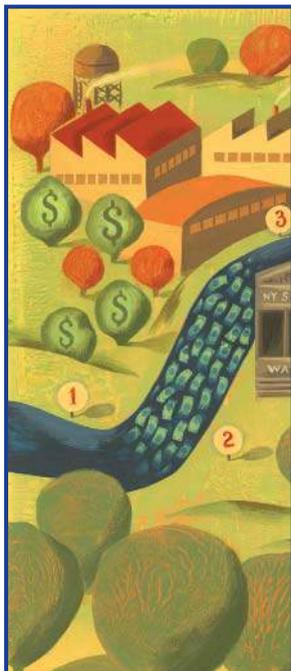


## CHAPTER OUTLINE



### Background

- Dividends as a Basis for Value
- Understanding the Dividend Decision

### The Dividend Controversy

- Dividend Irrelevance
- Dividend Preference
- Dividend Aversion
- Other Theories and Ideas
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- Legal and Contractual Restrictions on Dividends
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### Stock Repurchases

- Repurchase as an Alternative to a Dividend
- Other Repurchase Issues

In this chapter we'll concern ourselves with common stock dividends, the payments made by companies to equity investors.<sup>1</sup> Dividends present an interesting puzzle in modern finance. People are basically divided as to dividends' importance to investors and whether their payment has an influence on stock prices. Practitioners tend to think dividends are important to prices, while scholars feel that in theory they shouldn't make much difference. The debate is significant because of the central role dividends occupy in the fabric of finance. To understand the issues, we'll need to review a little background.

## BACKGROUND

### DIVIDENDS AS A BASIS FOR VALUE

Dividends represent a critical piece of the financial system because of their role in determining the value of stocks. Recall that in Chapter 8 we came to the conclusion that stock prices depended *entirely* on expected future dividends. We need to review those ideas and revise our focus slightly for the present discussion.

The relationship between dividends and value can be viewed from the perspective of an individual investor or from that of the market as a whole.

1. Although payments made to preferred stockholders are also called "dividends," we won't be dealing with them here.

**Dividends** are the **basis of value** for stocks.

### The Individual Perspective

An individual buys a stock because he or she expects an acceptable return from dividends and from the receipts when the shares eventually are sold. Today's price is the present value of those future cash flows discounted at the appropriate rate for an equity investment in the company. If an investor plans to hold a stock for  $n$  years, these ideas can be written as follows.

$$(15.1) \quad P_0 = \frac{D_1}{(1+k)} + \frac{D_2}{(1+k)^2} + \cdots + \frac{D_n}{(1+k)^n} + \frac{P_n}{(1+k)^n}$$

where:  $P_0$  = today's stock price  
 $D_i$  = the dividend in the  $i$ th year ( $i = 1, 2, \dots, n$ )  
 $P_n$  = the selling price of the stock in the  $n$ th year  
 $k$  = the expected return on equity

This idea was developed in more detail in Chapter 8 in equation 8.5, page 333.

### The Whole Market View

In Chapter 8 we went on to develop the whole market focus by replacing  $P_n$  with the present value of the remaining dividends stretching infinitely into the future. We argued that the buyer in year  $n$  would have a model in mind similar to equation 15.1, and replacing  $P_n$  with that model would conceptually push the selling price further into the future. We could apply this mental process as many times as we liked to get the eventual selling price infinitely distant in time, at which point its present value would be zero. Hence, we could work with a model that had an infinite dividend stream rather than a finite stream followed by a price.

### Our Current Focus

Both the finite and infinite stream models are valid expressions for valuation. In Chapter 8 we focused on the infinite stream. Here we'll make use of the individual model with a finite time horizon.

## UNDERSTANDING THE DIVIDEND DECISION

The dividend decision is simple on the surface. It relates to how much of its earnings a firm should pay out in dividends. The options range from nothing to everything. However, it's important that we understand all the implications involved in the choice, because some aren't entirely obvious.

### The Discretionary Nature of Dividends

We need to keep in mind the fact that dividends are legally discretionary. A company's board of directors has the authority to determine the amount of every dividend, including whether anything is paid at all.

This is a very significant point. In spite of the importance of dividends in the valuation process, they are never assured. The purchase of a share of common stock includes no guarantee of future dividends, regardless of what has been paid in the past.

