14.1** "Ex" Marks the Day

The board of directors of Divided Airlines has declared a dividend of \$2.50 per share payable on Tuesday, May 30, to shareholders of record as of Tuesday, May 9. Cal Icon buys 100 shares of Divided on Tuesday, May 2, for \$150 per share. What is the ex date? Describe the events that will occur with regard to the cash dividend and the stock price.

(continued)

The ex date is two business days before the date of record, Tuesday, May 9, so the stock will go ex on Friday, May 5. Cal buys the stock on Tuesday, May 2, so Cal purchases the stock cum dividend. In other words, Cal will get  $\$2.50 \times 100 = \$250$  in dividends. The check will be mailed on Tuesday, May 30. When the stock does go ex on Friday, its value will drop overnight by about \$2.50 per share.

#### CONCEPT QUESTIONS

- 14.1a** What are the different types of cash dividends?  
**14.1b** What are the mechanics of the cash dividend payment?  
**14.1c** How should the price of a stock change when the stock goes ex dividend?

## DOES DIVIDEND POLICY MATTER? 14.2

To decide whether or not dividend policy matters, we first have to define what we mean by dividend *policy*. All other things being the same, of course dividends matter. Dividends are paid in cash, and cash is something that everybody likes. The question we will be discussing here is whether the firm should pay out cash now or invest the cash and pay it out later. Dividend policy, therefore, is the time pattern of dividend payout. In particular, should the firm pay out a large percentage of its earnings now or a small (or even zero) percentage? This is the dividend policy question.

### An Illustration of the Irrelevance of Dividend Policy

A powerful argument can be made that dividend policy does not matter. We illustrate this by considering the simple case of Wharton Corporation. Wharton is an all-equity firm that has existed for 10 years. The current financial managers plan to dissolve the firm in two years. The total cash flows the firm will generate, including the proceeds from liquidation, are \$10,000 in each of the next two years.

**Current Policy: Dividends Set Equal to Cash Flow** At the present time, dividends at each date are set equal to the cash flow of \$10,000. There are 100 shares outstanding, so the dividend per share will be \$100. In Chapter 7, we showed that the value of the stock is equal to the present value of the future dividends. Assuming a 10 percent required return, the value of a share of stock today,  $P_0$ , is:

$$\begin{aligned} P_0 &= \frac{D_1}{(1 + R)^1} + \frac{D_2}{(1 + R)^2} \\ &= \frac{\$100}{1.10} + \frac{100}{1.10^2} = \$173.55 \end{aligned}$$

The firm as a whole is thus worth  $100 \times \$173.55 = \$17,355$ .

Several members of the board of Wharton have expressed dissatisfaction with the current dividend policy and have asked you to analyze an alternative policy.

**Alternative Policy: Initial Dividend Greater Than Cash Flow** Another policy is for the firm to pay a dividend of \$110 per share on the first date (Date 1), which is, of course, a total dividend of \$11,000. Because the cash flow is only \$10,000, an extra \$1,000

must somehow be raised. One way to do this is to issue \$1,000 worth of bonds or stock at Date 1. Assume that stock is issued. The new stockholders will desire enough cash flow at Date 2 so that they earn the required 10 percent return on their Date 1 investment.

What is the value of the firm with this new dividend policy? The new stockholders invest \$1,000. They require a 10 percent return, so they will demand  $\$1,000 \times 1.10 = \$1,100$  of the Date 2 cash flow, leaving only \$8,900 to the old stockholders. The dividends to the old stockholders will be:

	Date 1	Date 2
Aggregate dividends to old stockholders	\$11,000	\$8,900
Dividends per share	110	89

The present value of the dividends per share is therefore:

$$P_0 = \frac{\$110}{1.10} + \frac{89}{1.10^2} = \$173.55$$

This is the same value we had before.

The value of the stock is not affected by this switch in dividend policy even though we had to sell some new stock just to finance the dividend. In fact, no matter what pattern of dividend payout the firm chooses, the value of the stock will always be the same in this example. In other words, for the Wharton Corporation, dividend policy makes no difference. The reason is simple: Any increase in a dividend at some point in time is exactly offset by a decrease somewhere else, so the net effect, once we account for time value, is zero.

## A Test

Our discussion to this point can be summarized by considering the following true-false test questions:

1. True or false: Dividends are irrelevant.
2. True or false: Dividend policy is irrelevant.

The first statement is surely false, and the reason follows from common sense. Clearly, investors prefer higher dividends to lower dividends at any single date if the dividend level is held constant at every other date. To be more precise regarding the first question, if the dividend per share at a given date is raised, while the dividend per share at every other date is held constant, the stock price will rise. The reason is that the present value of the future dividends must go up if this occurs. This action can be accomplished by management decisions that improve productivity, increase tax savings, strengthen product marketing, or otherwise improve cash flow.

The second statement is true, at least in the simple case we have been examining. Dividend policy by itself cannot raise the dividend at one date while keeping it the same at all other dates. Rather, dividend policy merely establishes the trade-off between dividends at one date and dividends at another date. Once we allow for time value, the present value of the dividend stream is unchanged. Thus, in this simple world, dividend policy does not matter, because managers choosing either to raise or to lower the current dividend do not affect the current value of their firm. However, we have ignored several real-world factors that might lead us to change our minds; we pursue some of these in subsequent sections.

## Some Real-World Factors Favoring a Low Payout

The example we used to illustrate the irrelevance of dividend policy ignored taxes and flotation costs. We will now see that these factors might lead us to prefer a low-dividend payout.

