CHAPTER 19

Dividends and Other Payouts

On February 16, 2011, cable TV and Internet provider Comcast announced a broad plan to reward stockholders for the recent success of the firm's business. Under the plan, Comcast would (1) boost its annual dividend by 18 percent from 38 cents per share to 45 cents per share; and (2) increase its planned repurchase of Comcast's common stock from \$1.2 billion the previous year to \$2.1 billion in shares. Investors cheered, bidding up the stock price by about 4 percent on the day of the announcement. Why were investors so pleased? To find out, this chapter explores these types of actions and their implications for shareholders.



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19.1 Different Types of Payouts

The term *dividend* usually refers to a cash distribution of earnings. If a distribution 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*.

The most common type of dividend is in the form of cash. When public companies pay dividends, they usually pay **regular cash dividends** four times a year. Sometimes firms will pay a regular cash dividend and an *extra cash dividend*. Paying a cash dividend reduces corporate cash and retained earnings—except in the case of a liquidating dividend (where paid-in capital may be reduced).

Another type of dividend is paid out in shares of stock. This dividend is referred to as a **stock dividend**. It is not a true dividend because no cash leaves the firm. Rather, a stock dividend increases the number of shares outstanding, thereby reducing the value of each share. A stock dividend is commonly expressed as a ratio; for example, with a 2 percent stock dividend a shareholder receives 1 new share for every 50 currently owned.

When a firm declares a **stock split**, it increases the number of shares outstanding. Because each share is now entitled to a smaller percentage of the firm's cash flow, the stock price should fall. For example, if the managers of a firm whose stock is selling at \$90 declare a three-for-one stock split, the price of a share of stock should fall to about \$30. A stock split strongly resembles a stock dividend except that it is usually much larger.

An alternative form of cash payout is a **stock repurchase.** Just as a firm may use cash to pay dividends, it may use cash to buy back shares of its stock. The shares are held by the corporation and accounted for as treasury stock.

19.2 Standard Method of Cash Dividend Payment

The decision to pay a dividend rests in the hands of the board of directors of the corporation. A dividend is distributable to shareholders of record on a specific date. When a dividend has been declared, it becomes a liability of the firm and cannot be easily rescinded by the corporation. The amount of the dividend is expressed as dollars per share (*dividend per share*), as a percentage of the market price (*dividend yield*), or as a percentage of earnings per share (*dividend payout*).

Figure 19.1

Example of Procedure for Dividend Payment

	— Thursday, January 15	Wednesday, January 28	Friday, January 30	
	Declaration date	Ex-dividend date	Record date	Payment date
1. Declaration	date: The board	l of directors decl	ares a pavmen	t of dividends.

- 2. *Record date:* The declared dividends are distributable to shareholders of record on a specific date.
- 3. *Ex-dividend date:* A share of stock becomes 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.
- 4. Payment date: The dividend checks are mailed to shareholders of record.

For a list of today's dividends, go to **www.earnings.com**.

The mechanics of a dividend payment can be illustrated by the example in Figure 19.1 and the following chronology:

- 1. *Declaration date:* On January 15 (the declaration date), the board of directors passes a resolution to pay a dividend of \$1 per share on February 16 to all holders of record on January 30.
- 2. *Date of record:* The corporation prepares a list on January 30 of all individuals believed to be stockholders as of this date. The word *believed* is important here: The dividend will not be paid to individuals whose notification of purchase is received by the company after January 30.
- 3. *Ex-dividend date:* The procedure for the date of record would be unfair if efficient brokerage houses could notify the corporation by January 30 of a trade occurring on January 29, whereas the same trade might not reach the corporation until February 2 if executed by a less efficient house. To eliminate this problem, all brokerage firms entitle stockholders to receive the dividend if they purchased the stock three business days before the date of record. The second day before the date of record, which is Wednesday, January 28, in our example, is called the *ex-dividend date.* Before this date the stock is said to trade *cum dividend.*
- 4. *Date of payment:* The dividend checks are mailed to the stockholders on February 16.

Obviously, the ex-dividend date is important because an individual purchasing the security before the ex-dividend date will receive the current dividend, whereas another individual purchasing the security on or after this date will not receive the dividend. The stock price will therefore fall on the ex-dividend date (assuming no other events occur). It is worthwhile to note that this drop is an indication of efficiency, not inefficiency, because the market rationally attaches value to a cash dividend. In a world with neither taxes nor transaction costs, the stock price would be expected to fall by the amount of the dividend:

Before ex-dividend date	Price = $(P + 1)$
On or after ex-dividend date	Price = P

This is illustrated in Figure 19.2.

The amount of the price drop may depend on tax rates. For example, consider the case with no capital gains taxes. On the day before a stock goes ex dividend, a

Figure 19.2

Price Behavior around the Ex-Dividend Date for a \$1 Cash Dividend



In a world without taxes, 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 *P* on the ex-date.

Before ex-date (-1) Price = (P + 1)Ex-date (0) Price = P

purchaser must decide either: (1) To buy the stock immediately and pay tax on the forthcoming dividend or (2) To buy the stock tomorrow, thereby missing the dividend. If all investors are in the 15 percent tax bracket and the quarterly dividend is \$1, the stock price should fall by \$.85 on the ex-dividend date. That is, if the stock price falls by this amount on the ex-dividend date, purchasers will receive the same return from either strategy.

As an example of the price drop on the ex-dividend date, we examine the relatively enormous dividend paid by investment advisory company Diamond Hill Investment Group in December 2010. The dividend was \$13 per share at a time when the stock price was around \$85, so the dividend was about 15 percent of the total stock price.

The stock went ex dividend on November 29, 2010. The stock price chart here shows the change in Diamond Hill stock four days prior to the ex-dividend date and on the ex-dividend date.



The stock closed at \$84.86 on November 26 (a Friday) and closed at \$72.19 on November 29–a drop of \$12.67. With a 15 percent tax rate on dividends, we would have expected a drop of \$11.05, so the actual price dropped slightly more than we would have expected. We discuss dividends and taxes in more detail in a subsequent section.

19.3 The Benchmark Case: An Illustration of the Irrelevance of Dividend Policy

We have stated in previous chapters that the value of a firm stems from its ability to generate and pay out its distributable (i.e., free) cash flow. Specially, we put forth the idea that the value of a share of stock should be equal to the present value of its future expected dividend payouts (and share repurchases, which we treat in the next section). This still stands. In this section, we discuss dividend policy, which we define as the timing of a firm's dividend payouts given the level of its distributable cash flow.

A powerful argument can be made that the timing of dividends when cash flows do not change does not matter. This will be illustrated with the Bristol Corporation. Bristol is an all-equity firm that started 10 years ago. The current financial managers know at the present time (Date 0) that the firm will dissolve in one year (Date 1). At Date 0 the managers are able to forecast cash flows with perfect certainty. The managers know that the firm will receive a cash flow of \$10,000 immediately and another \$10,000 next year. Bristol has no additional positive NPV projects.

CURRENT POLICY: DIVIDENDS SET EQUAL TO CASH FLOW

At the present time, dividends (Div) at each date are set equal to the available cash flow of \$10,000. The value of the firm can be calculated by discounting these dividends. This value is expressed as:

$$V_0 = \operatorname{Div}_0 + \frac{\operatorname{Div}_1}{1 + R_s}$$

where Div_0 and Div_1 are the cash flows paid out in dividends, and R_s is the discount rate. The first dividend is not discounted because it will be paid immediately.

Assuming $R_s = 10$ percent, the value of the firm is:

$$19,090.91 = 10,000 + \frac{10,000}{1.1}$$

If 1,000 shares are outstanding, the value of each share is:

$$\$19.09 = \$10 + \frac{\$10}{1.1}$$
 (19.1)

To simplify the example, we assume that the ex-dividend date is the same as the date of payment. After the imminent dividend is paid, the stock price will immediately fall to 9.09 (= 19.09 - 10). Several members of Bristol's board have expressed dissatisfaction with the current dividend policy and have asked you to analyze an alternative policy.

ALTERNATIVE POLICY: INITIAL DIVIDEND IS GREATER THAN CASH FLOW

Another policy is for the firm to pay a dividend of \$11 per share immediately, which is, of course, a total dividend payout of \$11,000. Because the available cash flow is only \$10,000, the extra \$1,000 must be raised in one of a few ways. Perhaps the simplest would be to issue \$1,000 of bonds or stock now (at Date 0). Assume that stock is issued and the new stockholders will desire enough cash flow at Date 1 to let them earn the required 10 percent return on their Date 0 investment. The new stockholders

will demand \$1,100 of the Date 1 cash flow, leaving only \$8,900 to the old stockholders. The dividends to the old stockholders will be these:

	Date 0	Date I
Aggregate dividends to old stockholders	\$11,000	\$8,900
Dividends per share	\$11.00	\$8.90

The present value of the dividends per share is therefore:

$$\$19.09 = \$11 + \frac{\$8.90}{1.1}$$
 (19.2)

Students often find it instructive to determine the price at which the new stock is issued. Because the new stockholders are not entitled to the immediate dividend, they would pay 8.09 (= 88.90/1.1) per share. Thus, 123.61 (= 1,000/8.09) new shares are issued.

THE INDIFFERENCE PROPOSITION

Note that the values in Equations 19.1 and 19.2 are equal. This leads to the initially surprising conclusion that the change in dividend policy did not affect the value of a share of stock as long as all distributable cash flow is paid out. However, on reflection, the result seems sensible. The new stockholders are parting with their money at Date 0 and receiving it back with the appropriate return at Date 1. In other words, they are taking on a zero NPV investment.

HOMEMADE DIVIDENDS

To illustrate the indifference investors have toward dividend policy in our example, we used present value equations. An alternative and perhaps more intuitively appealing explanation avoids the mathematics of discounted cash flows.

