

## A Test

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

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

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 in Chapter 5 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 18.4, 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.

Thus, in this simple world, dividend policy does not matter. That is, managers choosing either to raise or to lower the current dividend do not affect the current value of their firm. The above theory is a powerful one, and the work of MM is generally considered a classic in modern finance. With relatively few assumptions, a rather surprising result is shown to be perfectly true.<sup>8</sup> Because we want to examine many real-world factors ignored by MM, their work is only a starting point in this chapter's discussion of dividends. The next part of the chapter investigates these real-world considerations.

## 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.

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).

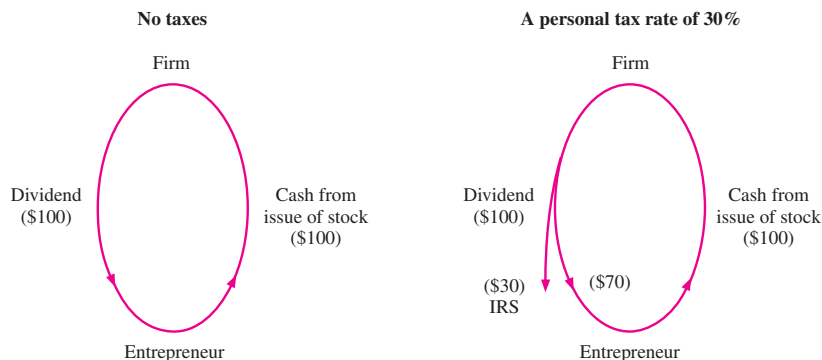
This idea was implicitly considered by Miller and Modigliani. As we pointed out, one of the assumptions underlying their dividend-irrelevance proposition was, "The investment policy of the firm is set ahead of time and is not altered by changes in dividend policy."

### CONCEPT QUESTIONS

- How can an investor make homemade dividends?
- Are dividends irrelevant?
- What assumptions are needed to show that dividend policy is irrelevant?

<sup>8</sup>One of the real contributions of MM has been to shift the burden of proof. Before MM, firm value was believed to be influenced by its dividend policy. After MM, it became clear that establishing a correct dividend policy was not obvious at all.

■ **FIGURE 18.5** Firm Issues Stock in Order 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 \$30 in taxes to the IRS. The entrepreneur loses and the IRS wins when a firm issues stock to pay a dividend.

## 18.4 TAXES, ISSUANCE COSTS, AND DIVIDENDS

The model we used to determine the level of dividends assumed that there were no taxes, no transactions costs, and no uncertainty. It concluded that dividend policy is irrelevant. Although this model helps us to grasp some fundamentals of dividend policy, it ignores many factors that exist in reality. It is now time to investigate these real-world considerations. We first examine the effect of taxes on the level of a firm's dividends.

Cash dividends received are taxed as ordinary income. Capital gains are generally taxed at somewhat lower rates. In addition, dividends are taxable when distributed, whereas taxes on capital gains are deferred until the stock is sold. Thus, for individual shareholders, the *effective* tax rate on dividend income is higher than the tax rate on capital gains. A discussion of dividend policy in the presence of personal taxes 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 and 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 in order 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-hand side of Figure 18.5, 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 30 percent. The firm still receives \$100 upon issuance of stock. However, the \$100 dividend is not fully credited to the entrepreneur. Instead, the dividend payment is taxed, implying that the owner receives only \$70 net after tax. Thus, the entrepreneur loses \$30.

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, one should not issue 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. These costs are examined in a later chapter. 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.

An increase in dividends may lead to a decline in stock price for still another reason. The market price of a stock is determined by the interaction of the demand for and the supply of stock. New issues increase the outstanding supply of the stock, putting downward pressure on the market price of existing shares. Therefore, to the extent that dividends are financed by new issues, an increase in dividends may well contribute to a stock-price reduction. However, in an efficient stock market, changes in the supply of stock should have a negligible effect on stock price.

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? While our above 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 argues that, in a world with personal taxes, one should not issue stock to pay a dividend. Does the tax disadvantage of dividends imply the stronger policy, “Never pay dividends in a world with personal taxes”?