### The Dividend Decision

A firm's earnings belong to its stockholders. The dividend decision is a choice made by management on behalf of those stockholders about what to do with their earnings.

Valuation can be based on a series of dividends and an **eventual selling price**.

Theoretically, there are only two alternatives. Earnings can be paid out as dividends or retained for reinvestment in the business. Both options benefit stockholders, but in different ways.

The dividend option gives stockholders an immediate cash payment that they can spend or reinvest as they please. Retaining earnings, on the other hand, involves investing the money in business projects that are expected to enhance profitability. Those higher profits cause the stock price to increase, which means share owners hold more valuable financial assets which they will eventually sell for higher prices. It's important to focus on the different characteristics of the benefits created by the two mechanisms.

A dividend gives stockholders *current income* they can spend immediately. Current income is important to some investors because they need to live on it. To others it's less significant because they don't need it immediately and would just reinvest it.

Stock price appreciation, on the other hand, can't be spent without selling the stock, which many people don't want to do right away. Hence, retaining earnings produces *deferred income*.

The **dividend decision** is the choice between paying more or less in *near-term* dividends. That implies trading off between the two stockholder benefits. It is not a question of whether the stockholder gets a dividend or gets nothing.

## THE DIVIDEND CONTROVERSY

The central issue about dividends is whether paying them or paying larger rather than smaller dividends has a positive, negative, or neutral effect on a firm's stock price. The question can also be stated in terms of stockholder preferences. Do shareholders prefer current or deferred income as just described? Presumably, doing what they prefer will make a stock more desirable, and its price will be bid up to some extent. In other words, we'd like to know whether it's generally possible for management to partially accomplish the goal of maximizing shareholder wealth by manipulating the firm's dividend-paying policy.

There are three major arguments regarding investors' preferences for or against dividends and several lesser but related theories that tend to tie things together. None of them are entirely right or wrong.

## DIVIDEND IRRELEVANCE

The position endorsed by most theorists is that dividends should matter very little to stock price if they matter at all. The reasoning behind this idea can be seen from equation 15.1. In that equation, suppose early dividends such as  $D_1$  and  $D_2$  are reduced or eliminated, thereby increasing retained earnings. The additional income retained may cause the company to become more profitable and/or grow faster. That, in turn, will make the eventual selling price of the stock,  $P_n$ , higher, and may also make later dividends like  $D_n$  larger.

The dividend irrelevance hypothesis is that the negative impact on  $P_0$  of reducing or eliminating early dividends is offset by the positive effect of an increased selling price in period  $n$  as well as larger later dividends. Hence, the current price of the stock, represented by  $P_0$ , is more or less independent of changes in the early dividends.

## Tailoring the Cash Flow Stream

The irrelevance argument clearly makes sense if investors don't have a preference for current income. If they do, we have to reason a little harder.

The **dividend decision** is whether to **pay cash dividends** or **retain earnings** for growth, both of which benefit stockholders.

The **dividend controversy** is whether paying or not paying **dividends affects stock price**.

Under **dividend irrelevance** the value of eliminated dividends is **offset by growth-created value** in the future.

Investors can **tailor** their income stream by selling off shares of a growing stock that doesn't pay dividends.

A preference for current income means people care about the pattern of cash flows from an investment as well as about the present value of the entire stream of payments (the security's price). For example, retirees who need a certain amount of current income from investments to live comfortably will be upset if a stock they hold reduces its dividends, regardless of the fact that the present value of the whole stream doesn't change.

Does this imply that if management reduces or eliminates dividends in the near term, investors who need current income have to get out of the stock? In theory the answer is no, because an investor in need of cash can always sell some of his or her stock for cash. The portion of the holding that isn't sold appreciates because of the retention of additional earnings, so the value of the original investment can be maintained in spite of the selloff, even though the number of shares owned decreases.

**Example 15.1** Jack and Wendy Winter are retirees who have most of their savings invested in 10,000 shares of Ajax Corporation. Ajax sells for \$10 per share and pays a yearly dividend of \$.50 per share. The firm hasn't grown for some time. The Winters depend on their Ajax dividends to supplement their retirement income.

This year Ajax discontinued the dividend, but began to grow at 5% per year because of the additional retained earnings. How can the Winters maintain their income and their position in Ajax? Assume there are no costs to buying and selling securities.