Suppose individual investor X prefers dividends per share of \$10 at both Dates 0 and 1. Would she be disappointed when informed that the firm's management is adopting the alternative dividend policy (dividends of \$11 and \$8.90 on the two dates, respectively)? Not necessarily: She could easily reinvest the \$1 of unneeded funds received on Date 0, yielding an incremental return of \$1.10 at Date 1. Thus, she would receive her desired net cash flow of 11 - 1 = 10 at Date 0 and 88.90 + 1.10 = 10 at Date 1.

Conversely, imagine investor Z preferring \$11 of cash flow at Date 0 and \$8.90 of cash flow at Date 1, who finds that management will pay dividends of \$10 at both Dates 0 and 1. He can sell off shares of stock at Date 0 to receive the desired amount of cash flow. That is, if he sells off shares (or fractions of shares) at Date 0 totaling \$1, his cash flow at Date 0 becomes 10 + 1 = 11. Because a \$1 sale of stock at Date 0 will reduce his dividends by \$1.10 at Date 1, his net cash flow at Date 1 would be 10 - 1.10 = 8.90.

The example illustrates how investors can make **homemade dividends**. In this instance, corporate dividend policy is being undone by a potentially dissatisfied stockholder. This homemade dividend is illustrated by Figure 19.3. Here the firm's cash flows of \$10 per share at both Dates 0 and 1 are represented by Point A. This point also represents the initial dividend payout. However, as we just saw, the firm could alternatively pay out \$11 per share at Date 0 and \$8.90 per share at Date 1, a strategy

Figure 19.3

Homemade Dividends: A Trade-off between Dividends per Share at Date 0 and Dividends per Share at Date I



The graph illustrates both (1) how managers can vary dividend policy and (2) how individuals can undo the firm's dividend policy.

Managers varying dividend policy: A firm paying out all cash flows immediately is at Point *A* on the graph. The firm could achieve Point *B* by issuing stock to pay extra dividends or achieve Point *C* by buying back old stock with some of its cash.

Individuals undoing the firm's dividend policy: Suppose the firm adopts the dividend policy represented by Point *B*: dividends per share of \$11 at Date 0 and \$8.90 at Date 1. An investor can reinvest \$1 of the dividends at 10 percent, which will place her at Point *A*. Suppose, alternatively, the firm adopts the dividend policy represented by Point *A*. An investor can sell off \$1 of stock at Date 0, placing him at Point *B*. No matter what dividend policy the firm establishes, a shareholder can undo it.

represented by Point *B*. Similarly, by either issuing new stock or buying back old stock, the firm could achieve a dividend payout represented by any point on the diagonal line.

The previous paragraph describes the choices available to the managers of the firm. The same diagonal line also represents the choices available to the shareholder. For example, if the shareholder receives a per-share dividend distribution of (\$11, \$8.90), he or she can either reinvest some of the dividends to move down and to the right on the graph or sell off shares of stock and move up and to the left.

The implications of the graph can be summarized in two sentences:

- 1. By varying dividend policy, managers can achieve any payout along the diagonal line in Figure 19.3.
- 2. Either by reinvesting excess dividends at Date 0 or by selling off shares of stock at this date, an individual investor can achieve any net cash payout along the diagonal line.

Thus, because both the corporation and the individual investor can move only along the diagonal line, dividend policy in this model is irrelevant. The changes the managers make in dividend policy can be undone by an individual who, by either reinvesting dividends or selling off stock, can move to a desired point on the diagonal line.

A TEST

You can test your knowledge of this material by examining these true statements:

- 1. Dividends are relevant.
- 2. Dividend policy is irrelevant.

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The first statement 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. In other words, if the dividend per share at a given date is raised while the dividend per share for each other date is held constant, the stock price will rise. This act can be accomplished by management decisions that improve productivity, increase tax savings, or strengthen product marketing. In fact, you may recall that in Chapter 9 we argued that the value of a firm's equity is equal to the discounted present value of all its future dividends.

The second statement is understandable once we realize that dividend policy cannot raise the dividend per share at one date while holding the dividend level per share constant at all other dates. Rather, dividend policy merely establishes the trade-off between dividends at one date and dividends at another date. As we saw in Figure 19.3, holding cash flows constant, an increase in Date 0 dividends can be accomplished only by a decrease in Date 1 dividends. The extent of the decrease is such that the present value of all dividends is not affected.

DIVIDENDS AND INVESTMENT POLICY

The preceding argument shows that an increase in dividends through issuance of new shares neither helps nor hurts the stockholders. Similarly, a reduction in dividends through share repurchase neither helps nor hurts stockholders. The key to this result is understanding that the overall level of cash flows is assumed to be fixed and that we are not changing the available positive net present value projects.

What about reducing capital expenditures to increase dividends? Earlier chapters show that a firm should accept all positive net present value projects. To do otherwise would reduce the value of the firm. Thus, we have an important point:

Firms should never give up a positive NPV project to increase a dividend (or to pay a dividend for the first time).

This idea was implicitly considered by Miller and Modigliani. One of the assumptions underlying their dividend irrelevance proposition was this: "The investment policy of the firm is set ahead of time and is not altered by changes in dividend policy."

19.4 Repurchase of Stock

Instead of paying dividends, a firm may use cash to repurchase shares of its own stock. Share repurchases have taken on increased importance in recent years. Consider Figure 19.4, which shows the aggregate dollar amounts of dividends, repurchases, and earnings for large U.S. firms in the years from 2004 to 2011. As can be seen, the amount of repurchases was more than the amount of dividends up to 2008. However, the amount of dividends exceeded the amount of repurchases in late 2008 and 2009. This trend reversed after 2009. Notice also from Figure 19.4 that there is "stickiness" to repurchases and dividend payouts. In late 2008 when aggregate corporate earnings turned negative, the level of dividends and share repurchases did not change much. More generally, the volatility of aggregate earnings has been greater than that of dividends and share repurchases.

Share repurchases are typically accomplished in one of three ways. First, companies may simply purchase their own stock, just as anyone would buy shares of a particular stock. In these *open market purchases*, the firm does not reveal itself as the

Figure 19.4

Earnings, Dividends, and Net Repurchases for U.S. Industrial Firms



SOURCE: Standard & Poor's Financial Services at www.standardandpoors.com/indices/market-attributes/en/us.

buyer. Thus, the seller does not know whether the shares were sold back to the firm or to just another investor.

Second, the firm could institute a *tender offer*. Here, the firm announces to all of its stockholders that it is willing to buy a fixed number of shares at a specific price. For example, suppose Arts and Crafts (A&C), Inc., has 1 million shares of stock outstanding, with a stock price of \$50 per share. The firm makes a tender offer to buy back 300,000 shares at \$60 per share. A&C chooses a price above \$50 to induce shareholders to sell—that is, tender—their shares. In fact, if the tender price is set high enough, shareholders may want to sell more than the 300,000 shares. In the extreme case where all outstanding shares are tendered, A&C will buy back 3 out of every 10 shares that a shareholder has. On the other hand, if shareholders do not tender enough shares, the offer can be canceled. A method related to a tender offer is the *Dutch auction*. Here the firm does not set a fixed price for the shares to be sold. Instead, the firm conducts an auction in which it bids for shares. The firm announces the number of shares it is willing to buy back at various prices, and shareholders indicate how many shares they are willing to sell at the various prices. The firm will then pay the lowest price that will achieve its goal.

Finally, firms may repurchase shares from specific individual stockholders, a procedure called a *targeted repurchase*. For example, suppose the International Biotechnology Corporation purchased approximately 10 percent of the outstanding stock of the Prime Robotics Company (P-R Co.) in April at around \$38 per share. At that time, International Biotechnology announced to the Securities and Exchange Commission that it might eventually try to take control of P-R Co. In May, P-R Co. repurchased the International Biotechnology holdings at \$48 per share, well above the market price at that time. This offer was not extended to other shareholders.

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Companies engage in targeted repurchases for a variety of reasons. In some rare cases, a single large stockholder can be bought out at a price lower than that in a tender offer. The legal fees in a targeted repurchase may also be lower than those in a more typical buyback. In addition, the shares of large stockholders are often repurchased to avoid a takeover unfavorable to management.

We now consider an example of a repurchase presented in the theoretical world of a perfect capital market. We next discuss real-world factors involved in the repurchase decision.

DIVIDEND VERSUS REPURCHASE: CONCEPTUAL EXAMPLE

Imagine that Telephonic Industries has excess cash of \$300,000 (or \$3 per share) and is considering an immediate payment of this amount as an extra dividend. The firm forecasts that, after the dividend, earnings will be \$450,000 per year, or \$4.50 for each of the 100,000 shares outstanding. Because the price-earnings ratio is 6 for comparable companies, the shares of the firm should sell for $27 (= 4.50 \times 6)$ after the dividend is paid. These figures are presented in the top half of Table 19.1. Because the dividend is \$3 per share, the stock would have sold for \$30 a share *before* payment of the dividend.

Alternatively, the firm could use the excess cash to repurchase some of its own stock. Imagine that a tender offer of \$30 per share is made. Here, 10,000 shares are repurchased so that the total number of shares remaining is 90,000. With fewer shares outstanding, the earnings per share will rise to \$5 (=\$450,000/90,000). The priceearnings ratio remains at 6 because both the business and financial risks of the firm are the same in the repurchase case as they were in the dividend case. Thus, the price of a share after the repurchase is \$30 (= 5×6). These results are presented in the bottom half of Table 19.1.

If commissions, taxes, and other imperfections are ignored in our example, the stockholders are indifferent between a dividend and a repurchase. With dividends each stockholder owns a share worth \$27 and receives \$3 in dividends, so that the total value is \$30. This figure is the same as both the amount received by the selling stockholders and the value of the stock for the remaining stockholders in the repurchase case.