We argue below 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 principles of corporate finance. In spite of our distaste for this strategy, Professor Michael Jensen of Harvard University has suggested that many managers choose to take on negative NPV projects in lieu of paying dividends, doing their stockholders a disservice in the process.<sup>9</sup> Oil companies and tobacco companies appear to be particularly guilty of this policy. It is frequently argued that managers who adopt negative NPV projects are ripe for takeover, leveraged buyouts, and proxy fights.
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

<sup>9</sup>M. C. Jensen, “Agency Costs of Free Cash Flows, Corporate Finance and Takeovers,” *American Economic Review* (May 1986).

firms are merged for a valid business purpose.<sup>10</sup> 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

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 individual tax rate is 28 percent. How much cash will investors have after five years under each policy?

If dividends are paid now, shareholders will receive

$$\$1,000 \times (1 - 0.28) = \$720$$

today after personal tax. Because their return after personal tax is 7.2 percent, they will have

$$\$720 \times (1.072)^5 = \$1,019.31 \quad (18.3)$$

in five years. If Regional Electric Company retains the cash to invest in Treasury bills and pays out the proceeds five years from now, the firm will have

$$\$1,000 \times (1.066)^5 = \$1,376.53$$

in five years.

If this is paid as a dividend, the stockholders will receive

$$\$1,376.53 \times (1 - 0.28) = \$991.10 \quad (18.4)$$

after personal taxes at date 5. The result in formula (18.3) is greater than that in (18.4), 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.

There is a quirk in the tax law benefiting firms that invest in stock rather than bonds. For a company investing in less than 20 percent of the stock of other firms, 70 percent of the dividends received are excluded from corporate tax.<sup>11</sup> If Regional Electric invested \$1,000 in a one-year preferred stock yielding 10 percent, only \$30 of the \$100 in dividends would be subject to tax. Corporate tax would be

$$\$30 \times 0.34 = \$1,000 \times 0.10 \times 0.3 \times 0.34 = \$10.20$$

Thus, Regional Electric would have

$$\begin{aligned} & \$1,000 \times 1.10 - \$1,000 \times 0.10 \times 0.3 \times 0.34 \\ &= \$1,000 \times [1 + 0.10 \times (1 - 0.3 \times 0.34)] \\ &= \$1,100 - \$10.20 = \$1,089.80 \end{aligned}$$

<sup>10</sup>Richard Roll, "The Hubris Hypothesis of Corporate Takeovers," *Journal of Business* (1986), pp. 197–216, explores this idea in depth.

<sup>11</sup>The exclusion is 100 percent if a company owns 80 percent or more of the stock of another firm. It is 80 percent if a company holds more than 20 percent and less than 80 percent of another company.

at the end of one year. Regional is being taxed at an effective rate of  $0.30 \times 0.34 = 10.2\%$ . At the end of five years, Regional would have

$$\begin{aligned} & \$1,000 \times [1 + 0.10 \times (1 - 0.30 \times 0.34)]^5 \\ &= \$1,000 \times [1 + 0.10 \times (1 - 0.1020)]^5 \\ &= \$1,537.21 \end{aligned}$$

If this is paid as a dividend, the stockholders would receive

$$\$1,537.21 \times (1 - 0.28) = \$1,106.79 \quad (18.5)$$

at that time.

Because individual investors are not allowed this dividend exclusion, they would receive the same amount whether they invested date 0 dividends in 10-percent T-bills or 10-percent preferred stock. Because the result in equation (18.5) is greater than the one in (18.4), Regional should invest in preferred stock rather than pay a dividend at date 0.

Because this dividend-exclusion percentage is so large, most real-world examples favor retention rather than payment of dividends. However, there appear to be very few, if any, companies that hoard cash in this manner without limit. This occurs because Section 532 of the Internal Revenue Code penalizes firms with “improper accumulation of surplus.”

The above example suggests that, because of personal taxes, firms have an incentive to reduce their payment of dividends. For example, they might increase capital expenditures, repurchase shares, acquire other firms, or buy financial assets. However, due to financial considerations and legal constraints, rational firms at some point may bite the bullet and pay some dividends. In other words, we are arguing that firms with large cash flows may pay dividends simply because they have run out of better things to do with their funds.

## Summary on Taxes

Miller and Modigliani argue that dividend policy is irrelevant in a perfect capital market. However, because dividends are taxed as ordinary income, the MM irrelevance principle does not hold in the presence of personal taxes.

We make three points for a regime of personal taxes:

1. A firm should not issue stock to pay a dividend.
2. Managers have an incentive to seek alternative uses for funds to reduce dividends.
3. Though personal taxes mitigate against the payment of dividends, these taxes are not sufficient to lead firms to eliminate all dividends.