**SOLUTION:** At \$10 each, the Winters's 10,000 Ajax shares were originally worth a total of  $(10,000 \times \$10 =)$  \$100,000. That's the principal amount of their investment that they want to maintain. At the same time, they have to generate a yearly income stream of  $(10,000 \times \$.50 =)$  \$5,000 to replace the dividend that's no longer being paid.

After a year of growth at 5%, Ajax's shares are worth \$10.50 each. The Winters can raise \$5,000 in cash by selling

$$\frac{\$5,000}{\$10.50} = 476 \text{ shares}$$

At the appreciated price, the remaining  $(10,000 - 476 =)$  9,524 shares are worth

$$\$10.50 \times 9,524 = \$100,002$$

Hence, the gross amount of the Winters's investment is maintained. (The numbers aren't quite exact because we have to deal in whole shares.) As an exercise, calculate the required selloff in the second year.

It's easy to imagine the reverse situation in which a firm's dividend provides more cash than an investor currently needs. In such a case, some of the cash received can be used to buy more stock in the same company. That effectively reduces the dividend and expands the investor's stake in the firm.

Summarizing, it's theoretically possible to *tailor* one's current income from a stock investment in a growing company to any level by buying or selling shares.

### Transaction Costs

All this works fine as long as trading in and out of the stock doesn't cost anything. Much of formal economic theory operates in a hypothetical world where this is the

**Transaction costs** tend to make tailoring an income stream impractical.

case. Capital markets are assumed to be *perfectly efficient*, which among other things implies that securities can be traded without incurring costs. In such a world people would truly be indifferent to the payment of dividends.

In reality, however, financial markets are burdened with imperfections, including transaction costs such as brokerage commissions. Consider the Winters from Example 15.1. If they have to pay commissions to sell stock, the process of tailoring a current income stream will have a cost. That may make it impossible for them to stay in the Ajax investment.

As a practical matter, if the commission rate is small, selling stock to generate current income can remain a reasonable thing to do. But if the rate is significant, selling off shares can become a prohibitively costly process. Then the discontinuation of the dividend would probably drive the Winters and others like them away from Ajax. If most of the firm's stockholders were affected that way, Ajax's market price would drop.

Clearly, the more significant the transaction costs, the less valid the irrelevance theory becomes.

### Income Taxes

It's worth noting that the tax system plays a subtle part in the indifference theory. Notice that the idea depends on trading short-run dividend income for price appreciation in the longer run. We've described that trade-off in pretax terms with equation 15.1; however, the tax system can add a complication.

Dividends are taxed as ordinary income, while appreciation is taxed as a capital gain (see pages 43–44). Therefore, the difference in the tax rates on those types of income should be included in the offsetting idea. This is conceptually easy to do. To the extent capital gains are taxed at lower rates than ordinary income, it takes a proportionately smaller increase in  $P_n$  to offset the value of a near-term dividend reduction than it would if the rates were the same.

### The View from within the Company

From the perspective of the firm, dividends represent an outflow of cash that could be used for other things. Specifically, paying dividends reduces retained earnings, which are a source of funds for capital budgeting projects.

Recall that in Chapter 13 (page 528) we dealt with what happens when the firm runs out of retained earnings before it runs out of projects. We concluded that if more equity is needed after retained earnings are exhausted, the company raises it by selling additional stock. This means that a dividend paid may result in the need to sell new stock, because it reduces earnings retained.

This doesn't create a problem if the new stock is sold in a perfectly efficient market without incurring flotation costs.<sup>2</sup> In that case, the firm would be internally indifferent between paying and not paying dividends. The cash used for dividends would simply be replaced by selling stock as needed.

*However, if there are flotation costs, an expense is associated with selling new stock. Then paying dividends leads to incurring extra cost, and the firm has a definite internal preference for not paying dividends. This preference is shared by stockholders because more cost ultimately means less earnings.*

Firms **prefer not paying dividends** if it avoids selling new stock, because **retained earnings cost less** than new equity.

from the **CFO**

2. Recall that flotation costs are the transaction costs associated with issuing new securities.

Needless to say, flotation costs do exist in the real world, and they're quite significant.

## DIVIDEND PREFERENCE

Under **dividend preference** investors prefer immediate cash to **uncertain** future benefits.

The dividend preference theory maintains that generally stockholders prefer receiving dividends to not receiving them. The argument is based on the uncertainty of the future. It asserts that stockholders prefer current dividends to future capital gains, because something paid today is more certain to be received than something expected in the future. The idea can be put in somewhat cynical terms by saying that stockholders don't trust management to use the cash on hand today to grow the firm into something larger and more valuable later on.