This example illustrates the important point that, in a perfect market, the firm is indifferent between a dividend payment and a share repurchase. This result is quite similar to the indifference propositions established by MM for debt versus equity financing and for dividends versus capital gains.

9.1 versus		For Entire Firm	Per Share
se Example	Extra Dividend		(100,000 shares outstanding)
honic	Proposed dividend	\$ 300,000	\$ 3.00
5	Forecasted annual earnings after dividend	450,000	4.50
	Market value of stock after dividend	2,700,000	27.00
	Repurchase		(90,000 shares outstanding)
	Forecasted annual earnings after repurchase	\$ 450,000	\$ 5.00
	Market value of stock after repurchase	2,700,000	30.00

Table 1

Dividend Repurcha for Telep Industrie

You may often read in the popular financial press that a repurchase agreement is beneficial because earnings per share increase. Earnings per share do rise for Telephonic Industries if a repurchase is substituted for a cash dividend: The EPS is \$4.50 after a dividend and \$5 after the repurchase. This result holds because the drop in shares after a repurchase implies a reduction in the denominator of the EPS ratio.

However, the financial press frequently places undue emphasis on EPS figures in a repurchase agreement. Given the irrelevance propositions we have discussed, the increase in EPS here is not beneficial. Table 19.1 shows that, in a perfect capital market, the total value to the stockholder is the same under the dividend payment strategy as under the repurchase strategy.

DIVIDENDS VERSUS REPURCHASES: REAL-WORLD CONSIDERATIONS

We previously referred to Figure 19.4, which showed growth in share repurchases relative to dividends. In fact, most firms that pay dividends also repurchase shares of stock. This suggests that repurchasing shares of stock is not always a substitute for paying dividends but rather a complement to it. For example, recently the number of U.S. industrial firms that pay dividends only or repurchase only is about the same as the number of firms paying both dividends and repurchasing shares. Why do some firms choose repurchases over dividends? Here are perhaps five of the most common reasons.

I. Flexibility Firms often view dividends as a commitment to their stockholders and are quite hesitant to reduce an existing dividend. Repurchases do not represent a similar commitment. Thus, a firm with a permanent increase in cash flow is likely to increase its dividend. Conversely, a firm whose cash flow increase is only temporary is likely to repurchase shares of stock.

2. Executive Compensation Executives are frequently given stock options as part of their overall compensation. Let's revisit the Telephonic Industries example of Table 19.1, where the firm's stock was selling at \$30 when the firm was considering either a dividend or a repurchase. Further imagine that Telephonic had granted 1,000 stock options to its CEO, Ralph Taylor, two years earlier. At that time, the stock price was, say, only \$20. This means that Mr. Taylor can buy 1,000 shares for \$20 a share at any time between the grant of the options and their expiration, a procedure called exercising the options. His gain from exercising is directly proportional to the rise in the stock price above \$20. As we saw in the example, the price of the stock would fall to \$27 following a dividend but would remain at \$30 following a repurchase. The CEO would clearly prefer a repurchase to a dividend because the difference between the stock price and the exercise price of \$20 would be \$10 (= \$30 - \$20) following the repurchase but only \$7 (= \$27 - \$20) following the dividend. Existing stock options will always have greater value when the firm repurchases shares instead of paying a dividend because the stock price will be greater after a repurchase than after a dividend.

3. Offset to Dilution In addition, the exercise of stock options increases the number of shares outstanding. In other words, exercise causes dilution of the stock. Firms frequently buy back shares of stock to offset this dilution. However, it is hard to argue that this is a valid reason for repurchase. As we showed in

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Table 19.1, repurchase is neither better nor worse for the stockholders than a dividend. Our argument holds whether or not stock options have been exercised previously.

4. Undervaluation Many companies buy back stock because they believe that a repurchase is their best investment. This occurs more frequently when managers believe that the stock price is temporarily depressed.

The fact that some companies repurchase their stock when they believe it is undervalued does not imply that the management of the company must be correct; only empirical studies can make this determination. The immediate stock market reaction to the announcement of a stock repurchase is usually quite favorable. In addition, some empirical work has shown that the long-term stock price performance of securities after a buyback is better than the stock price performance of comparable companies that do not repurchase.

5. Taxes Because taxes for both dividends and share repurchases are treated in depth in the next section, suffice it to say at this point that repurchases provide a tax advantage over dividends.

19.5 Personal Taxes, Dividends, and Stock Repurchases

Section 19.3 asserted that in a world without taxes and other frictions, the timing of dividend payout does not matter if distributable cash flows do not change. Similarly, Section 19.4 concluded that the choice between a share repurchase and a dividend is irrelevant in a world of this type. This section examines the effect of taxes on both dividends and repurchases. Our discussion is facilitated by classifying firms into two types: Those without sufficient cash to pay a dividend and those with sufficient cash to do so.

FIRMS WITHOUT SUFFICIENT CASH TO PAY A DIVIDEND

It is simplest to begin with a firm without cash that is owned by a single entrepreneur. If this firm should decide to pay a dividend of \$100, it must raise capital. The firm might choose among a number of different stock and bond issues to pay the dividend. However, for simplicity, we assume that the entrepreneur contributes cash to the firm by issuing stock to himself. This transaction, diagrammed in the left side of Figure 19.5, would clearly be a *wash* in a world of no taxes. \$100 cash goes into the firm when stock is issued and is immediately paid out as a dividend. Thus, the entrepreneur neither benefits nor loses when the dividend is paid, a result consistent with Miller–Modigliani.

Now assume that dividends are taxed at the owner's personal tax rate of 15 percent. The firm still receives \$100 upon issuance of stock. However, the entrepreneur does not get to keep the full \$100 dividend. Instead the dividend payment is taxed, implying that the owner receives only \$85 net after tax. Thus, the entrepreneur loses \$15.

Though the example is clearly contrived and unrealistic, similar results can be reached for more plausible situations. Thus, financial economists generally agree that in a world of personal taxes, firms should not issue stock to pay dividends.

Figure 19.5

Firm Issues Stock to Pay a Dividend



In the no-tax case, the entrepreneur receives the \$100 in dividends that he gave to the firm when purchasing stock. The entire operation is called a *wash;* in other words, it has no economic effect. With taxes, the entrepreneur still receives \$100 in dividends. However, he must pay \$15 in taxes to the IRS. The entrepreneur loses and the IRS wins when a firm issues stock to pay a dividend.

The direct costs of issuance will add to this effect. Investment bankers must be paid when new capital is raised. Thus, the net receipts due to the firm from a new issue are less than 100 percent of total capital raised. Because the size of new issues can be lowered by a reduction in dividends, we have another argument in favor of a low-dividend policy.

Of course, our advice not to finance dividends through new stock issues might need to be modified somewhat in the real world. A company with a large and steady cash flow for many years in the past might be paying a regular dividend. If the cash flow unexpectedly dried up for a single year, should new stock be issued so that dividends could be continued? Although our previous discussion would imply that new stock should not be issued, many managers might issue the stock anyway for practical reasons. In particular, stockholders appear to prefer dividend stability. Thus, managers might be forced to issue stock to achieve this stability, knowing full well the adverse tax consequences.

FIRMS WITH SUFFICIENT CASH TO PAY A DIVIDEND

The previous discussion argued that in a world with personal taxes, a firm should not issue stock to pay a dividend. Does the tax disadvantage of dividends imply the stronger policy, "Never, under any circumstances, pay dividends in a world with personal taxes"?

We argue next that this prescription does not necessarily apply to firms with excess cash. To see this, imagine a firm with \$1 million in extra cash after selecting all positive NPV projects and determining the level of prudent cash balances. The firm might consider the following alternatives to a dividend:

1. Select additional capital budgeting projects. Because the firm has taken all the available positive NPV projects already, it must invest its excess cash in negative NPV projects. This is clearly a policy at variance with the principles of corporate finance.

In spite of our distaste for this policy, researchers have suggested that many managers purposely take on negative NPV projects in lieu of paying dividends.¹ The idea here is that managers would rather keep the funds in the firm because their prestige, pay, and perquisites are often tied to the firm's size. Although managers may help themselves here, they are hurting stockholders. We broached this subject in the section titled "Free Cash Flow" in Chapter 17, and we will have more to say about it later in this chapter.

- 2. Acquire other companies. To avoid the payment of dividends, a firm might use excess cash to acquire another company. This strategy has the advantage of acquiring profitable assets. However, a firm often incurs heavy costs when it embarks on an acquisition program. In addition, acquisitions are invariably made above the market price. Premiums of 20 to 80 percent are not uncommon. Because of this, a number of researchers have argued that mergers are not generally profitable to the acquiring company, even when firms are merged for a valid business purpose. Therefore, a company making an acquisition merely to avoid a dividend is unlikely to succeed.
- 3. *Purchase financial assets.* The strategy of purchasing financial assets in lieu of a dividend payment can be illustrated with the following example.

EXAMPLE 19.1

Dividends and Taxes The Regional Electric Company has \$1,000 of extra cash. It can retain the cash and invest it in Treasury bills yielding 10 percent, or it can pay the cash to shareholders as a dividend. Shareholders can also invest in Treasury bills with the same yield. Suppose the corporate tax rate is 34 percent, and the personal tax rate is 28 percent for all individuals. However, the maximum tax rate on dividends is 15 percent. How much cash will investors have after five years under each policy? If dividends are paid now, shareholders will receive:

$$1,000 \times (1 - .15) = 850$$

today after taxes. Because their return after personal tax on Treasury bills is 7.2 [=10 \times (1 - .28)] percent, shareholders will have:

in five years. Note that interest income is taxed at the personal tax rate (28 percent in this example), but dividends are taxed at the lower rate of 15 percent.

If Regional Electric Company retains the cash to invest in Treasury bills, its aftertax interest rate will be .066 [=.10 \times (1 - .34)]. At the end of five years, the firm will have:

$$(1.066)^5 = (1.376.53)^5$$

If these proceeds are then paid as a dividend, the stockholders will receive:

after personal taxes at Date 5. The value in Equation 19.3 is greater than that in Equation 19.4, implying that cash to stockholders will be greater if the firm pays the dividend now.