We argue that a manager should only avoid dividends if the alternative use of the funds is less costly. Though this point may seem obvious to some, it has been missed by many financial people. A number of them have argued, incorrectly in our view, that personal taxes imply that no firm should ever pay dividends.

## 18.5 REPURCHASE OF STOCK

Instead of paying cash dividends, a firm can rid itself of excess cash by repurchasing shares of its own stock. Recently share repurchase has become an important way of distributing earnings to shareholders.<sup>12</sup> The repurchase of stock is a potentially useful adjunct to divi-

<sup>12</sup>Adam Dunsby, “Share Repurchases, Dividends, and Corporate Distribution Policy,” unpublished manuscript, The Wharton School, University of Pennsylvania, November 29, 1994, shows a dramatic increase in share repurchase since 1983. See also Laurie S. Bagwell and John B. Shoven, “Cash Distribution to Shareholders,” *Journal of Economic Perspectives* 3 (1989).

■ **TABLE 18.1** Dividend versus Repurchase Example

	For Entire Firm	Per Share
<b>Extra Dividend</b> (100,000 shares outstanding)		
Proposed dividend	\$ 300,000	\$ 3.00
Forecasted annual earnings after dividend	450,000	4.50
Market value of stock after dividend	2,700,000	27.00
<b>Repurchase</b> (90,000 shares outstanding)		
Forecasted annual earnings after repurchase	\$ 450,000	\$ 5.00
Market value of stock after repurchase	2,700,000	30.00

dividend policy, when tax avoidance is important. We first consider an example presented in the theoretical world of a perfect capital market. We next discuss the real-world factors involved in the repurchase decision.

## Dividend versus Repurchase

Imagine a company with excess cash of \$300,000 (or \$3 per share) that 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. These figures are presented in the top half of Table 18.1.

Alternatively, the firm could use the excess cash to repurchase some of its own stock. Imagine that a tender offer of \$30 a 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. The price-earnings ratio remains at 6, since both the business and financial risks of the firm are the same in the repurchase case as they were for the dividend case. Thus the price of a share after the repurchase is \$30.

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.

## Relationship between EPS and Market Value

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 in the preceding example where 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 may place undue emphasis on EPS figures in a repurchase agreement. Given the irrelevance propositions we have discussed, an increase in EPS need not be beneficial. When a repurchase is financed by excess cash, we showed that in a perfect capital market the total value to the stockholder is the same under the dividend payment strategy as under the repurchase agreement strategy.

## Taxes

The examples we have just described show that repurchase does not raise the wealth of the remaining shareholders in a world without taxes and transactions costs. However, stockholders generally prefer a repurchase to a dividend under current tax law. For example, a dividend of \$1 per share is taxed at ordinary income rates. Investors in the 28 percent tax bracket who own 100 shares of the security would pay as much as \$28 in taxes. Selling stockholders would pay far lower taxes under a repurchase of \$100 of existing shares. This is because taxes are paid only on the profit from a sale. Thus the gain on a sale would be only \$40 if the shares sold at \$100 were originally purchased at \$60. In addition, the capital gains tax rate is usually lower than the ordinary income tax rate. In this example, the capital gains tax rate is 20 percent. The capital gains tax would be  $(0.20 \times \$40) = \$8$ .

If the example strikes you as being too good to be true, you are quite likely right. The IRS is aware that the stockholders of a corporation engaging in a continuous repurchasing program pay far less in taxes than stockholders receiving dividends. Thus the IRS is likely to penalize corporations repurchasing their own stocks if the only reason is to avoid the taxes that would be levied on dividends. However, a one-time-only repurchase of shares will most often avoid IRS scrutiny.

## Targeted Repurchase

Our previous discussion concerned companies that make nonselective repurchases, usually executed through tender offers<sup>13</sup> or open-market purchases. In addition, firms have repurchased shares from specific individual stockholders. This procedure has been 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.

Companies engage in this type of repurchase 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. More frequently, the repurchasing firm has argued that certain stockholders had been nuisances. Though targeted repurchases executed for these reasons are in the interest of the remaining shareholders, the shares of large stockholders are often repurchased to avoid a takeover unfavorable to management.

## Repurchase as Investment

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. Here, it is likely thought that (1) investment opportunities in nonfinancial assets are few, and (2) the firm’s own stock price should rise with the passage of time.