**Taxes** U.S. tax laws are complex, and they affect dividend policy in a number of ways. The key tax feature has to do with the taxation of dividend income and capital gains. For individual shareholders, *effective* tax rates on dividend income are higher than the tax rates on capital gains. Historically, dividends received have been taxed as ordinary income. Capital gains have been taxed at somewhat lower rates, and the tax on a capital gain is deferred until the stock is sold. This second aspect of capital gains taxation makes the effective tax rate much lower because the present value of the tax is less.<sup>1</sup>

A firm that adopts a low-dividend payout will reinvest the money instead of paying it out. This reinvestment increases the value of the firm and of the equity. All other things being equal, the net effect is that the expected capital gains portion of the return will be higher in the future. So the fact that capital gains are taxed favorably may lead us to prefer this approach.

Recent tax law changes have led to a renewed interest in the effect of taxes on corporate dividend policies. As we previously noted, historically dividends have been taxed as ordinary income (at ordinary income tax rates). In 2003, this changed dramatically. The maximum tax rate on dividends was lowered from the 35–39 percent range to 15 percent. The same rate applies to long-term capital gains. The lower tax rate on dividends reduces the tax disincentive to pay dividends, but does not eliminate it. Note that capital gains are still taxed preferentially because of the deferment.

**Flotation Costs** In our example illustrating that dividend policy doesn't matter, we saw that the firm could sell some new stock if necessary to pay a dividend. As we discuss in our next chapter, selling new stock can be very expensive. If we include the costs of selling stock ("flotation" costs) in our argument, then we will find that the value of the stock decreases if we sell new stock.

More generally, imagine two firms identical in every way except that one pays out a greater percentage of its cash flow in the form of dividends. Since the other firm plows back more, its equity grows faster. If these two firms are to remain identical, then the one with the higher payout will have to periodically sell some stock to catch up. Since this is expensive, a firm might be inclined to have a low payout.

**Dividend Restrictions** In some cases, a corporation may face restrictions on its ability to pay dividends. For example, as we discussed in Chapter 6, a common feature of a bond indenture is a covenant prohibiting dividend payments above some level. Also, a corporation may be prohibited by state law from paying dividends if the dividend amount exceeds the firm's retained earnings.

## Some Real-World Factors Favoring a High Payout

In this section, we consider reasons why a firm might pay its shareholders higher dividends even if it means the firm must issue more shares of stock to finance the dividend payments.

<sup>1</sup>In fact, capital gains taxes can sometimes be avoided altogether. Although we do not recommend this particular tax-avoidance strategy, the capital gains tax may be avoided by dying. Your heirs are not considered to have a capital gain, so the tax liability dies when you do. In this instance, you can take it with you.

**Desire for Current Income** It has been argued that many individuals desire current income. The classic example is the group of retired people and others living on a fixed income, the proverbial “widows and orphans.” It is argued that this group is willing to pay a premium to get a higher dividend yield.

It is easy to see, however, that this argument is not relevant in our simple case. An individual preferring high current cash flow but holding low-dividend securities could easily sell off shares to provide the necessary funds. Similarly, an individual desiring a low current cash flow but holding high-dividend securities could just reinvest the dividends. Thus, in a world of no transaction costs, a policy of high current dividends would be of no value to the stockholder.

The current-income argument may have relevance in the real world. Here the sale of low-dividend stocks would involve brokerage fees and other transaction costs. Such a sale might also trigger capital gains taxes. These direct cash expenses could be avoided by an investment in high-dividend securities. In addition, the expenditure of the stockholder’s own time when selling securities and the natural (though not necessarily rational) fear of consuming out of principal might further lead many investors to buy high-dividend securities.

**Tax and Legal Benefits from High Dividends** Earlier we saw that dividends were taxed unfavorably for individual investors. This fact is a powerful argument for a low payout. However, there are a number of other investors who do not receive unfavorable tax treatment from holding high-dividend yield, rather than low-dividend yield, securities.

**Corporate investors** A significant tax break on dividends occurs when a corporation owns stock in another corporation. A corporate stockholder receiving either common or preferred dividends is granted a 70 percent (or more) dividend exclusion. Since the 70 percent exclusion does not apply to capital gains, this group is taxed unfavorably on capital gains.

As a result of the dividend exclusion, high-dividend, low-capital gains stocks may be more appropriate for corporations to hold. In fact, this is why corporations hold a substantial percentage of the outstanding preferred stock in the economy. This tax advantage of dividends also leads some corporations to hold high-yielding stocks instead of long-term bonds because there is no similar tax exclusion of interest payments to corporate bondholders.

**Tax-exempt investors** We have pointed out both the tax advantages and the tax disadvantages of a low-dividend payout. Of course, this discussion is irrelevant to those in zero tax brackets. This group includes some of the largest investors in the economy, such as pension funds, endowment funds, and trust funds.

There are some legal reasons for large institutions to favor high-dividend yields. First, institutions such as pension funds and trust funds are often set up to manage money for the benefit of others. The managers of such institutions have a *fiduciary responsibility* to invest the money prudently. It has been considered imprudent in courts of law to buy stock in companies with no established dividend record.

Second, institutions such as university endowment funds and trust funds are frequently prohibited from spending any of the principal. Such institutions might therefore prefer high-dividend yield stocks so they have some ability to spend. Like widows and orphans, this group thus prefers current income. Unlike widows and orphans, this group is very large in terms of the amount of stock owned.

Overall, individual investors (for whatever reason) may have a desire for current income and may thus be willing to pay the dividend tax. In addition, some very large investors

such as corporations and tax-free institutions may have a very strong preference for high-dividend payouts.

## Clientele Effects: A Resolution of Real-World Factors?

In our earlier discussion, we saw that some groups (wealthy individuals, for example) have an incentive to pursue low-payout (or zero payout) stocks. Other groups (corporations, for example) have an incentive to pursue high-payout stocks. Companies with high payouts will thus attract one group, and low-payout companies will attract another.