Notice that this is not a time value of money argument. It doesn't say people prefer the dividend today because it's worth more. It says they'd rather have it now to be sure of getting it. The argument is often called the *bird in the hand theory* from the old cliché, "A bird in the hand is worth two in the bush" (because you may not catch either of those in the bush).

The reasoning has one rather substantial flaw. If stockholders are concerned about reinvesting dividend money in a firm because they're afraid it will be lost, why have they invested in that firm in the first place?

## DIVIDEND AVERSION

The dividend aversion position asserts that investors generally prefer that companies not pay dividends in order to enhance stock prices later on. The argument is based on capital gains taxes, so its persuasiveness depends on current tax law.

The logic underlying the idea is that dividends are taxed at ordinary income rates, while capital gains are taxed at lower "capital gains rates." Notice that in equation 15.1 the dividend decision involves trading early dividends for a higher selling price in period  $n$ . The current dividend is ordinary income, but the appreciated price represents a capital gain when the stock is sold. Hence, the trade-off between a dividend today and a higher price later has to be modified to reflect the fact that, after taxes, investors get to keep more of the appreciation than the dividends. That clearly makes the deferred gain more desirable.

Congress makes changes to the tax treatment of capital gains almost constantly. Most of the time tax rates on capital gains are set lower than the rates on ordinary income to provide an incentive for investing, which in turn stimulates the economy. But that hasn't always been the case. The Tax Reform Act of 1986, for example, eliminated favorable treatment of capital gains for several years until a favorable bias was gradually restored during the 1990s. As of 2005, capital gains enjoy a substantial tax advantage over ordinary income.

It's important to realize that Congress is capable of reversing itself again and reducing or eliminating capital gains benefits in the future. The issue is politically sensitive because capital gains largely accrue to the wealthy, so favorable rates are a break for the rich.

There are two other less obvious tax benefits associated with capital gains that support a dividend aversion argument. First, taxes on capital gains are deferred until stock is sold. Second, all taxes on capital gains are avoided if stock isn't sold during an investor's lifetime. Then the shares pass to heirs with a tax basis equal to their current market value, so the price appreciation up to that date is never taxed. (This benefit is scheduled to be eliminated in 2010.)

Under **dividend aversion** investors prefer future capital gains to current dividends because of lower **tax rates**.

## OTHER THEORIES AND IDEAS

After all this we're still not sure whether there ought to be a general preference for or against dividends. There are a few other ideas that can help us understand the overall picture.

### The Clientele Effect

The clientele argument is that individual investors do have definite dividend preferences because of their needs for more or less current income. These preferences arise because transaction costs make tailoring a cash flow stream by buying and selling stock very expensive.

It's easy to visualize the kinds of people who have various preferences. Retirees living on fixed incomes, for example, are likely to need dividend income to supplement pensions and social security. Young professionals with plenty of disposable income, on the other hand, may be willing to bet on capital gains in the longer run if the expected return is higher. People tend to gravitate toward the type of company that meets their needs. The retirees are likely to prefer companies like public utilities that are stable and tend to pay regular dividends. The young professionals like high-tech start-ups that don't pay dividends at all but may offer huge price appreciation.

Each company develops a *clientele* of investors whose needs match its dividend-paying characteristics, hence, the term **clientele effect**. The most significant implication of the effect is that once a clientele is established, it's unwise to change dividend practices. Such a change would be almost guaranteed to alienate shareholders who invested in the firm at least partially because they liked its dividend policy. It would cause them to migrate away from the stock, creating a general downward pressure on its price.

The **clientele effect** maintains that investors choose stocks for **dividend policy**, so any **change** in payments is **disruptive**.

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### The Residual Dividend Theory

The **residual dividend theory** focuses on the firm's internal need for capital. Earlier we mentioned that dividends reduce retained earnings, and therefore can force the sale of additional stock when a company needs equity capital for projects. Further, we noted that equity from new stock is more expensive than retained earnings because of flotation costs.

Under the residual dividend concept, companies recognize the cost effectiveness of retained earnings, and fund the equity portion of all viable projects with earnings before paying any dividends. Anything left over is paid out as a dividend. The term "residual" comes from this *leftover* status of the dividend.