This example shows that for a firm with extra cash, the dividend payout decision will depend on personal and corporate tax rates. If personal tax rates are higher than corporate tax rates, a firm will have an incentive to reduce dividend payouts. However, if personal tax rates are lower than corporate tax rates, a firm will have an incentive to pay out any excess cash as dividends.

¹See, for example, M. C. Jensen, "Agency Costs of Free Cash Flow, Corporate Finance, and Takeovers," *American Economic Review* (May 1986).

In the United States, both the highest marginal tax rate for individuals and the corporate tax rate were 35 percent in 2012. Because many investors face marginal tax rates well below the maximum, it appears that firms have an incentive not to hoard cash.

However, a quirk in the tax code provides an offsetting incentive. In particular, 70 percent of the dividends that one corporation receives from another corporation are excluded from corporate tax.² Individuals are not granted this exclusion. The quirk increases the likelihood that proceeds will be higher if the firm invests cash in other dividend-paying stocks rather than paying out cash as a dividend.

The firm's decision to invest in financial assets or to pay a dividend is a complex one, depending on the tax rate of the firm, the marginal tax rates of its investors, and the application of the dividend exclusion. While there are likely many real-world situations where the numbers favor investment in financial assets, few companies actually seem to hoard cash in this manner without limit. The reason is that Section 532 of the Internal Revenue Code penalizes firms exhibiting "improper accumulation of surplus." Thus, in the final analysis, the purchase of financial assets, like selecting negative NPV projects and acquiring other companies, does not obviate the need for companies with excess cash to pay dividends.

4. *Repurchase shares.* The example we described in the previous section showed that investors are indifferent between share repurchases and dividends in a world without taxes and transaction costs. However, under current tax law, stockholders generally prefer a repurchase to a dividend.

As an example, consider an individual receiving a dividend of \$1 on each of 100 shares of a stock. With a 15 percent tax rate, that individual would pay taxes of \$15 on the dividend. Selling shareholders would pay lower taxes if the firm repurchased \$100 of existing shares. This occurs because taxes are paid only on the *profit* from a sale. The individual's gain on a sale would be only \$40 if the shares sold for \$100 were originally purchased for, say, \$60. The capital gains tax would be \$6 (= $.15 \times$ \$40), a number below the tax on dividends of \$15. Note that the tax from a repurchase is less than the tax on a dividend even though the same 15 percent tax rate applies to both the repurchase and the dividend.

Of all the alternatives to dividends mentioned in this section, the strongest case can be made for repurchases. In fact, academics have long wondered why firms *ever* pay a dividend instead of repurchasing stock. There have been at least two possible reasons for avoiding repurchases. First, Grullon and Michaely point out that in the past the Securities and Exchange Commission (SEC) had accused some firms undergoing share repurchase programs of illegal price manipulation.³ However, these authors indicate that SEC Rule 10b-18, adopted in 1982, provides guidelines for firms to avoid the charge of price manipulation. These guidelines are relatively easy to follow, so firms should not have to worry about this charge today. In fact, Grullon and Michaely believe that the large increase in buyback programs in recent years is at least partially the result

²This exclusion applies if the firm owns less than 20 percent of the stock in the other company. The exclusion rises to 80 percent if the firm owns more than 20 percent of the stock of the other company and is 100 percent if the firm owns more than 80 percent of the stock of the other company. Corporations are not granted an exclusion for interest earned on bonds. ³See Gustavo Grullon and Roni Michaely, "Dividends, Share Repurchases, and the Substitution Hypothesis," *Journal of Finance* (August 2002), p. 1677.

of 10b-18. Second, the IRS can penalize firms repurchasing their own stocks if the only reason is to avoid the taxes that would be levied on dividends. However, this threat has not materialized with the growth in corporate repurchases. Thus, these two reasons do not seem to justify the avoidance of repurchases.

SUMMARY OF PERSONAL TAXES

This section suggests that because of personal taxes, firms have an incentive to reduce dividends. For example, they might increase capital expenditures, acquire other companies, or purchase financial assets. However, due to financial considerations and legal constraints, rational firms with large cash flows will likely exhaust these activities with plenty of cash left over for dividends.

It is harder to explain why firms pay dividends instead of repurchasing shares. The tax savings from repurchases can be significant, and fear of either the SEC or the IRS seems overblown. Academics are of two minds here. Some argue that corporations were simply slow to grasp the benefits from repurchases. However, since the idea has firmly caught on, the trend toward replacement of dividends with repurchases could continue. Others argue that companies have paid dividends all along for good reasons. We consider potential benefits of dividends in the next section.

19.6 Real-World Factors Favoring a High-Dividend Policy

The previous section pointed out that because individuals pay taxes on dividends, financial managers might seek ways to reduce dividends. While we discussed the problems with taking on more capital budgeting projects, acquiring other firms, and hoarding cash, we stated that a share repurchase has many of the benefits of a dividend with less of a tax disadvantage. This section considers reasons why a firm might pay its shareholders high dividends even in the presence of personal taxes on these dividends.

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 argument further states that these individuals would bid up the stock price should dividends rise and bid down the stock price should dividends fall.

This argument does not hold in perfect capital markets because an individual preferring high current cash flow but holding low-dividend securities could easily sell off shares to provide the necessary funds. Thus in a world of no transaction costs, a high-current-dividend policy would be of no value to the stockholder.

However, the current income argument is relevant in the real world. Stock sales involve brokerage fees and other transaction costs—direct cash expenses that could be avoided by an investment in high-dividend securities. In addition, stock sales are time-consuming, further leading investors to buy high-dividend securities.

To put this argument in perspective, remember that financial intermediaries such as mutual funds can perform repackaging transactions at low cost. Such intermediaries could buy low-dividend stocks and, by a controlled policy of realizing gains, pay their investors at a higher rate.

BEHAVIORAL FINANCE

Suppose it turned out that the transaction costs in selling no-dividend securities could not account for the preference of investors for dividends. Would there still be a reason for high dividends? We introduced the topic of behavioral finance in Chapter 14, pointing out that the ideas of behaviorists represent a strong challenge to the theory of efficient capital markets. It turns out that behavioral finance also has an argument for high dividends.

The basic idea here concerns *self-control*, a concept that, though quite important in psychology, has received virtually no emphasis in finance. Although we cannot review all that psychology has to say about self-control, let's focus on one example losing weight. Suppose Al Martin, a college student, just got back from the Christmas break more than a few pounds heavier than he would like. Everyone would probably agree that diet and exercise are the two ways to lose weight. But how should Al put this approach into practice? (We'll focus on exercise, though the same principle would apply to diet as well.) One way—let's call it the economists' way—would involve trying to make rational decisions. Each day Al would balance the costs and the benefits of exercising. Perhaps he would choose to exercise on most days because losing the weight is important to him. However, when he is too busy with exams, he might rationally choose not to exercise because he cannot afford the time. And he wants to be socially active as well. So he may rationally choose to avoid exercise on days when parties and other social commitments become too time-consuming.

This seems sensible—at first glance. The problem is that he must make a choice every day, and there may simply be too many days when his lack of self-control gets the better of him. He may tell himself that he doesn't have the time to exercise on a particular day, simply because he is starting to find exercise boring, not because he really doesn't have the time. Before long, he is avoiding exercise on most days—and overeating in reaction to the guilt from not exercising!

Is there an alternative? One way would be to set rigid rules. Perhaps Al decides to exercise five days a week *no matter what*. This is not necessarily the best approach for everyone, but there is no question that many of us (perhaps most of us) live by a set of rules. For example, Shefrin and Statman⁴ suggest some typical rules:

- Jog at least two miles a day.
- Do not consume more than 1,200 calories per day.
- Bank the wife's salary and spend from only the husband's paycheck.
- Save at least 2 percent of every paycheck for children's college education and never withdraw from this fund.
- Never touch a drop of alcohol.

What does this have to do with dividends? Investors must also deal with selfcontrol. Suppose a retiree wants to consume \$20,000 a year from savings, in addition to Social Security and her pension. On one hand, she could buy stocks with a dividend yield high enough to generate \$20,000 in dividends. On the other hand, she could place her savings in no-dividend stocks, selling off \$20,000 each year for consumption. Though these two approaches seem equivalent financially, the second one may allow for too much leeway. If lack of self-control gets the better of her, she might sell off too

⁴Hersh M. Shefrin and Meir Statman, "Explaining Investor Preference for Cash Dividends," *Journal of Financial Economics* 13 (1984).

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much, leaving little for her later years. Better, perhaps, to short-circuit this possibility by investing in dividend-paying stocks with a firm personal rule of *never* "dipping into principal." Although behaviorists do not claim that this approach is for everyone, they argue that enough people think this way to explain why firms pay dividends—even though, as we said earlier, dividends are tax disadvantaged.

Does behavioral finance argue for increased stock repurchases as well as increased dividends? The answer is no, because investors will sell the stock that firms repurchase. As we have said, selling stock involves too much leeway. Investors might sell too many shares of stock, leaving little for later years. Thus, the behaviorist argument may explain why companies pay dividends in a world with personal taxes.

AGENCY COSTS

Although stockholders, bondholders, and management form firms for mutually beneficial reasons, one party may later gain at the other's expense. For example, take the potential conflict between bondholders and stockholders. Bondholders would like stockholders to leave as much cash as possible in the firm so that this cash would be available to pay the bondholders during times of financial distress. Conversely, stockholders would like to keep this extra cash for themselves. That's where dividends come in. Managers, acting on behalf of the stockholders, may pay dividends simply to keep the cash away from the bondholders. In other words, a dividend can be viewed as a wealth transfer from bondholders to stockholders. There is empirical evidence for this view of things. For example, DeAngelo and DeAngelo find that firms in financial distress are reluctant to cut dividends.⁵ Of course, bondholders know about the propensity of stockholders to transfer money out of the firm. To protect themselves, bondholders frequently create loan agreements stating that dividends can be paid only if the firm has earnings, cash flow, and working capital above specified levels.