These different groups are called *clienteles*, and what we have described is a **clientele effect**. The clientele effect argument states that different groups of investors desire different levels of dividends. When a firm chooses a particular dividend policy, the only effect is to attract a particular clientele. If a firm changes its dividend policy, then it just attracts a different clientele.

What we are left with is a simple supply and demand argument. Suppose 40 percent of all investors prefer high dividends, but only 20 percent of the firms pay high dividends. Here the high-dividend firms will be in short supply; thus, their stock prices will rise. Consequently, low-dividend firms will find it advantageous to switch policies until 40 percent of all firms have high payouts. At this point, the *dividend market* is in equilibrium. Further changes in dividend policy are pointless because all of the clienteles are satisfied. The dividend policy for any individual firm is now irrelevant.

To see if you understand the clientele effect, consider the following statement: In spite of the theoretical argument that dividend policy is irrelevant or that firms should not pay dividends, many investors like high dividends; because of this fact, a firm can boost its share price by having a higher dividend payout ratio. True or false?

The answer is “false” if clienteles exist. As long as enough high-dividend firms satisfy the dividend-loving investors, a firm won’t be able to boost its share price by paying high dividends. An unsatisfied clientele must exist for this to happen, and there is no evidence that this is the case.

### clientele effect

Argument that stocks attract particular groups based on dividend yield and the resulting tax effects.

### CONCEPT QUESTIONS

14.2a Are dividends irrelevant?

14.2b What are some of the reasons for a low payout?

14.2c What are the implications of dividend clienteles for payout policies?

## ESTABLISHING A DIVIDEND POLICY | 14.3

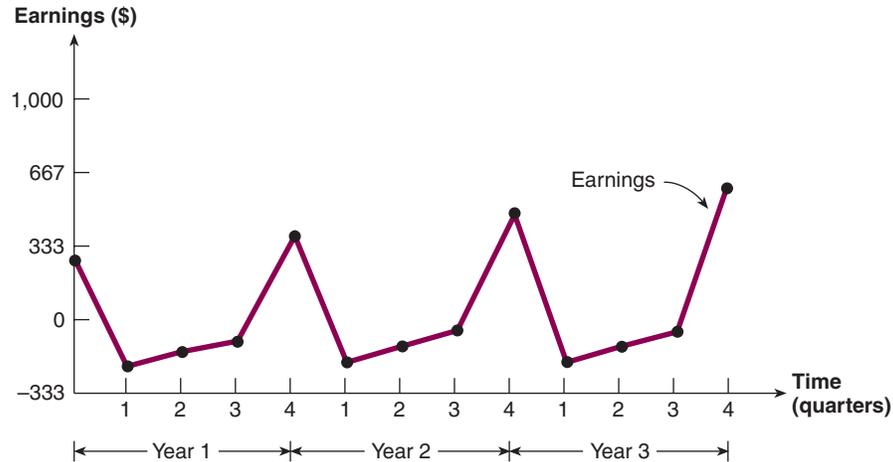
In this section, we focus on a particular approach to establishing a dividend policy that reflects many of the attitudes and objectives of financial managers as well as observed corporate dividend policies.

### Residual Dividend Approach

Earlier, we noted that firms with higher dividend payouts will have to sell stock more often. As we have seen, such sales are not very common and they can be very expensive. Consistent with this, we will assume that the firm wishes to minimize the need to sell new equity. We will also assume that the firm wishes to maintain its current capital structure.

**FIGURE 14.3**

Earnings for Big  
Department  
Stores, Inc.



If a firm wishes to avoid new equity sales, then it will have to rely on internally generated cash flow to finance new, positive NPV projects.<sup>2</sup> Dividends can only be paid out of what is left over. This leftover is called the *residual*, and such a dividend policy is called a **residual dividend approach**.

With a residual dividend policy, the firm’s objective is to meet its investment needs and maintain its desired debt-equity ratio before paying dividends. Given this objective, we expect those firms with many investment opportunities to pay a small percentage of their earnings as dividends and other firms with fewer opportunities to pay a high percentage of their earnings as dividends. This result appears to occur in the real world. Young, fast-growing firms commonly employ a low payout ratio, whereas older, slower-growing firms in more mature industries use a higher ratio.

**residual dividend approach**

Policy under which a firm pays dividends only after meeting its investment needs while maintaining a desired debt-equity ratio.

**Dividend Stability**

The key point of the residual dividend approach is that dividends are paid only after all profitable investment opportunities are exhausted. Of course, a strict residual approach might lead to a very unstable dividend payout. If investment opportunities in one period are quite high, dividends will be low or zero. Conversely, dividends might be high in the next period if investment opportunities are considered less promising.

Consider the case of Big Department Stores, Inc., a retailer whose annual earnings are forecast to be equal from year to year but whose quarterly earnings change throughout the year. They are low in each year’s first quarter because of the post-Christmas business slump. Although earnings increase only slightly in the second and third quarters, they advance greatly in the fourth quarter as a result of the Christmas season. A graph of this firm’s earnings is presented in Figure 14.3.

The firm can choose between at least two types of dividend policies. First, each quarter’s dividend can be a fixed fraction of that quarter’s earnings. Here, dividends will vary throughout the year. This is a *cyclical dividend policy*. Second, each quarter’s dividend can be a fixed fraction of yearly earnings, implying that all dividend payments would be equal. This is a *stable dividend policy*. These two types of dividend policies are displayed in Figure 14.4.

<sup>2</sup>Our discussion of sustainable growth in Chapter 3 is relevant here. We assumed there that a firm has a fixed capital structure, profit margin, and capital intensity. If the firm raises no new external equity and wishes to grow at some target rate, then there is only one payout ratio consistent with these assumptions.