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

<sup>13</sup>In a tender offer, shareholders send in (tender) their shares in exchange for a specified price per share.



stock repurchase is usually quite favorable. In addition, recent empirical work has shown that the long-term stock price performance of securities after a buyback is significantly better than the stock price performance of comparable companies that do not repurchase.<sup>14</sup>

CONCEPT  
QUESTIONS  
?

- Why does a stock repurchase make more sense than paying dividends?
- Why don't all firms use stock repurchases?

## 18.6 EXPECTED RETURN, DIVIDENDS, AND PERSONAL TAXES

The material presented so far in this chapter can properly be called a discussion of *dividend policy*. That is, it is concerned with the level of dividends chosen by a firm. A related, but distinctly different, question is, “What is the relationship between the expected return on a security and its dividend yield?” To answer this question, we consider an extreme situation where dividends are taxed as ordinary income and capital gains are not taxed. Corporate taxes are ignored.

Suppose every shareholder is in a 25-percent tax bracket and is considering the stocks of firm *g* and firm *d*. Firm *g* pays no dividend; firm *d* does. Suppose the current price of the stock of firm *g* is \$100 and next year’s price is expected to be \$120. The shareholder in firm *g* expects a \$20 capital gain, implying a 20-percent return. If capital gains are not taxed, the pretax and after-tax returns must be the same.<sup>15</sup>

Suppose firm *d* will pay a \$20 dividend per share next year. The price of firm *d*’s stock is expected to be \$100 after the dividend payment. If the stocks of firm *g* and firm *d* are equally risky, the market prices must be set so that their *after-tax* expected returns are equal, in this case, to 20 percent. What will the current price of stock in firm *d* equal?

The current market price of a share in firm *d* can be calculated as follows:

$$P_0 = \frac{\$100 + \$20(1 - T_d)}{1.20}$$

The first term in the numerator is \$100, the expected price of the stock at date 1. The second term represents the dividend after personal tax, where  $T_d$  is the personal tax rate on dividends. (The tax on capital gains is ignored under our assumption of no capital gains tax.) By discounting at 20 percent, we are ensuring that the after-tax rate on stock *d* is 20 percent, the same as the rate of return (both pre- and post-tax) for firm *g*. Setting  $T_d = 0.25$ ,  $P_0 = \$95.83$ .

Because the investor receives \$120 from firm *d* at date 1 (\$100 in value of stock plus \$20 in dividends) before personal taxes, the expected pretax return on the security equals

$$\frac{\$120}{\$95.83} - 1 = 25.22\%$$

These calculations are presented in Table 18.2.

<sup>14</sup>For example, see David Ikenberry, Joseph Lakonishok, and Theo Vermaelen, “Market Underreaction to Open Market Share Repurchases,” *Journal of Financial Economics* 39 (1995).

<sup>15</sup>Under current tax law, taxes on capital gains are not paid until the owner sells. Because the owner may wait indefinitely, the effective tax on capital gains in the real world is quite low. For example, A. Protopapadakis (“Some Indirect Evidence on Effective Capital Gains Tax Rates,” *Journal of Business*, April 1983) finds that “the effective marginal tax rates on capital gains fluctuated between 3.4 percent and 6.6 percent between 1960 and 1978 and that capital gains are held, on average, between 24 and 31 years before they are reported” (p. 127).



■ **TABLE 18.2** Effect of Dividend Yield on Pretax Expected Returns

	Firm g (no dividend)	Firm d (all dividend)
Assumptions:		
Expected price at date 1	\$120	\$100
Dividend at date 1 (before tax)	0	\$ 20
Dividend at date 1 (after tax)	0	\$ 15
Price at date 0	\$100	(to be solved)
Analysis:		
We solve that the price of firm <i>d</i> at date 0 is \$95.83,* allowing us to calculate		
Capital gain	\$20	$100 - 95.83 = \$4.17$
Total gain before tax (both dividend and capital gain)	\$20	$20 + 4.17 = \$24.17$
Total percentage return (before tax)	$\frac{\$20}{\$100} = 0.20$	$\frac{\$24.17}{\$95.83} = 0.252$
Total gain after tax	\$20	$15 + 4.17 = \$19.17$
Total percentage return (after tax)	$\frac{\$20}{\$100} = 0.20$	$\frac{\$19.17}{\$95.83} = 0.20$

Stocks with high-dividend yields will have higher pretax expected returns than stocks with low-dividend yields. This is referred to as the *grossing up effect*.