Although managers may be looking out for stockholders in any conflict with bondholders, managers may pursue selfish goals at the expense of stockholders in other situations. For example, as discussed in a previous chapter, managers might pad expense accounts, take on pet projects with negative NPVs, or simply not work hard. Managers find it easier to pursue these selfish goals when the firm has plenty of free cash flow. After all, one cannot squander funds if the funds are not available in the first place. And that is where dividends come in. Several scholars have suggested that the board of directors can use dividends to reduce agency costs.⁶ By paying dividends equal to the amount of "surplus" cash flow, a firm can reduce management's ability to squander the firm's resources.

This discussion suggests a reason for increased dividends, but the same argument applies to share repurchases as well. Managers, acting on behalf of stockholders, can just as easily keep cash from bondholders through repurchases as through dividends. And the board of directors, also acting on behalf of stockholders, can reduce the cash available to spendthrift managers just as easily through repurchases as through dividends. Thus, the presence of agency costs is not an argument for dividends over repurchases. Rather, agency costs imply firms may increase either dividends or share repurchases rather than hoard large amounts of cash.

⁵H. DeAngelo and L. DeAngelo, "Dividend Policy and Financial Distress: An Empirical Investigation of Troubled NYSE Firms," *Journal of Finance* 45 (1990).

⁶Michael Rozeff, "How Companies Set Their Dividend Payout Ratios," in *The Revolution in Corporate Finance*, edited by Joel M. Stern and Donald H. Chew (New York: Basil Blackwell, 1986). See also Robert S. Hansen, Raman Kumar, and Dilip K. Shome, "Dividend Policy and Corporate Monitoring: Evidence from the Regulated Electric Utility Industry," *Financial Management* (Spring 1994).

INFORMATION CONTENT OF DIVIDENDS AND DIVIDEND SIGNALING

Information Content While there are many things researchers do not know about dividends, we know one thing for sure: The stock price of a firm generally rises when the firm announces a dividend increase and generally falls when a dividend reduction is announced. For example, Asquith and Mullins estimate that stock prices rise about 3 percent following announcements of dividend initiations.⁷ Michaely, Thaler, and Womack find that stock prices fall about 7 percent following announcements of dividend omissions.⁸

The question is how we should *interpret* this empirical evidence. Consider the following three positions on dividends:

- 1. From the homemade dividend argument of MM, dividend policy is irrelevant, given that future earnings (and cash flow) are held constant.
- 2. Because of tax effects, a firm's stock price is negatively related to the current dividend when future earnings (or cash flow) are held constant.
- 3. Because of stockholders' desire for current income, a firm's stock price is positively related to its current dividend, even when future earnings (or cash flow) are held constant.

At first glance, the empirical evidence that stock prices rise when dividend increases are announced may seem consistent with Position 3 and inconsistent with Positions 1 and 2. In fact, many writers have said this. However, other authors have countered that the observation itself is consistent with all three positions. They point out that companies do not like to cut a dividend. Thus, firms will raise the dividend only when future earnings, cash flow, and so on are expected to rise enough so that the dividend is not likely to be reduced later to its original level. A dividend increase is management's *signal* to the market that the firm is expected to do well.

It is the expectation of good times, and not only the stockholders' affinity for current income, that raises the stock price. The rise in the stock price following the dividend signal is called the **information content effect** of the dividend. To recapitulate, imagine that the stock price is unaffected or even negatively affected by the level of dividends, given that future earnings (or cash flow) are held constant. Nevertheless, the information content effect implies that the stock price may rise when dividends are raised—if dividends simultaneously cause stockholders to *increase* their expectations of future earnings and cash flow.

Dividend Signaling We just argued that the market infers a rise in earnings and cash flows from a dividend increase, leading to a higher stock price. Conversely, the market infers a decrease in cash flows from a dividend reduction, leading to a fall in stock price. This raises an interesting corporate strategy: Could management increase dividends just to make the market *think* that cash flows will be higher, even when management knows that cash flows will not rise?

While this strategy may seem dishonest, academics take the position that managers frequently attempt the strategy. Academics begin with the following accounting identity for an all-equity firm:

Cash flow⁹ = Capital expenditures + Dividends
$$(19.5)$$

⁷P. Asquith and D. Mullins, Jr., "The Impact of Initiating Dividend Payments on Shareholders' Wealth," *Journal of Business* (January 1983).

⁸R. Michaely, R. H. Thaler, and K. Womack, "Price Reactions to Dividend Initiations and Omissions: Overreactions or Drift?" *Journal of Finance* 50 (1995).

⁹The correct representation of Equation 19.5 involves cash flow, not earnings. However, with little loss of understanding, we could discuss dividend signaling in terms of earnings, not cash flow.

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Equation 19.5 must hold if a firm is neither issuing nor repurchasing stock. That is, the cash flow from the firm must go somewhere. If it is not paid out in dividends, it must be used in some expenditure. Whether the expenditure involves a capital budgeting project or a purchase of Treasury bills, it is still an expenditure.

Imagine that we are in the middle of the year and investors are trying to make some forecast of cash flow over the entire year. These investors may use Equation 19.5 to estimate cash flow. For example, suppose the firm announces that current dividends will be \$50 million and the market believes that capital expenditures are \$80 million. The market would then determine cash flow to be \$130 million (=\$50 + \$80).

Now, suppose that the firm had, alternatively, announced a dividend of \$70 million. The market might assume that cash flow remains at \$130 million, implying capital expenditures of \$60 million (=\$130 - \$70). Here, the increase in dividends would hurt stock price because the market anticipates valuable capital expenditures will be crowded out. Alternatively, the market might assume that capital expenditures remain at \$80 million, implying the estimate of cash flow to be \$150 million (=\$70 + \$80). Stock price would likely rise here because stock prices usually increase with cash flow. In general, academics believe that models where investors assume capital expenditures remain the same are more realistic. Thus, an increase in dividends raises stock price.

Now we come to the incentives of managers to fool the public. Suppose you are a manager who wants to boost stock price, perhaps because you are planning to sell some of your personal holdings of the company's stock immediately. You might increase dividends so that the market would raise its estimate of the firm's cash flow, thereby also boosting the current stock price.

If this strategy is appealing, would anything prevent you from raising dividends without limit? The answer is yes because there is also a *cost* to raising dividends. That is, the firm will have to forgo some of its profitable projects. Remember that cash flow in Equation 19.5 is a constant, so an increase in dividends is obtained only by a reduction in capital expenditures. At some point the market will learn that cash flow has not increased, but instead profitable capital expenditures have been cut. Once the market absorbs this information, stock price should fall below what it would have been had dividends never been raised. Thus, if you plan to sell, say, half of your shares and retain the other half, an increase in dividends should help you on the immediate sale but hurt you when you sell your remaining shares years later. So your decision on the level of dividends will be based, among other things, on the timing of your personal stock sales.

This is a simplified example of dividend signaling, where the manager sets dividend policy based on maximum benefit for himself.¹⁰ Alternatively, a given manager may have no desire to sell his shares immediately but knows that, at any one time, plenty of ordinary shareholders will want to do so. Thus, for the benefit of shareholders in general, a manager will always be aware of the trade-off between current and future stock price. And this, then, is the essence of signaling with dividends. It is not enough for a manager to set dividend policy to maximize the true (or intrinsic) value of the firm. He must also consider the effect of dividend policy on the current stock price, even if the current stock price does not reflect true value.

Does a motive to signal imply that managers will increase dividends rather than share repurchases? The answer is likely no: Most academic models imply that

¹⁰Papers examining fully developed models of signaling include S. Bhattacharya, "Imperfect Information, Dividend Policy, and 'the Bird in the Hand' Fallacy," *Bell Journal of Economics* 10 (1979); S. Bhattacharya, "Non-dissipative Signaling Structure and Dividend Policy," *Quarterly Journal of Economics* 95 (1980), p. 1; S. Ross, "The Determination of Financial Structure: The Incentive Signalling Approach," *Bell Journal of Economics* 8 (1977), p. 1; M. Miller and K. Rock, "Dividend Policy under Asymmetric Information," *Journal of Finance* (1985).

dividends and share repurchases are perfect substitutes.¹¹ Rather, these models indicate that managers will consider reducing capital spending (even on projects with positive NPVs) to increase either dividends or share repurchases.

19.7 The Clientele Effect: A Resolution of Real-World Factors?

In the previous two sections, we pointed out that the existence of personal taxes favors a low-dividend policy, whereas other factors favor high dividends. The financial profession had hoped that it would be easy to determine which of these sets of factors dominates. Unfortunately, after years of research, no one has been able to conclude which of the two is more important. This is surprising: we might be skeptical that the two sets of factors would cancel each other out so perfectly.

However, one particular idea, known as the *clientele effect*, implies that the two sets of factors are likely to cancel each other out after all. To understand this idea, let's separate investors in high tax brackets from those in low tax brackets. Individuals in high tax brackets likely prefer either no or low dividends. Low tax bracket investors generally fall into three categories. First, there are individual investors in low brackets. They are likely to prefer some dividends if they desire current income. Second, pension funds pay no taxes on either dividends or capital gains. Because they face no tax consequences, pension funds will also prefer dividends if they have a preference for current income. Finally, corporations can exclude at least 70 percent of their dividend income but cannot exclude any of their capital gains. Thus, corporations are likely to prefer high-dividend stocks, even without a preference for current income.