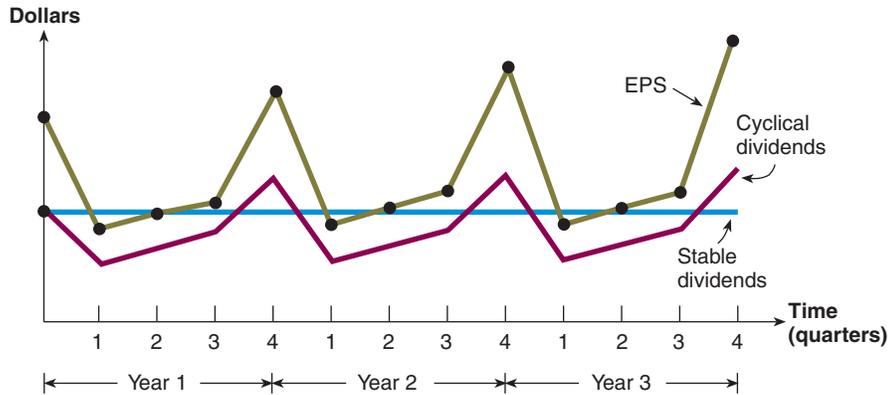


FIGURE 14.4

Alternative dividend policies for Big Department Stores, Inc.

**Cyclical dividend policy:** Dividends are a constant proportion of earnings at each pay date.

**Stable dividend policy:** Dividends are a constant proportion of earnings over an earnings cycle.

Most financial managers would agree that a stable dividend policy is in the best interests of the firm and its stockholders. Dividend cuts in particular are viewed as highly undesirable because such cuts are often interpreted as a sign of financial distress. Consequently, most companies will try to maintain a steady dividend through time, increasing the dividend only when management is confident the new dividend can be sustained indefinitely.

To show how important dividend stability and increases are, consider that in 2004, 1,745 of the approximately 7,000 public companies increased their dividend payments. Dividend cuts or omissions totaled 64 for the same year. Two companies with particularly long histories of dividend increases are Procter & Gamble and Colgate-Palmolive. At the end of 2004, Procter & Gamble had increased its dividend for 49 consecutive years, and Colgate-Palmolive had increased its dividend for 41 consecutive years. Overall, 85 companies in the S&P 500 had increased dividends for at least 25 consecutive years.

## A Compromise Dividend Policy

In practice, many firms appear to follow what amounts to a compromise dividend policy. Such a policy is based on five main goals:

1. Avoid cutting back on positive NPV projects to pay a dividend.
2. Avoid dividend cuts.
3. Avoid the need to sell equity.
4. Maintain a target debt-equity ratio.
5. Maintain a target dividend payout ratio.

These goals are ranked more or less in order of their importance. In our strict residual approach, we assume that the firm maintains a fixed debt-equity ratio. Under the compromise approach, the debt-equity ratio is viewed as a long-range goal. It is allowed to vary in the short run if necessary to avoid a dividend cut or the need to sell new equity.

In addition to showing a strong reluctance to cut dividends, financial managers tend to think of dividend payments in terms of a proportion of income, and they also tend to think investors are entitled to a “fair” share of corporate income. This share is the long-run **target payout ratio**, and it is the fraction of the earnings the firm expects to pay as dividends under

### target payout ratio

A firm’s long-term desired dividend-to-earnings ratio.

ordinary circumstances. Again, this is viewed as a long-range goal, so dividends might vary in the short run if this is needed. In the long run, earnings growth is followed by dividend increases, but only with a lag.

One can minimize the problems of dividend instability by creating two types of dividends: regular and extra. For companies using this approach, the regular dividend would most likely be a relatively small fraction of permanent earnings, so that it could be sustained easily. Extra dividends would be granted when an increase in earnings was expected to be temporary.

Since investors look at an extra dividend as a bonus, there is relatively little disappointment when an extra dividend is not repeated. Although the extra-dividend approach appears quite sensible, few companies use it in practice. One reason is that a share repurchase, which we discuss next, does much the same thing with some extra advantages.

#### CONCEPT QUESTIONS

**14.3a** What is a residual dividend policy?

**14.3b** What is the chief drawback to a strict residual policy? What do many firms do in practice?

## 14.4 STOCK REPURCHASE: AN ALTERNATIVE TO CASH DIVIDENDS

### repurchase

Refers to a firm's purchase of its own stock.

When a firm wants to pay cash to its shareholders, it normally pays a cash dividend. Another way is to **repurchase** its own stock. Stock repurchasing has been a major financial activity in recent years, and it appears that it will continue to be one.

### Cash Dividends versus Repurchase

Imagine an all-equity company with excess cash of \$300,000. The firm pays no dividends, and its net income for the year just ended is \$49,000. The market value balance sheet at the end of the year is represented below.

Market Value Balance Sheet (before paying out excess cash)			
Excess cash	\$ 300,000	Debt	\$ 0
Other assets	700,000	Equity	1,000,000
Total	\$1,000,000	Total	\$1,000,000

There are 100,000 shares outstanding. The total market value of the equity is \$1 million, so the stock sells for \$10 per share. Earnings per share, EPS, are  $\$49,000/100,000 = \$.49$ , and the price-earnings ratio, PE, is  $\$10/.49 = 20.4$ .

One option the company is considering is a  $\$300,000/100,000 = \$3$  per share extra cash dividend. Alternatively, the company is thinking of using the money to repurchase  $\$300,000/10 = 30,000$  shares of stock.

If commissions, taxes, and other imperfections are ignored in our example, the stockholders shouldn't care which option is chosen. Does this seem surprising? It shouldn't,

really. What is happening here is that the firm is paying out \$300,000 in cash. The new balance sheet is represented below.