*The residual theory has an intuitive appeal, but it isn't the way most companies work. Most managements see a value in dividends and set them aside first rather than last. Further, most companies can come up with a virtually unlimited number of capital projects that look good on paper. As a result, a firm that truly adhered to the residual theory might never pay a dividend.*

### The Signaling Effect of Dividends

Rightly or wrongly, financial markets have come to read a great deal of information into the payment or nonpayment of a dividend. Indeed, the dividend is viewed as a way for management to send a message to its shareholders. People seem to have more faith in the message carried by dollars and cents than in spoken words. The phenomenon

Under the **residual** view, dividends are paid from earnings only **after all viable projects are funded**.

from the **CFO**

**VIDEO** >>

is called the “signaling or information effect of dividends,” and is especially significant when earnings change.

If earnings turn down, the continuation of a regular dividend is viewed as a statement by management that the business is fundamentally sound and that the downturn is temporary. As a result, firms generally continue paying their normal dividends in the face of temporary decreases in earnings. The message to shareholders is, “EPS is off a little, but don’t worry about it. Things will be fine. In the long run we expect to have plenty of money, so here’s your regular dividend.”

In the same vein, an increase in the dividend is a stronger statement of management’s confidence in the future. An increase accompanying rising earnings is a statement that the earnings improvement is expected to be permanent, and signifies a generally bright future. An increase in the face of a downturn is a clear attempt to allay stockholders’ fears.

On the other hand, a decrease in dividends is taken as terrible news. It generally comes after a sustained reduction in earnings, and tells the market that management doesn’t expect the company to have the cash it had in the past. Investors usually react negatively and tend to sell off the stock, depressing its price. A decrease without an associated decline in earnings is a more mysterious but nevertheless dark message that isn’t well received either.

As a result of all this, managements sometimes maintain or even raise dividends in an attempt to forestall negative investor reactions to serious problems. This practice is clearly inappropriate.

The signaling effect is very real and makes it difficult to tell what investor preferences for cash dividends really are. For example, suppose a firm has steady earnings but reduces its regular dividend, explaining to stockholders that it needs more money for capital projects. In spite of the explanation, the stock’s price drops. Is the drop due to the fact that investors prefer a higher dividend, or is it because they don’t quite believe management’s explanation and suspect operating problems are coming? It’s very difficult to tell.

### The Expectations Theory

The *expectations theory* is a refinement of the signaling effect. It says that investors form expectations of what a company’s next dividend will be and can become alarmed if those expectations aren’t met, even if the dividend actually paid is steady or increasing.

For example, suppose a company whose dividend has been \$2.00 per share achieves a substantial improvement in business, and people form the expectation that the next dividend should be \$2.20. Then suppose the firm pays \$2.10, an increase, but a smaller one than expected. The expectations theory says that investor reaction is likely to be negative because expectations weren’t met, and that the stock’s price may very well fall.

## CONCLUSION

The conclusion is that we don’t really have a conclusion. No one knows with certainty whether paying more or less in dividends generally increases or decreases stock prices. Most practicing financial professionals feel dividends have a positive effect on prices. Scholars tend to say that notion can’t really be proven.

As a practical matter, the majority of companies do pay dividends. On the average, U.S. companies pay out about 40% of their earnings in dividends.

Cash dividends signal **management’s confidence** in the future.

Dividends that **fail** to fulfill stockholders’ **expectations** send a **negative message** even if the payment is good.

## PRACTICAL CONSIDERATIONS

### LEGAL AND CONTRACTUAL RESTRICTIONS ON DIVIDENDS

Companies aren't always entirely free to pay whatever dividends they want. Restrictions are imposed by state law and contractual agreements.

#### Legal Restrictions

The laws governing corporate dividend practices differ from state to state, but two generalizations are possible.

First, dividends can't be paid out of contributed capital; they must come from retained earnings. This rule protects creditors. Suppose Able starts a company, investing \$1,000 of his own equity money, and convinces Baker to *lend* the firm another \$1,000. As soon as the company is set up, Able, being the only shareholder, declares a \$2,000 cash dividend which he pays to himself. The company now has no operating money, so it closes. Able has effectively stolen Baker's \$1,000. To prevent this abuse, the law requires that firms earn some money before dividends are paid, and that dividends can be paid only to the extent of cumulative past earnings.