\*We solve for the price of firm *d* at date 0 as

$$P_0 = \frac{\$100 + \$20 \times (1 - 0.25)}{1.20} = \$95.83$$

This example shows that the expected *pretax* return on a security with a high dividend yield is greater than the expected *pretax* return on an otherwise identical security with a low dividend yield.<sup>16</sup> The result is graphed in Figure 18.6. Our conclusion is consistent with efficient capital markets because much of the pretax return for a security with a high dividend yield is taxed away. One implication is that an individual in a zero tax bracket should invest in securities with high dividend yields. There is at least casual evidence that pension funds, which are not subject to taxes, select securities with high dividend yields.

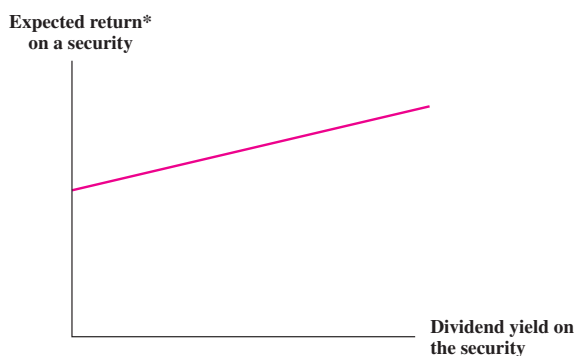
Does the above example suggest that corporate managers should avoid paying dividends? One might think so at first glance, because firm *g* sells at a higher price at date 0 than does firm *d*. However, by deferring a potential \$20 dividend, firm *d* might increase its stock price at date 0 by far less than \$20. For example, this is likely to be the case if firm *d*'s best use for its cash is to pay \$20 for a company whose market price is far below \$20. Moreover, our previous discussion showed that deferment of dividends to purchase either bonds or shares of stock is justified only when personal taxes go down by more than corporate taxes rise. Thus, this example does *not* imply that dividends should be avoided.

## Empirical Evidence

As explained above, financial theory indicates that the expected return on a security should be related to its dividend yield. Although this issue has been researched thoroughly, the empirical results are not generally consistent with each other. On the one hand, Brennan as well as Litzenberger and Ramaswamy (LR) find a positive association between expected

<sup>16</sup>Dividend yield is defined as  $\frac{\text{Annual dividends per share}}{\text{Current price per share}}$ .

**FIGURE 18.6** Relationship between Expected Return and Dividend Yield



Because the tax rate on dividends at the personal level is higher than the *effective* rate on capital gains, stockholders demand higher expected returns on high-dividend stocks than on low-dividend stocks.

\*Expected return includes both expected capital gain and dividend.

pretax returns and dividend yields.<sup>17,18,19</sup> In particular, LR find that a 1-percent increase in dividend yield requires an extra 23 percent in expected return. On the other hand, both Black and Scholes and Miller and Scholes find no relationship between expected pretax returns and dividend yields.<sup>20,21</sup>

Fama and French develop a third point of view.<sup>22</sup> They present evidence that expected returns are positively related to a number of variables, such as dividend yield, the earnings-to-price ratio, and the ratio of book equity to market equity (BEME). However, they argue that the underlying relationship is between returns and BEME. In their view, a relationship between returns and the dividend yield is observed only because dividend yield is correlated with BEME. Their work has had a big impact, with the field generating little, if any, research on expected returns and dividend yields in recent years.

QUESTION  
CONCEPT ?

- What is the relationship between expected returns and dividend yield?

<sup>17</sup>M. Brennan, "Taxes: Market Valuation and Corporate Financial Policy," *National Tax Journal* (December 1970).

<sup>18</sup>R. Litzberger and K. Ramaswamy, "The Effect of Personal Taxes and Dividends on Capital Asset Prices: Theory and Empirical Evidence," *Journal of Financial Economics* (June 1979).

<sup>19</sup>R. Litzberger and K. Ramaswamy, "The Effects of Dividends on Common Stock Prices: Tax Effects or Information Effect?" *Journal of Finance* (May 1982).

<sup>20</sup>F. Black and M. Scholes, "The Effects of Dividend Yield and Dividend Policy on Common Stock Prices and Returns," *Journal of Financial Economics* (May 1974).

<sup>21</sup>M. Miller and M. Scholes, "Dividends and Taxes: Some Empirical Evidence," *Journal of Political Economics* (December 1982).