<b>Market Value Balance Sheet (after paying out excess cash)</b>			
Excess cash	\$ 0	Debt	\$ 0
Other assets	700,000	Equity	700,000
Total	\$700,000	Total	\$700,000

If the cash is paid out as a dividend, there are still 100,000 shares outstanding, so each is worth \$7.

The fact that the per-share value fell from \$10 to \$7 isn't a cause for concern. Consider a stockholder who owns 100 shares. At \$10 per share before the dividend, the total value is \$1,000.

After the \$3 dividend, this same stockholder has 100 shares worth \$7 each, for a total of \$700, plus  $100 \times \$3 = \$300$  in cash, for a combined total of \$1,000. This just illustrates what we saw early on: A cash dividend doesn't affect a stockholder's wealth if there are no imperfections. In this case, the stock price simply fell by \$3 when the stock went ex dividend.

Also, since total earnings and the number of shares outstanding haven't changed, EPS is still 49 cents. The price-earnings ratio, however, falls to  $\$7/.49 = 14.3$ . Why we are looking at accounting earnings and PE ratios will be apparent just below.

Alternatively, if the company repurchases 30,000 shares, there will be 70,000 left outstanding. The balance sheet looks the same.

<b>Market Value Balance Sheet (after share purchase)</b>			
Excess cash	\$ 0	Debt	\$ 0
Other assets	700,000	Equity	700,000
Total	\$700,000	Total	\$700,000

The company is worth \$700,000 again, so each remaining share is worth  $\$700,000/70,000 = \$10$ . Our stockholder with 100 shares is obviously unaffected. For example, if they were so inclined, they could sell 30 shares and end up with \$300 in cash and \$700 in stock, just as they have if the firm pays the cash dividend.

In this second case, EPS goes up since total earnings stay the same while the number of shares goes down. The new EPS will be  $\$49,000/70,000 = \$0.70$  per share. However, the important thing to notice is that the PE ratio is  $\$10/.70 = 14.3$ , just as it was following the dividend.

This example illustrates the important point that, if there are no imperfections, a cash dividend and a share repurchase are essentially the same thing. This is just another illustration of dividend policy irrelevance when there are no taxes or other imperfections.

## Real-World Considerations in a Repurchase

The example we have just described shows that a repurchase and a cash dividend are the same thing in a world without taxes and transaction costs. In the real world, there are some accounting differences between a share repurchase and a cash dividend, but the most important difference is in the tax treatment.

Under current tax law, a repurchase has a significant tax advantage over a cash dividend. A dividend is fully taxed as ordinary income, and a shareholder has no choice about whether or not to receive the dividend. In a repurchase, a shareholder pays taxes only if (1) the shareholder actually chooses to sell and (2) the shareholder has a capital gain on the sale.

If this advantage strikes you as being too good to be true, you are quite likely right. The IRS does not allow a repurchase solely for the purpose of avoiding taxes. There must be some other business-related reason for doing it. Probably the most common reason is that “the stock is a good investment.” The second most common is that “investing in the stock is a good use for the money” or that “the stock is undervalued,” and so on.

However it is justified, some corporations have engaged in massive repurchases in recent years. For example, consider Microsoft’s \$30 billion stock “buyback” (another word for repurchase), which we discussed at the beginning of the chapter. At the then-current market value of the stock, this repurchase amounted to over 10 percent of all shares outstanding.

One cautionary note is in order concerning share repurchases, or buybacks. A company announcing plans to buy back some of its stock has no legal obligation to actually do it, and it turns out that many announced repurchases are never completed. Nonetheless, as the accompanying *Reality Bytes* box indicates, share buybacks are very big business, and they seem to be getting bigger and more common all the time.

## Share Repurchase and EPS

You may read in the popular financial press that a share repurchase is beneficial because earnings per share increase. As we have seen, this will happen. The reason is simply that a share repurchase reduces the number of outstanding shares, but it has no effect on total earnings. As a result, EPS rises.

However, the financial press may place undue emphasis on EPS figures in a repurchase agreement. In our example above, we saw that the value of the stock wasn’t affected by the EPS change. In fact, the price-earnings ratio was exactly the same when we compared a cash dividend to a repurchase.

Since the increase in earnings per share is exactly tracked by the increase in the price per share, there is no net effect. Put another way, the increase in EPS is just an accounting adjustment that reflects (correctly) the change in the number of shares outstanding.

In the real world, to the extent that repurchases benefit the firm, we would argue that they do so primarily because of the tax considerations we discussed above.

### CONCEPT QUESTIONS

- 14.4a Why might a stock repurchase make more sense than an extra cash dividend?
- 14.4b Why don’t all firms use stock repurchases instead of cash dividends?

## 14.5 STOCK DIVIDENDS AND STOCK SPLITS

### stock dividend

Payment made by a firm to its owners in the form of stock, diluting the value of each share outstanding.

Another type of dividend is paid out in shares of stock. This type of dividend is called a **stock dividend**. A stock dividend is not a true dividend because it is not paid in cash. The effect of a stock dividend is to increase the number of shares that each owner holds. Since there are more shares outstanding, each is simply worth less.

A stock dividend is commonly expressed as a percentage; for example, a 20 percent stock dividend means that a shareholder receives one new share for every five currently owned (a 20 percent increase). Since every shareholder owns 20 percent more stock, the

## REALITY BYTES



### Stock Buybacks: No End in Sight

Share repurchases have continued to grow. During 2004 alone, U.S. companies announced \$233 billion in stock buybacks. In fact, for the past several years, share repurchases have been so large that U.S. corporations bought back more shares than they sold. In other words, net equity raised by U.S. corporations has been negative.