Suppose that 40 percent of all investors prefer high dividends and 60 percent prefer low dividends, yet only 20 percent of firms pay high dividends while 80 percent pay low dividends. Here, the high-dividend firms will be in short supply, implying that their stock should be bid up while the stock of low-dividend firms should be bid down.

However, the dividend policies of all firms need not be fixed in the long run. In this example, we would expect enough low-dividend firms to increase their payout so that 40 percent of the firms pay high dividends and 60 percent of the firms pay low dividends. After this adjustment, no firm will gain from changing its dividend policy. Once payouts of corporations conform to the desires of stockholders, no single firm can affect its market value by switching from one dividend strategy to another.

Clienteles are likely to form in the following way:

Group	Stocks
Individuals in high tax brackets Individuals in low tax brackets	Zero- to low-payout stocks Low- to medium-payout stocks
Tax-free institutions	Medium-payout stocks
Corporations	High-payout stocks

¹¹Signaling models where dividends and repurchases are not perfect substitutes are contained in Franklin Allen, Antonio Bernardo, and Ivo Welch, "A Theory of Dividends Based on Tax Clienteles," *Journal of Finance* (2002) and Kose John and Joseph Williams, "Dividends, Dilution and Taxes: A Signalling Equilibrium," *Journal of Finance* (1985).

Figure 19.6 Preferences of Investors for Dividend Yield



All stocks are ranked on their dividend yields and placed into five quintile portrollos. The figure shows the weight of each quintile in the portfolios of low-, medium-, and high-income investors. Relative to those with lower income, high-income investors place a greater percentage of their assets in low-dividend stocks and a smaller percentage in high-dividend stocks.

SOURCE: Adapted from Figure 2 of John Graham and Alok Kumar, "Do Dividend Clienteles Exist? Evidence on Dividend Preferences of Retail Investors," *Journal of Finance* 61 (2006), pp. 1305–36.

To see if you understand the clientele effect, consider the following statement: "In a world where many investors like high dividends, a firm can boost its share price by increasing its dividend payout ratio." True or false?

The statement is likely to be false. As long as there are already enough highdividend firms to satisfy dividend-loving investors, a firm will not be able to boost its share price by paying high dividends. A firm can boost its stock price only if an *unsatisfied* clientele exists.

Our discussion of clienteles followed from the fact that tax brackets vary across investors. If shareholders care about taxes, stocks should attract clienteles based on dividend yield. Is there any evidence that this is the case?

Consider Figure 19.6. Here, John Graham and Alok Kumar¹² rank common stocks by their dividend yields (the ratio of dividend to stock price) and place them into five portfolios, called quintiles. The bottom quintile contains the 20 percent of stocks with the lowest dividend yields; the next quintile contains the 20 percent of stocks with the next lowest dividend yields; and so on. The figure shows the weight of each quintile in the portfolios of low-, medium-, and high-income investors. As can be seen, relative to low-income investors, high-income investors put a greater

¹²John Graham and Alok Kumar, "Do Dividend Clienteles Exist? Evidence on Dividend Preferences of Retail Investors," *Journal of Finance* (June 2006).

percentage of their assets into low-dividend securities. Conversely, again relative to low-income investors, high-income investors put a smaller percentage of their assets into high-dividend securities.

19.8 What We Know and Do Not Know about Dividend Policy

CORPORATE DIVIDENDS ARE SUBSTANTIAL

We pointed out earlier in the chapter that dividends are tax disadvantaged relative to capital gains because dividends are taxed upon payment whereas taxes on capital gains are deferred until sale. Nevertheless, dividends in the U.S. economy are substantial. For example, consider Figure 19.7, which shows the ratio of aggregate dividends to aggregate earnings for all U.S. firms from 1980 to 2010. The ratio was approximately 61 percent in 2010.

We might argue that the taxation on dividends is actually minimal, perhaps because dividends are paid primarily to individuals in low tax brackets (currently the tax rate on cash dividends is 15 percent) or because institutions such as pension funds, which pay no taxes, are the primary recipients. However, Peterson, Peterson, and Ang conducted an in-depth study of dividends for one representative year, 1979.¹³ They found that about two-thirds of dividends went to individuals and that the average marginal tax bracket for these individuals was about 40 percent. Thus, we must conclude that large amounts of dividends are paid, even in the presence of substantial taxation.



SOURCE: The Economic Report of the President, February 2008, Table B-90.

Figure 19.7

Dividends to

for All U.S. Firms: 1980 to 2010

¹³P. Peterson, D. Peterson, and J. Ang, "Direct Evidence on the Marginal Rate of Taxation on Dividend Income," Journal of Financial Economics 14 (1985).

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FEWER COMPANIES PAY DIVIDENDS

Although dividends are substantial, Fama and French (FF) point out that the percentage of companies paying dividends has fallen over the last few decades.¹⁴ FF argue that the decline was caused primarily by an explosion of small, currently unprofitable companies that have recently listed on various stock exchanges. For the most part, firms of this type do not pay dividends. Figure 19.8 shows that the proportion of dividend payers among U.S. industrial firms dropped substantially from 1973 to 2002.

This figure, presented in a paper by DeAngelo, DeAngelo, and Skinner¹⁵ also shows an *increase* in the proportion of dividend payers from 2002 to 2010. One obvious explanation is the cut in the maximum tax rate on dividends to 15 percent, signed into law in May 2003. However, DeAngelo, DeAngelo, and Skinner downplay the effect of the tax cut, suggesting a number of other reasons. It should be noted, the resurgence in dividend payers has been observed only over the two-year period from 2002 to 2004.

Figure 19.8 does not imply that dividends across *all* firms declined from 1973 to 2002. DeAngelo, DeAngelo, and Skinner¹⁶ point out that while small firms have shied away from dividends, the largest firms have substantially increased their dividends over recent decades. This increase has created such concentration in dividends





This table reports the proportion of U.S. industrial firms that paid dividends over the years from 1973 to 2010. The proportion dropped significantly from 1973 to 2002, with a rebound over the next two years.

SOURCE: Harry DeAngelo, Linda DeAngelo, and Douglas J. Skinner, "Corporate Payout Policy," in Foundations and Trends in Finance, vol. 3 (2008). Data updated by DeAngelo, DeAngelo, and Skinner.

¹⁴E. F. Fama and K. R. French, "Disappearing Dividends: Changing Firm Characteristics or Lower Propensity to Pay?" *Journal of Financial Economics* (April 2001).

¹⁵Harry DeAngelo, Linda DeAngelo, and Douglas J. Skinner, "Corporate Payout Policy," in *Foundations and Trends in Finance*, vol. 3 (2008). Data updated by the authors.

¹⁶Harry DeAngelo, Linda DeAngelo, and Douglas J. Skinner, "Are Dividends Disappearing? Dividend Concentration and the Consolidation of Earnings," *Journal of Financial Economics* (2004).

that the 25 top dividend-paying firms accounted for more than 50 percent of aggregate dividends in the United States in 2000. DeAngelo and colleagues suggest that "Industrial firms exhibit a two-tier structure in which a small number of firms with very high earnings generates the majority of earnings and dominates the dividend supply, while the majority of firms has at best a modest impact on aggregate earnings and dividends.

CORPORATIONS SMOOTH DIVIDENDS

In 1956, John Lintner made two important observations concerning dividend policy that still ring true.¹⁷ First, real-world companies typically set long-term target ratios of dividends to earnings. A firm is likely to set a low target ratio if it has many positive NPV projects relative to available cash flow and a high ratio if it has few positive NPV projects. Second, managers know that only part of any change in earnings is likely to be permanent. Because managers need time to assess the permanence of any earnings rise, dividend changes appear to lag earnings changes by a number of periods.

Taken together, Lintner's observations suggest that two parameters describe dividend policy: the target payout ratio (t) and the speed of adjustment of current dividends to the target (s). Dividend changes will tend to conform to the following model:

Dividend change =
$$\text{Div}_1 - \text{Div}_0 = s \cdot (t\text{EPS}_1 - \text{Div}_0)$$
 (19.6)

where Div_1 and Div_0 are dividends in the next year and dividends in the current year, respectively. EPS₁ is earnings per share in the next year.

EXAMPLE 19.2

Dividend Smoothing Calculator Graphics, Inc., (CGI) has a target payout ratio of .30. Last year's earnings per share were \$10, and in accordance with the target, CGI paid dividends of \$3 per share last year. However, earnings have jumped to \$20 this year. Because the managers do not believe that this increase is permanent, they do *not* plan to raise dividends all the way to \$6 (=.30 × \$20). Rather, their speed of adjustment coefficient, *s*, is .5, implying that the *increase* in dividends from last year to this year will be:

$$.5 imes (\$6 - \$3) = \$1.50$$

That is, the increase in dividends is the product of the speed of adjustment coefficient, .50, times the difference between what dividends would be with full adjustment [$(=.30 \times 20)$] and last year's dividends. Dividends will increase by \$1.50, so dividends this year will be \$4.50 (=+31 + \$1.50). Now, suppose that earnings stay at \$20 next year. The increase in dividends next year will be:

In words, the increase in dividends from this year to next year will be the speed of adjustment coefficient (.50) times the difference between what dividends would have been next year with full adjustment (\$6) and this year's dividends (\$4.50). Because dividends will increase by \$.75, dividends next year will be 5.25 (=4.50 + .75). In this way, dividends will slowly rise every year if earnings in all future years remain at \$20. However, dividends will reach \$6 only at infinity.

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¹⁷J. Lintner, "Distribution of Incomes of Corporations among Dividends, Retained Earnings, and Taxes," *American Economic Review* (May 1956).

The limiting cases in Equation 19.6 occur when s = 1 and s = 0. If s = 1, the actual change in dividends will be equal to the target change in dividends. Here, full adjustment occurs immediately. If s = 0, $\text{Div}_1 = \text{Div}_0$. In other words, there is no change in dividends at all. Real-world companies can be expected to set *s* between 0 and 1.