<sup>22</sup>See, for example, E. F. Fama and K. R. French, "The Cross-Section of Expected Returns," *Journal of Finance* (June 1992).

## 18.7 REAL-WORLD FACTORS FAVORING A HIGH-DIVIDEND POLICY

In a previous section, we pointed out that dividends are taxed at the personal level. This implies that financial managers will seek out ways to reduce dividends, though a complete elimination of dividends would be unlikely for firms with strong cash flow. We also pointed out that share repurchase is a way financial managers can convey many of the same benefits of a dividend without the tax disadvantage. In this section, we consider reasons why a firm might pay its shareholders high dividends, even in the presence of high personal taxes on 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, proverbially known as “widows and orphans.” 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.

Miller and Modigliani point out that this argument is not relevant to their theoretical model. 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 transactions costs, a high-current-dividend policy would be of no value to the stockholder. However, the current income argument does have relevance in the real world. Here the sale of low-dividend stocks would involve brokerage fees and other transactions costs—direct cash expenses that could be avoided by an investment in high-dividend securities. In addition, the expenditure of the stockholder’s own time when selling securities and the natural (but not necessarily rational) fear of consuming principal might further lead many investors to buy high-dividend securities.

However, to put this argument in perspective, it should be remembered that financial intermediaries such as mutual funds can perform these repackaging transactions for individuals at very low cost. Such intermediaries could buy low-dividend stocks and, by a controlled policy of realizing gains, pay their investors at a higher rate.

### Uncertainty Resolution

We have just pointed out that investors with substantial needs for current consumption will prefer high current dividends. Gordon originally argued that a high-dividend policy also benefits stockholders because it resolves uncertainty.<sup>23</sup> He states that investors price a security by forecasting and discounting future dividends. According to Gordon, forecasts of dividends to be received in the distant future have greater uncertainty than do forecasts of near-term dividends. Because the discount rate is positively related to the degree of uncertainty surrounding dividends, the stock price should be low for those companies that pay small dividends now in order to remit higher dividends at later dates.

Dividends are easier to predict than capital gains; however, it would be false to conclude that increased dividends can make the firm less risky. A firm’s overall cash flows are not necessarily affected by dividend policy—as long as capital spending and borrowing are not changed. It is hard to see how the risks of the overall cash flows can be changed with a change in dividend policy.

<sup>23</sup>M. Gordon, *The Investment, Financing, and Valuation of the Corporation* (Homewood, Ill.: Richard D. Irwin, 1961).

## Tax Arbitrage

Miller and Scholes (MS) argue that a two-step procedure eliminates the taxes ordinarily due on investments in high-yield securities.<sup>24</sup> The MS strategy is as follows. First, buy stocks with high dividend yields, borrowing enough of the purchase price so that the interest paid is equal to the dividends received. The benefit of this strategy is that no taxes would be due because dividends are taxable whereas interest is deductible. The problem with the strategy is that the resulting position is quite risky due to the leverage involved. Second, to offset the leverage, invest an amount equivalent to the debt already incurred in a tax-deferred account (such as a Keogh account). Because income in a tax-deferred account avoids taxes, no taxes are paid when the two steps are done simultaneously.

If enough investors are able to take advantage of the strategy, corporate managers need not view dividends as tax-disadvantaged. Thus, only a slight preference for current income and for resolution of uncertainty among investors causes responsive managers to provide high dividends.

## 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<sup>25</sup> find that firms in financial distress are reluctant to cut dividends. Of course, bondholders know of 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 prespecified levels.

Although the managers may be looking out for the stockholders in any conflict with bondholders, the managers may pursue selfish goals at the expense of stockholders in other situations. For example, as discussed in Chapter 16, managers might pad expense accounts, take on pet projects with negative NPVs, or, more simply, not work very hard. Managers find it easier to pursue these selfish goals when the firm has plenty of free cash flow. After all, one can not squander funds if the funds are not available in the first place. And, that is where dividends come in. Several scholars have suggested that dividends can serve as a way to reduce agency costs.<sup>26</sup> By paying dividends equal to the amount of "surplus" cash flow, a firm can reduce management's ability to squander the firm's resources.

### CONCEPT QUESTION

- What are the real-world factors favoring a high-dividend policy?

<sup>24</sup>M. Miller and M. Scholes, "Dividends and Taxes," *Journal of Financial Economics* (December 1978).