Some companies appear to have become serial repurchasers. Take General Electric (GE), for example. In December 2004, the company announced a plan to buy back \$15 billion worth of stock over the next three years. But the \$15 billion buyback was nothing new to GE shareholders. The company had repurchased \$12.8 billion worth of stock from 1998 to 2002. In 2003 and 2004, due to cash restraints caused by acquisitions, the company repurchased only about \$500 million in stock each year.

Stock buybacks have evolved to the point where they are used for other purposes. For example, in January 2005 consumer products giant Procter & Gamble (P&G) announced that it was purchasing razor manufacturer Gillette for \$54 billion. The purchase was paid for entirely by stock in P&G. This is important because if a company acquires another company for cash, the shareholders of the acquired company are forced to pay taxes. If shareholders receive stock, no taxes are due. What made the deal unique was that P&G announced at the same time that it would repurchase from \$18 to \$22 billion in stock. Thus, P&G essentially paid about 60 percent in stock

and 40 percent in cash, but the way the deal was structured made it look like a 100 percent stock acquisition to Gillette's stockholders.

Stock buybacks are not limited to the United States. In August 2004, Matsushita Electric, manufacturer of Panasonic electronics products, announced a stock buyback of up to 80 million shares, or about 3.5 percent of the company stock outstanding. The dollar amount of the buyback could be up to 100 billion yen, or about a billion dollars. In January 2005, the Brazilian phone company Tele Norte Leste Participacoes SA, or Telemar, announced a stock buyback of 3.46 million shares of common stock and 20.4 million shares of preferred stock. And in December 2004, South Korean tobacco company KT&G announced that it had bought back 10 million shares of its stock.

We haven't discussed what happens to the stock when a company does a buyback. There are actually several things the company can do. Many companies keep the stock and use the shares for employee stock option plans. When employee stock options are exercised by the employees, new shares are created, which increases the number of shares of stock outstanding. By using the repurchased shares, the company does not need to issue any new shares. A company can also keep the repurchased stock for itself as Treasury stock. Finally, the company can cancel the stock completely. In essence, it destroys the shares repurchased, which reduces the number of shares outstanding.

total number of shares outstanding rises by 20 percent. As we will see in a moment, the result is that each share of stock is worth about 20 percent less.

A **stock split** is essentially the same thing as a stock dividend, except that a split is expressed as a ratio instead of a percentage. When a split is declared, each share is split up to create additional shares. For example, in a three-for-one stock split, each old share is split into three new shares.

By convention, stock dividends of less than 20 to 25 percent are called *small stock dividends*. A stock dividend greater than this 20 to 25 percent is called a *large stock dividend*. Large stock dividends are not uncommon. For example, in January 2005 American Medical Systems Holdings, a developer and manufacturer of medical equipment, announced a 2-for-1 stock split in the form of a 100 percent stock dividend. In the same month, Tarragon Corp., a residential community developer, announced a 3-for-2 stock split in the form of a stock dividend. Except for some relatively minor accounting differences, a stock dividend has the same effect as a stock split. In fact, you can see the relationship between the two because both companies announced the stock dividend in the same way a stock split would be announced.

#### stock split

An increase in a firm's shares outstanding without any change in owners' equity.

## Value of Stock Splits and Stock Dividends

The laws of logic tell us that stock splits and stock dividends can (1) leave the value of the firm unaffected, (2) increase its value, or (3) decrease its value. Unfortunately, the issues are complex enough that one cannot easily determine which of the three relationships holds.

**The Benchmark Case** A strong case can be made that stock dividends and splits do not change either the wealth of any shareholder or the wealth of the firm as a whole. The reason is that they are just paper transactions and simply alter the number of shares outstanding. For example, if a firm declares a two-for-one split, all that happens is that the number of shares is doubled, with the result that each share is worth half as much. The total value is not affected.

Although this simple conclusion is relatively obvious, there are reasons that are often given to suggest that there may be some benefits to these actions. The typical financial manager is aware of many real-world complexities, and, for that reason, the stock split or stock dividend decision is not treated lightly in practice.

**Popular Trading Range** Proponents of stock dividends and stock splits frequently argue that a security has a proper **trading range**. When the security is priced above this level, many investors do not have the funds to buy the common trading unit of 100 shares, called a *round lot*. Although securities can be purchased in *odd-lot* form (fewer than 100 shares), the commissions are greater. Thus, firms will split the stock to keep the price in this trading range.

Although this argument is a popular one, its validity is questionable for a number of reasons. Mutual funds, pension funds, and other institutions have steadily increased their trading activity since World War II and now handle a sizable percentage of total trading volume (on the order of 80 percent of NYSE trading volume, for example). Because these institutions buy and sell in huge amounts, the individual share price is of little concern.

Furthermore, we sometimes observe share prices that are quite large without appearing to cause problems. For example, consider the Swiss chocolatier Lindt. In early 2005, Lindt shares were selling for around 17,000 Swiss francs each, or about \$14,300. A round lot would have cost a cool \$1.43 million. This is fairly expensive, but not compared to Berkshire-Hathaway, the U.S. company run by legendary investor Warren Buffett. In early 2005, each share of the company's class A stock sold for about \$90,000, down from a high of \$95,700 in February 2004 (the class B stock was much cheaper at \$3,000 per share).

Finally, there is evidence that stock splits may actually decrease the liquidity of the company's shares. Following a two-for-one split, the number of shares traded should more than double if liquidity is increased by the split. This doesn't appear to happen, and the opposite is sometimes observed.

## Reverse Splits

A less frequently encountered financial maneuver is the **reverse split**. For example, in February of 2005, shareholders in Agere Systems, which makes chips for, among other things, Microsoft's Xbox and Apple's iPod, approved a proposal for a reverse split ranging from 1-for-10 to 1-for-40, giving management the choice of which ratio to use. In a 1-for-10 reverse split, each investor exchanges 10 old shares for one new share. The par value is increased tenfold in the process. As with stock splits and stock dividends, a case can be made that a reverse split has no real effect.