An implication of Lintner's model is that the dividends-to-earnings ratio rises when a company begins a period of bad times, and the ratio falls when a company starts a period of good times. Thus, dividends display less variability than do earnings. In other words, firms *smooth* dividends.

Pros	Cons
I. Dividends may appeal to investors who desire stable cash flow but do not want to incur the transaction costs from periodically selling shares of stock.	 Dividends have been traditionally taxed as ordinary income.
2. Behavioral finance argues that inves- tors with limited self-control can meet current consumption needs with high- dividend stocks while adhering to the policy of never dipping into principal.	2. Dividends can reduce internal sources of financing. Dividends may force the firm to forgo positive NPV projects or to rely on costly external equity financing.
 Managers, acting on behalf of stock- holders, can pay dividends in order to keep cash from bondholders. 	 Once established, dividend cuts are hard to make without adversely affect- ing a firm's stock price.
 The board of directors, acting on behalf of stockholders, can use dividends to reduce the cash available to spendthrift managers. 	
 Managers may increase dividends to signal their optimism concerning future cash flow. 	

SOME SURVEY EVIDENCE ABOUT DIVIDENDS

A recent study surveyed a large number of financial executives regarding dividend policy. One of the questions asked was this: "Do these statements describe factors that affect your company's dividend decisions?" Table 19.2 shows some of the results.

As shown in Table 19.2, financial managers are very disinclined to cut dividends. Moreover, they are very conscious of their previous dividends and desire to maintain a relatively steady dividend. In contrast, the cost of external capital and the desire to attract "prudent man" investors (those with fiduciary duties) are less important.

Table 19.3 is drawn from the same survey, but here the responses are to the question, "How important are the following factors to your company's dividend decisions?" Not surprisingly given the responses in Table 19.2 and our earlier discussion,

Table 19.2

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Survey Responses on Dividend Decisions*

	Policy Statements	Percentage Who Agree or Strongly Agree
١.	We try to avoid reducing dividends per share.	93.8%
2.	We try to maintain a smooth dividend from year to year.	89.6
3.	We consider the level of dividends per share that we have	
	paid in recent quarters.	88.2
4.	We are reluctant to make dividend changes that might	
	have to be reversed in the future.	77.9
5.	We consider the change or growth in dividends per share.	66.7
6.	We consider the cost of raising external capital to be smaller than the cost of cutting dividends.	42.8
7.	We pay dividends to attract investors subject to "prudent man" investment restrictions.	41.7

*Survey respondents were asked the question, "Do these statements describe factors that affect your company's dividend decisions?"

SOURCE: Adapted from Table 4 of A. Brav, J. R. Graham, C. R. Harvey, and R. Michaely, "Payout Policy in the 21st Century," *Journal of Financial Economics* (2005).

the highest priority is maintaining a consistent dividend policy. The next several items are also consistent with our previous analysis. Financial managers are very concerned about earnings stability and future earnings levels in making dividend decisions, and they consider the availability of good investment opportunities. Survey respondents also believed that attracting both institutional and individual (retail) investors was relatively important.

In contrast to our discussion in the earlier part of this chapter of taxes and flotation costs, the financial managers in this survey did not think that personal taxes paid on dividends by shareholders are very important. And even fewer think that equity flotation costs are relevant.

Policy Statements	Percentage Who Think This Is Important or Very Important
I. Maintaining consistency with our historic dividend	24.10
ронсу.	84.1%
2. Stability of future earnings.	71.9
3. A sustainable change in earnings.	67.1
4. Attracting institutional investors to purchase our stock.	52.5
5. The availability of good investment opportunities for	
our firm to pursue.	47.6
6. Attracting retail investors to purchase our stock.	44.5
7. Personal taxes our stockholders pay when receiving	
dividends.	21.1
8. Flotation costs to issuing new equity.	9.3

*Survey respondents were asked the question, "How important are the following factors to your company's dividend decisions?" SOURCE: Adapted from Table 5 of A. Brav, J. R. Graham, C. R. Harvey, and R. Michaely, "Payout Policy in the 21st Century," *Journal of Financial Economics* (2005).

Table 19.3 Survey Responses on Dividend Decisions*

19.9 Putting It All Together

Much of what we have discussed in this chapter (and much of what we know about dividends from decades of research) can be pulled together and summarized in the following six points:¹⁸

- 1. Aggregate dividend and stock repurchases are massive, and they have increased steadily in nominal and real terms over the years.
- 2. Cash dividends and repurchases are heavily concentrated among a relatively small number of large, mature firms.
- 3. Managers are very reluctant to cut dividends, normally doing so only due to firm-specific problems.
- 4. Managers smooth dividends, raising them slowly and incrementally as earnings grow.
- 5. Stock prices react to unanticipated changes in dividends.
- 6. The magnitude of stock repurchases tends to vary with transitory earnings.

The challenge now is to fit these six pieces into a reasonably coherent picture. With regard to payouts in general, meaning the combination of stock repurchases and cash dividends, a simple life cycle theory fits Points 1 and 2. The key ideas are straightforward. First, relatively young firms with less available cash generally should not make cash distributions. They need the cash to fund positive NPV projects (and flotation costs discourage the raising of outside cash).

However, as a firm survives and matures, it begins to generate free cash flow (which, you will recall, is internally generated cash flow beyond that needed to fund profitable investment activities). Significant free cash flow can lead to agency problems if it is not distributed. Managers may become tempted to pursue empire building or otherwise spend the excess cash in ways not in the shareholders' best interests. Thus, firms come under shareholder pressure to make distributions rather than hoard cash. And, consistent with what we observe, we expect large firms with a history of profitability to make large distributions.

Thus, the life cycle theory says that firms trade off the agency costs of excess cash retention against the potential future costs of external equity financing. A firm should begin making distributions when it generates sufficient internal cash flow to fund its investment needs now and into the foreseeable future.

The more complex issue concerns the type of distribution, cash dividends versus repurchase. The tax argument in favor of repurchases is a clear and strong one. Repurchases are a much more flexible option (and managers greatly value financial flexibility), so the question is: Why would firms ever choose a cash dividend?

If we are to answer this question, we have to ask a different question. What can a cash dividend accomplish that a share repurchase cannot? One answer is that when a firm makes a commitment to pay a cash dividend now and into the future, it sends a two-part signal to the markets. As we have already discussed, one signal is that the firm anticipates being profitable, with the ability to make the payments on an ongoing basis. Note that a firm cannot benefit by trying to fool the market in this regard because the firm would ultimately be punished when it couldn't make the dividend

¹⁸This list is distilled in part from a longer list in Harry DeAngelo and Linda DeAngelo, "Payout Policy Pedagogy: What Matters and Why," *European Financial Management* 13 (2007).

payment (or couldn't make it without relying on external financing). Thus, a cash dividend may let a firm distinguish itself from less profitable rivals.

A second, and more subtle, signal takes us back to the agency problem of free cash flow. By committing to pay cash dividends now and in the future, the firm signals that it won't be hoarding cash (or at least not as much cash), thereby reducing agency costs and enhancing shareholder wealth.

This two-part signaling story is consistent with Points 3 to 5 on the previous page, but an obvious objection remains. Why don't firms just commit to a policy of setting aside whatever money would be used to pay dividends and use it instead to buy back shares? After all, either way, a firm is committing to pay out cash to shareholders.

A fixed repurchase strategy suffers from two drawbacks. The first is verifiability. A firm could announce an open market repurchase and then simply not do it. By suitably fudging its books, it would be some time before the deception was discovered. Thus, it would be necessary for shareholders to develop a monitoring mechanism, meaning some sort of way for stockholders to know for sure that the repurchase was in fact done. Such a mechanism wouldn't be difficult to build (it could be a simple trustee relationship such as we observe in the bond markets), but it currently does not exist. Of course, a tender offer repurchase needs little or no verification, but such offers have expenses associated with them. The beauty of a cash dividend is that it needs no monitoring. A firm is forced to cut and mail checks four times a year, year in and year out.

Characteristics of a Sensible Payout Policy

- Over time pay out all free cash flows.
- Avoid cutting positive NPV projects to pay dividends or buy back shares.
- Do not initiate dividends until the firm is generating substantial free cash flow.
- Set the current regular dividend consistent with a long-run target payout ratio.
- Set the level of dividends low enough to avoid expensive future external financing.
- Use repurchases to distribute transitory cash flow increases.

A second objection to a fixed repurchase strategy is more controversial. Suppose managers, as insiders, are better able than stockholders to judge whether their stock price is too high or too low. (Note that this idea does not conflict with semistrong market efficiency if inside information is the reason.) In this case, a fixed repurchase commitment forces management to buy back stock even in circumstances when the stock is overvalued. In other words, it forces management into making negative NPV investments.

More research on the cash dividend versus share repurchase question is needed, but the historical trend seems to be favoring continued growth in repurchases relative to dividends. Total corporate payouts seem to be relatively stable over time at roughly 20 percent of aggregate earnings, but repurchases are becoming a larger portion of that total. The split reached about 50–50 in the latter part of the 1990s, but it looks like aggregate repurchases have recently passed aggregate dividends.

One aspect of aggregate cash dividends that has not received much attention is that there may be a strong legacy effect. Before 1982, the regulatory status of stock repurchases was somewhat murky, creating a significant disincentive. In 1982, the SEC, after years of debate, created a clear set of guidelines for firms to follow, thereby making repurchases much more attractive. The legacy effect arises because many of the giant firms that pay such a large portion of aggregate dividends were paying dividends before (and perhaps long before) 1982. To the extent that these firms are unwilling to cut their dividends, aggregate cash dividends will be large, but only because of a "lock-in" effect for older firms. If locked-in, legacy payers account for much of the aggregate dividend, what we should observe is (1) a sharply reduced tendency for maturing firms to initiate dividends and (2) a growth in repurchases relative to cash dividends over time. We actually do see evidence of both of these trends; however, as the case of Microsoft clearly shows, legacy effects alone can't account for all cash dividend payers.