<sup>25</sup>H. De Angelo and L. De Angelo, "Dividend Policy and Financial Distress: An Empirical Investigation of Troubled NYSE Firms," *Journal of Finance* 45 (1990).

<sup>26</sup>Michael 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: Basel 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).

## 18.8 A RESOLUTION OF REAL-WORLD FACTORS?

In the previous sections, we pointed out that the existence of personal taxes favors a low-dividend policy after all positive NPV projects are taken, 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. Thus, the dividend-policy question is not resolved.

A discussion of two important concepts—the information content of dividends and the clientele effect—will give the reader an appreciation of some of the relevant issues. The first topic both illustrates the difficulty in interpreting empirical results on dividends and provides another reason for dividends. The second topic suggests that the dividend-payout ratio may not be as important as we originally imagined.

### Information Content of Dividends: A Brainteaser with Practical Applications

The present topic is fascinating, because it is a brainteaser. To begin let us quickly review some of our earlier discussion. Previously, we examined three different positions on dividends:

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

It has been empirically established that the price of a firm's stock will generally rise when its current dividend is increased and fall when its current dividend has been reduced or omitted. For example, Asquith and Mullins estimate that stock prices rise about 3 percent following announcements of dividend initiations. Healy and Palepu<sup>27</sup> and Michaely, Thaler, and Womack<sup>28</sup> find that stock prices fall about 7 percent following announcements of dividend omissions.

At first glance, this observation may seem consistent with position 3 and inconsistent with positions 1 and 2. In fact, many writers have argued 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 stockholder's affinity for current income, that raises 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 negatively affected by the level of dividends, given that future

<sup>27</sup>P. Asquith and D. Mullins, Jr., "The Impact of Initiating Dividend Payments on Shareholder Wealth," *Journal of Business* (January 1983).

<sup>28</sup>P. M. Healy and K. G. Palepu, "Earnings Information Conveyed by Dividend Initiations and Omissions," *Journal of Financial Economics* 21 (1988); and R. Michaely, R. H. Thaler, and K. Womack, "Price Reactions to Dividend Initiations and Omissions: Overreactions or Drift," *Journal of Finance* 50 (1995).

earnings are held constant. Nevertheless, the information-content effect implies that stock price may rise when dividends are raised—if dividends simultaneously cause stockholders to upwardly adjust their expectations of future earnings.

Several theoretical models of dividend policy incorporate managerial incentive to communicate information via dividends.<sup>29</sup> Here, dividends serve to signal to shareholders the firm's current and future performance.

## The Clientele Effect

In the first part of this chapter we established the MM proposition that dividend policy is irrelevant when certain conditions hold. Later sections dealt with those imperfections likely to make dividend policy relevant. Because many imperfections were presented there, the reader might be skeptical that the imperfections could cancel each other out so perfectly that dividend policy would become irrelevant. However, the argument presented below suggests the irrelevance of dividend policy in the real world.

Those individuals in high tax brackets are likely to prefer either no or low dividends. We can classify low-tax-bracket investors into three types. First, there are individual investors in low brackets. They are likely to prefer some dividends if they desire current income or favor resolution of uncertainty. 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 would prefer to invest in high-dividend stocks, even without a desire to resolve uncertainty or 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; thus 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 has occurred, no type of firm will be better off 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	Zero-to-low-payout stocks
Individuals in low tax brackets	Low-to-medium-payout stocks
Tax-free institutions	Medium-payout stocks
Corporations	High-payout stocks

<sup>29</sup>S. Bhattacharya, "Imperfect Information, Dividend Policy, and 'the Bird in the Hand' Fallacy," *Bell Journal of Economics* 10 (1979); S. Bhattacharya, "Nondissipative 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).

An interesting case for the clientele effect on dividend policy is made by John Childs of Kidder Peabody in the following exchange:<sup>30</sup>

*Joseph T. Willett:* John, you've been around public utilities for a good many years. Why do you think that utilities have such high dividend payout ratios?

*John Childs:* They're raising dividends so they can raise capital. . . . If you take the dividends out of utilities today, you'll never sell another share of stock. That's how important it is. In fact, if a few major utilities (with no special problems) cut their dividends, small investors would lose faith in the utility industry and that would finish the sales of utility stocks.