Information on upcoming stock splits is available on the splits calendar at

[www.investmthouse.com/1stockplits4.htm](http://www.investmthouse.com/1stockplits4.htm), [finance.yahoo.com](http://finance.yahoo.com).

### trading range

Price range between highest and lowest prices at which a stock is traded.

### reverse split

Stock split under which a firm's number of shares outstanding is reduced.

Given real-world imperfections, three related reasons are cited for reverse splits. First, transaction costs to shareholders may be less after the reverse split. Second, the liquidity and marketability of a company's stock might be improved when its price is raised to the popular trading range. Third, stocks selling at prices below a certain level are not considered respectable, meaning that investors underestimate these firms' earnings, cash flow, growth, and stability. Agere Systems cited all three reasons. Some financial analysts argue that a reverse split can achieve instant respectability. As was the case with stock splits, none of these reasons is particularly compelling, especially not the third one.

There are two other reasons for reverse splits. First, stock exchanges have minimum price per share requirements. A reverse split may bring the stock price up to such a minimum. For example, NASDAQ delists companies whose stock price drops below \$1 per share for 30 days. Following the collapse of the Internet boom in 2001–2002, a large number of Internet-related companies found themselves in danger of being delisted and used reverse splits to boost their stock prices. Second, companies sometimes perform reverse splits and, at the same time, buy out any stockholders who end up with less than a certain number of shares.

For example, in May 2004, Detwiler, Mitchell & Co., a Boston-based investment bank, completed a 1-for-600 reverse stock split, followed by a cash purchase of all holdings less than one share in order to buy out all shareholders who held less than one hundred shares to save in mailing and other administrative costs. The company ultimately repurchased about 64,000 shares from some 500 stockholders. What made the proposal especially imaginative was that immediately after the reverse stock split, the company underwent a 600-for-1 split to restore the stock to its original cost!

### CONCEPT QUESTIONS

- 14.5a** What is the effect of a stock split on stockholder wealth?  
**14.5b** What is a reverse split?

## 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.
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 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, while 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 PROBLEM

- 14.1 Repurchase versus Cash Dividend.** Trantor Corporation is deciding whether to pay out \$300 in excess cash in the form of an extra dividend or a share repurchase. Current earnings are \$1.50 per share, and the stock sells for \$15. The market value balance sheet before paying out the \$300 is as follows:

Market Value Balance Sheet (before paying out excess cash)			
Excess cash	\$ 300	Debt	\$ 400
Other assets	1,600	Equity	1,500
Total	\$1,900	Total	\$1,900

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

### Answer to Chapter Review and Self-Test Problem

- 14.1** The market value of the equity is \$1,500. The price per share is \$15, so there are 100 shares outstanding. The cash dividend would amount to  $\$300/100 = \$3$  per share. When the stock goes ex dividend, the price will drop by \$3 per share to \$12. Put another way, the total assets decrease by \$300, so the equity value goes down by this amount to \$1,200. With 100 shares, the new stock price is \$12 per share. After the dividend, EPS will be the same, \$1.50, but the PE ratio will be  $\$12/1.50 = 8$  times.

With a repurchase,  $\$300/15 = 20$  shares will be bought up, leaving 80. The equity will again be worth \$1,200 total. With 80 shares, this is  $\$1,200/80 = \$15$  per share, so the price doesn't change. Total earnings for Trantor must be  $\$1.50 \times 100 = \$150$ . After the repurchase, EPS will be higher at  $\$150/80 = \$1.875$ . The PE ratio, however, will still be  $\$15/1.875 = 8$  times.

## CRITICAL THINKING AND CONCEPTS REVIEW

- 14.1 Dividend Policy Irrelevance.** How is it possible that dividends are so important, but, at the same time, dividend policy is irrelevant?
- 14.2 Stock Repurchases.** What is the impact of a stock repurchase on a company's debt ratio? Does this suggest another use for excess cash?
- 14.3 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?
- 14.4 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?
- 14.5 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.)
- 14.6 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?
- 14.7 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)?
- 14.8 Dividend Reinvestment Plans.** The DRK Corporation has recently developed a dividend reinvestment plan (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.
- 14.9 Dividend Policy.** During 2004, 238 companies went public with common stock offerings, raising a combined total of \$45.2 billion. Relatively few of these 238 companies involved paid cash dividends. Why do you think most chose not to pay dividends?
- 14.10 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 1–15)



1. **Dividends and Stock Prices.** Your portfolio is 200 shares of LG, Inc. The stock currently sells for \$87 per share. The company has announced a dividend of \$1.40 per share with an ex-dividend date of April 19. Assuming no taxes, how much will your stock be worth on April 19?
2. **Dividends and Stock Prices.** It is April 19. Using the information in the previous problem, what is your total portfolio value?
3. **Dividends and Taxes.** Ride On, Inc., has declared a \$4.60 per share dividend. Suppose capital gains are not taxed, but dividends are taxed at 15 percent. New IRS regulations require that taxes be withheld at the time the dividend is paid. Ride On sells for \$105 per share, and the stock is about to go ex-dividend. What do you think the ex-dividend price will be?
4. **Stock Dividends.** The owners' equity accounts for Robyn International are shown here:

Common stock (\$1 par value)	\$ 20,000
Capital surplus	150,000
Retained earnings	<u>485,000</u>
Total owners' equity	<u>\$655,000</u>

- a. If Robyn stock currently sells for \$40 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 Robyn declared a 25 percent stock dividend, how would the accounts change?
5. **Stock Splits.** For the company in Problem 4, show how the equity accounts will change if:
  - a. Robyn declares a two-for-one stock split. How many shares are outstanding now? What is the new par value per share?
  - b. Robyn declares a one-for-four reverse stock split. How many shares are outstanding now? What is the new par value per share?
6. **Stock Splits and Stock Dividends.** Bermuda Triangle Corporation (BTC) currently has 500,000 shares of stock outstanding that sell for \$85 per share. Assuming no market imperfections or tax effects exist, what will the share price be after:
  - a. BTC has a five-for-three stock split?
  - b. BTC has a 15 percent stock dividend?
  - c. BTC has a 42.5 percent stock dividend?
  - d. BTC has a four-for-seven reverse stock split?
  - e. Determine the new number of shares outstanding in parts (a) through (d).
7. **Regular Dividends.** The balance sheet for Magic Carpet, Inc., is shown here in market value terms. There are 20,000 shares of stock outstanding.