19.10 Stock Dividends and Stock Splits

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. Because 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). Because every shareholder receives 20 percent more stock, the 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.

SOME DETAILS ABOUT STOCK SPLITS AND STOCK DIVIDENDS

Stock splits and stock dividends have essentially the same impacts on the corporation and the shareholder. They increase the number of shares outstanding and reduce the value per share. The accounting treatment is not the same, however, and it depends on two things: (1) whether the distribution is a stock split or a stock dividend and (2) the size of the stock dividend if it is called a dividend.

By convention, stock dividends of less than 20 to 25 percent are called *small stock dividends*. The accounting procedure for such a dividend is discussed next. A stock dividend greater than this value of 20 to 25 percent is called a *large stock dividend*. Large stock dividends are not uncommon. For example, in October 2010, water heater manufacturer A.O. Smith announced a three-for-two stock split in the form of a 50 percent stock dividend. The same month, automotive supplier Magna International announced a two-for-one stock split in the form of a 100 percent stock dividend. Except for some relatively minor accounting differences, this has the same effect as a two-for-one stock split.

Example of a Small Stock Dividend The Peterson Co., a consulting firm specializing in difficult accounting problems, has 10,000 shares of stock outstanding, each selling at \$66. The total market value of the equity is $66 \times 10,000 = 660,000$. With a 10 percent stock dividend, each stockholder receives one additional share for each 10 owned, and the total number of shares outstanding after the dividend is 11,000.

Information on upcoming stock splits is available on the splits calendar at <u>www.</u> <u>investmenthouse.</u> <u>com</u> and finance.yahoo.com

Before the stock dividend, the equity portion of Peterson's balance sheet might look like this:

Common stock (\$1 par, 10,000 shares outstanding)	\$ 10,000
Capital in excess of par value	200,000
Retained earnings	290,000
Total owners' equity	\$500,000

A seemingly arbitrary accounting procedure is used to adjust the balance sheet after a small stock dividend. Because 1,000 new shares are issued, the common stock account is increased by \$1,000 (1,000 shares at \$1 par value each), for a total of \$11,000. The market price of \$66 is \$65 greater than the par value, so the "excess" of $$65 \times 1,000$ shares = \$65,000 is added to the capital surplus account (capital in excess of par value), producing a total of \$265,000.

Total owners' equity is unaffected by the stock dividend because no cash has come in or out, so retained earnings are reduced by the entire \$66,000, leaving \$224,000. The net effect of these machinations is that Peterson's equity accounts now look like this:

Common stock (\$1 par, 11,000 shares outstanding)	\$ 11,000
Capital in excess of par value	265,000
Retained earnings	224,000
Total owners' equity	\$500,000

Example of a Stock Split A stock split is conceptually similar to a stock dividend, but it is commonly expressed as a ratio. For example, in a three-for-two split, each shareholder receives one additional share of stock for each two held originally, so a three-for-two split amounts to a 50 percent stock dividend. Again, no cash is paid out, and the percentage of the entire firm that each shareholder owns is unaffected.

The accounting treatment of a stock split is a little different from (and simpler than) that of a stock dividend. Suppose Peterson decides to declare a two-for-one stock split. The number of shares outstanding will double to 20,000, and the par value will be halved to \$.50 per share. The owners' equity after the split is represented as follows:

Common stock (\$.50 par, 20,000 shares outstanding)	\$ 10,000
Capital in excess of par value	200,000
Retained earnings	290,000
Total owners' equity	\$500,000

Note that for all three of the categories, the figures on the right are completely unaffected by the split. The only changes are in the par value per share and the number of shares outstanding. Because the number of shares has doubled, the par value of each is cut in half.

Example of a Large Stock Dividend In our example, if a 100 percent stock dividend were declared, 10,000 new shares would be distributed, so 20,000 shares would be outstanding. At a \$1 par value per share, the common stock account

For a list of recent stock splits, try www.stocksplits. net. Chapter 19 Dividends and Other Payouts

would rise by \$10,000, for a total of \$20,000. The retained earnings account would be reduced by \$10,000, leaving \$280,000. The result would be the following:

Common stock (\$1 par, 20,000 shares outstanding)	\$ 20,000
Capital in excess of par value	200,000
Retained earnings	280,000
Total owners' equity	\$500,000

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 we 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. In our preceding example, the equity had a total market value of \$660,000. With the small stock dividend, the number of shares increased to 11,000, so it seems that each would be worth \$660,000/11,000 = \$60.

For example, a shareholder who had 100 shares worth \$66 each before the dividend would have 110 shares worth \$60 each afterward. The total value of the stock is \$6,600 either way; so the stock dividend doesn't really have any economic effect.

After the stock split, there are 20,000 shares outstanding, so each should be worth 660,000/20,000 = 33. In other words, the number of shares doubles and the price halves. From these calculations, it appears that stock dividends and splits are just paper transactions.

Although these results are 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.

For example, in early 2003, Microsoft announced a two-for-one stock split. This was the ninth split for Microsoft since the company went public in 1986. The stock had split three-for-two on two occasions and two-for-one a total of seven times. So for every share of Microsoft you owned in 1986 when the company first went public, you would own 288 shares as of the most recent stock split in 2003. Similarly, since Walmart went public in 1970, it has split its stock two-for-one 11 times, and Dell Computer has split three-for-two once and two-for-one 6 times since going public in 1988.

Although this argument of a trading range 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 that do not appear to cause problems. To take an extreme case, consider the Swiss chocolatier Lindt. In July 2011, Lindt shares were selling for around 26,387 Swiss francs each, or about \$37,247. A round lot would have cost a cool \$3.72 million. This is fairly expensive, but also consider Berkshire-Hathaway, the company run by legendary investor Warren Buffett. In July 2011, each share in the company sold for about \$113,000, down from a high of \$151,650 in December 2007.

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 reverse is sometimes observed.

REVERSE SPLITS

A less frequently encountered financial maneuver is the **reverse split**. For example, in January 2011, solar power company Evergreen Solar underwent a 1-for-6 reverse stock split, and, in February 2011, PremierWest Bancorp underwent a 1-for-10 reverse split. In a 1-for-10 reverse split, each investor exchanges 10 old shares for 1 new share. The par value is increased by a factor of 10 in the process. In what is one of the biggest reverse splits ever (in terms of market cap), banking giant Citigroup announced in March 2011 that it would do a 1-for-10 reverse split, thereby reducing the number of its shares outstanding from 29 billion to 2.9 billion. As with stock splits and stock dividends, a case can be made that a reverse split has no real effect.

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. 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. In 2001–2002, in the wake of a bear market, this motive became an increasingly important one. In 2001, 106 companies asked their shareholders to approve reverse splits. There were 111 reverse splits in 2002 and 75 in 2003, but only 14 by mid-year 2004. The most common reason for these reverse splits is that NASDAQ delists companies whose stock price drops below \$1 per share for 30 days. Many companies, particularly Internet-related technology 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 January 2011, Phoenix Footwear Group, Inc. completed a reverse/ forward split. In this case, the company first did a 1-for-200 reverse stock split. The company repurchased all shares held by stockholders with less than one share of stock, thereby eliminating small shareholders (and reducing the total number of shareholders). The purpose of the reverse split was to allow the company to "go dark." The reverse split and share repurchase left the company with fewer than 300 shareholders, so it would no longer be required to file periodic reports with the SEC. What made the proposal especially imaginative was that immediately after the reverse split, the company did a 200-for-1 ordinary split to restore the stock to its original cost!



 To test your mastery of this material, take a quiz at <u>mhhe.</u> <u>com/rwj</u>

Summary and Conclusions

- 1. The dividend policy of a firm is irrelevant in a perfect capital market because the shareholder can effectively undo the firm's dividend strategy. If a shareholder receives a greater dividend than desired, he or she can reinvest the excess. Conversely, if the shareholder receives a smaller dividend than desired, he or she can sell off extra shares of stock. This argument is due to MM and is similar to their homemade leverage concept, discussed in a previous chapter.
- 2. Stockholders will be indifferent between dividends and share repurchases in a perfect capital market.
- **3.** Because dividends in the United States are taxed, companies should not issue stock to pay out a dividend.
- **4.** Also because of taxes, firms have an incentive to reduce dividends. For example, they might consider increasing capital expenditures, acquiring other companies, or purchasing financial assets. However, due to financial considerations and legal constraints, rational firms with large cash flows will likely exhaust these activities with plenty of cash left over for dividends.
- **5.** In a world with personal taxes, a strong case can be made for repurchasing shares instead of paying dividends.
- **6.** Nevertheless, there are a number of justifications for dividends even in a world with personal taxes:
 - **a.** Investors in no-dividend stocks incur transaction costs when selling off shares for current consumption.
 - **b.** Behavioral finance argues that investors with limited self-control can meet current consumption needs via high-dividend stocks while adhering to a policy of "never dipping into principal."
 - **c.** Managers, acting on behalf of stockholders, can pay dividends to keep cash from bondholders. The board of directors, also acting on behalf of stockholders, can use dividends to reduce the cash available to spendthrift managers.
- 7. The stock market reacts positively to increases in dividends (or an initial payment) and negatively to decreases in dividends. This suggests that there is information content in dividend payments.
- **8.** High (low) dividend firms should arise to meet the demands of dividend-preferring (capital gains-preferring) investors. Because of these clienteles, it is not clear that a firm can create value by changing its dividend policy.

Concept 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** It is sometimes suggested that firms should follow a "residual" dividend policy. With such a policy, the main idea is that a firm should focus on meeting its investment needs and maintaining its desired debt-equity ratio. Having done so, a firm pays out any leftover, or residual, income as dividends. What do you think would be the chief drawback to a residual dividend policy?