*John Childs (again):* What you are trying to do with dividend policy is to enhance and strengthen the natural interest of investors in your company. The type of stockholders you attract will depend on the type of company you are. If you're Genentech, you are going to attract the type of stockholders who have absolutely no interest in dividends. In fact, you would hurt the stockholders if you paid dividends. On the other hand, you go over to the other extreme such as utilities' and the yield bank's stocks. There the stockholders are extremely interested in dividends, and these dividends have an effect on market price.

However, despite the preceding exchange, a desire for dividends on the part of existing shareholders should not be sufficient to justify a high-dividend payout policy.

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

The statement is likely to be false. As long as enough high-dividend firms 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. There is no evidence that this is the case.

Our discussion on clienteles followed from the fact that tax brackets vary across investors. If shareholders care about taxes, stock should attract tax clienteles based on dividend yield. This appears to be true. Surveys by Blume, Crockett, and Friend, and by Lewellen, Stanley, Lease, and Schlarbaum in Table 18.3, show that stocks with the highest dividend yields tend to be held by individual investors in low tax brackets.<sup>31</sup>



- QUESTIONS
- Do dividends have information content?
  - What are tax clienteles?

## 18.9 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 for two reasons. First, dividends are taxed at the ordinary income-tax rate, whereas capital gains are taxed at a lower rate. Second, taxes on dividends are paid in the year in

<sup>30</sup>Joseph T. Willett, moderator, "A Discussion of Corporate Dividend Policy," in *Six Roundtable Discussions of Corporate Finance with Joel Stern*, ed. by D. H. Chew (New York: Basil Blackwell, 1986). The panelists included Robert Litzenberger, Pat Hess, Bill Kealy, John Childs, and Joel Stern.

<sup>31</sup>M. Blume, J. Crockett, and I. Friend, "Stockownership in the United States: Characteristics and Trends," *Survey of Current Business* 54 (1974), p. 11. W. Lewellen, K. L. Stanley, R. C. Lease, and G. C. Schlarbaum, "Some Direct Evidence on the Dividend Clientele Phenomenon," *Journal of Finance* 33 (December 1978), p. 5.



**TABLE 18.3 Relationship between Dividend Yield and Marginal Tax Rate from Direct Observation of Individual Investors' Portfolios**

Decile	Dividend Yield (% per annum)	Marginal Tax* Rate (%)
1	7.9%	36%
2	5.4	35
3	4.4	38
4	3.5	39
5	2.7	38
6	1.8	41
7	0.6	40
8	0.0	41
9	0.0	42
10	0.0	41

Stockholders in high marginal tax brackets buy securities with low-dividend yield and vice versa.

\*Lewellen et al. use several alternative methods to calculate the marginal tax rate from data on income. The results are broadly similar, and above we give the results for their "Tax-I" definition.

From W. Lewellen, K. L. Stanley, R. C. Lease, and G. C. Schlarbaum, "Some Direct Evidence on the Dividend Clientele Phenomenon," *Journal of Finance* 33 (December 1978), p. 5.

which the dividend is received while taxes on capital gains are deferred until the year of sale. Nevertheless, dividends in the U.S. economy are substantial. For example, consider Figure 18.7, which shows the ratio of aggregate dividends to aggregate earnings for firms on the New York Stock Exchange (NYSE), the American Stock Exchange (AMEX), and NASDAQ over various time periods. The ratio is approximately 43 percent for the period from 1963 to 1998. This ratio varies from a low of 33.95 percent in the 1973–77 period to a high of 56.86 percent from 1988 to 1992.

One might argue that the taxation on dividends is actually minimal, perhaps because dividends are paid primarily to individuals in low tax brackets or because institutions such as pension funds, which pay no taxes, are the primary recipients. However, Peterson, Peterson and Ang<sup>32</sup> conducted an in-depth study of dividends for one representative year, 1979. 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.

## Fewer Companies Pay Dividends

In a recent and fascinating paper, Fama and French<sup>33</sup> (FF) point out that the percentage of companies paying dividends has fallen in recent years. This insight is illustrated in Figure 18.8 for NYSE, AMEX, and NASDAQ firms. FF argue that the decline was caused primarily by an explosion of small, currently unprofitable companies that have recently

<sup>32</sup>P. Peterson, D. Peterson, and J. Ang, "Direct Evidence on the Marginal Rate of Taxation on Dividend Income," *Journal of Financial Economics* 14 (1985).

<sup>33</sup>E. F. Fama and K. R. French, "Disappearing Dividends: Changing Firm Characteristics or Lower Propensity to Pay?," *Journal of Financial Economics* (April 2001).