Market Value Balance Sheet

Cash	\$ 50,000	Equity	\$300,000
Fixed assets	<u>250,000</u>	Total	<u>\$300,000</u>
Total	<u>\$300,000</u>		

The company has declared a dividend of \$1.10 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?

- 8. Share Repurchase.** In the previous problem, suppose the company has announced it is going to repurchase \$22,000 worth of stock instead of paying a dividend. 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.
- 9. Stock Dividends.** The market value balance sheet for Nash Manufacturing is shown here. Nash 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?

Market Value Balance Sheet

Cash	\$130,000	Debt	\$120,000
Fixed assets	480,000	Equity	490,000
Total	<u>\$610,000</u>	Total	<u>\$610,000</u>

- 10. Stock Dividends.** The company with the common equity accounts shown here has declared a 10 percent stock dividend at a time when the market value of its stock is \$45 per share. What effects on the equity accounts will the distribution of the stock dividend have?

Common stock (\$1 par value)	\$ 480,000
Capital surplus	1,550,000
Retained earnings	3,000,000
Total owners' equity	<u>\$5,030,000</u>

- 11. Stock Splits.** In the previous problem, suppose the company instead decides on a two-for-one stock split. The firm's 60-cent-per-share cash dividend on the new (postsplit) shares represents an increase of 10 percent over last year's dividend on the presplit stock. What effect does this have on the equity accounts? What was last year's dividend per share?
- 12. Residual Dividend Policy.** Pete and Repete, a litter recycling company, uses a residual dividend policy. A debt-equity ratio of .70 is considered optimal. Earnings for the period just ended were \$2,900, and a dividend of \$350 was declared. How much in new debt was borrowed? What were total capital outlays?
- 13. Residual Dividend Policy.** Key West Corporation has declared an annual dividend of \$1.40 per share. For the year just ended, earnings were \$6.20 per share.
- What is Key West's payout ratio?
  - Suppose Key West has seven million shares outstanding. Borrowing for the coming year is planned at \$13 million. What are planned investment outlays assuming a residual dividend policy? What target capital structure is implicit in these calculations?



- 14. Residual Dividend Policy.** Superstition Corporation follows a strict residual dividend policy. Its debt-equity ratio is 1.5.
- If earnings for the year are \$1.9 million, what is the maximum amount of capital spending possible with no new equity?
  - If planned investment outlays for the coming year are \$6 million, will Superstition pay a dividend? If so, how much?
  - Does Superstition maintain a constant dividend payout? Why or why not?
- 15. Residual Dividend Policy.** Carmen, Inc., predicts that earnings in the coming year will be \$30 million. There are six million shares, and Carmen maintains a debt-equity ratio of .9.
- Calculate the maximum investment funds available without issuing new equity and the increase in borrowing that goes along with it.
  - Suppose the firm uses a residual dividend policy. Planned capital expenditures total \$40 million. Based on this information, what will the dividend per share be?
  - In part (b), how much borrowing will take place? What is the addition to retained earnings?
  - Suppose Carmen plans no capital outlays for the coming year. What will the dividend be under a residual policy? What will new borrowing be?
- 16. Homemade Dividends.** You own 1,000 shares of stock in Billy Bob Communications. You will receive a \$3 per share dividend in one year. In two years, Billy Bob will pay a liquidating dividend of \$40 per share. The required return on Billy Bob 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.)
- 17. Homemade Dividends.** In the previous problem, suppose you want only \$2,000 total in dividends the first year. What will your homemade dividend be in two years?
- 18. Stock Repurchase.** Flashback Corporation is evaluating an extra dividend versus a share repurchase. In either case, \$13,000 would be spent. Current earnings are \$2.60 per share, and the stock currently sells for \$60 per share. There are 800 shares outstanding. Ignore taxes and other imperfections in answering the first two questions.
- Evaluate the two alternatives in terms of the effect on the price per share of the stock and shareholder wealth.
  - What will be the effect on Flashback's EPS and PE ratio under the two different scenarios?
  - In the real world, which of these actions would you recommend? Why?

**Intermediate**  
(Questions 16–18)

**WHAT'S ON  
THE WEB?**

- 14.1 Dividend Reinvestment Plans.** 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](http://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?
- 14.2 Dividends.** Go to [www.fulldisclosure.com](http://www.fulldisclosure.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?

- 14.3 Stock Splits.** Go to [www.fulldisclosure.com](http://www.fulldisclosure.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?
- 14.4 Dividend Yields.** Which stock has the highest dividend yield? To answer this (and more), go to [finance.yahoo.com](http://finance.yahoo.com) and locate the “Screener” 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. Which company has the highest dividend yield?
- 14.5 Stock Splits.** How many times has Procter & Gamble stock split? Go to P&G’s Web page at [www.pg.com](http://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? If you owned 100 shares of Procter & Gamble on January 1, 1950, and never sold any shares, how many shares would you own today?