Second, a firm can't pay dividends if it is insolvent, meaning its liabilities exceed its assets. This rule is also designed to protect creditors. An insolvent company may face bankruptcy proceedings in which its assets may be sold to pay off as many of its liabilities as possible. A company anticipating proceedings could sell its assets and pay a dividend to stockholders with the cash received. This would take the assets out of the hands of the creditors at the last minute and leave them with a loss that should be the stockholders'.

#### Contractual Restrictions

##### Debt Contracts

Business loans and bond issues usually come with restrictions on the behavior of the borrowing company that are designed to ensure repayment. Such contractual agreements are called **indentures** (bonds) and **covenants** (loans). The restrictions are generally aimed at conserving cash and maintaining prudent, conservative business practices. (See Chapter 7, page 302.)

It isn't uncommon for indentures and covenants to restrict or prohibit the payment of common stock dividends under certain conditions. For example, a lender might stipulate that if EBIT falls below two times debt service (the sum of interest and principal payments) in any period, no cash dividends can be paid. This restriction would protect the interests of creditors by preventing cash from being siphoned off to stockholders when it looks like financial troubles might be approaching.

##### Preferred Stock

Another common restriction on the payment of common stock dividends is the cumulative feature of preferred stock dividends. Recall that preferred stock pays a fixed dividend into the indefinite future, but that the payment isn't quite guaranteed. The *cumulative feature* generally specifies that if one or more preferred dividends are passed, no common stock dividends can be paid until they're caught up cumulatively. (See Chapter 8, page 347.)

Dividends **can't be paid** by an **insolvent** firm and must come from current or prior **earnings**.

Loan **indentures** and **covenants** may limit dividend payments to **protect creditors'** interests.

The **cumulative** feature of **preferred stock** limits dividend payments.



## PRACTICAL FINANCE

### The Painful Decision to Cut Dividends

Companies are reluctant to reduce dividends because of the signaling and clientele effects. They do it only when forced to by poor earnings or fundamental changes in their businesses. Two examples are worth noting.

IBM was a financial powerhouse from the 1960s until the late 1980s when it started having severe market problems associated with the general shift from mainframe to personal computers. The company experienced record losses in 1992. As a result, it cut its dividend from \$4.84 to \$1.00 in 1993. Notice that in spite of the fact that the company was in dire straits and losing money, the dividend was not entirely eliminated. This undoubtedly was a signal from management intended to convey long-term confidence in its ability to bring the company back. That did happen beginning in 1994, and during the mid-1990s IBM was an exceptional stock market performer. Dividends, however, have not been returned to their former levels, reaching just \$1.20 in 2006.

The clientele effect is especially important to public utilities such as water and electric companies. Utilities are regulated monopolies, meaning they have no competitors, but the prices they can charge are limited by the government. As a result their performance is very stable, and they typically pay out most of their earnings in dividends. Utilities attract investors like retirees who value stability and depend on receiving regular dividend income. These ideas are behind the clientele theory.

In the mid-1990s the electric utility industry was deregulated. Companies no longer enjoy government protection, and have had to learn to survive in more traditionally competitive markets. That means a policy of paying out nearly all earnings in dividends is no longer appropriate. The first electric utility to recognize that in its dividend policy was Florida Power and Light (parent company FPL). FPL cut its dividend by about a third in 1994 even though current earnings were good and the move broke a string of 47 straight annual increases. The stock market initially reacted negatively, dropping FPL's price, but later absorbed the logic behind the move. As a result the firm went on to become an outstanding performer.

The best illustration of a painful dividend cut in recent years is probably the action taken by General Motors in 2006. At the time GM was still the world's largest car manufacturer, but was in danger of losing that distinction to Japan's Toyota. The company has been beleaguered by foreign competition and out-of-control labor costs for years, but was stopped in its tracks in 2005 when those issues along with faltering sales produced a net loss of \$8.6 billion. That's about \$24 million a day! Despite the flood of red ink and darkening financial forecasts, GM continued to pay dividends at a quarterly rate of \$.50 per share throughout 2005 holding onto the \$2.00 annual payout it had maintained since 1997. It wasn't until its third largest shareholder, billionaire investor Kirk Kerkorian, actively pressured for more aggressive action in reviving profitability that management moved to reduce dividends along with other cost-cutting measures.

The overall action included cutting the dividend in half to an annual level of \$1.00, as well as reducing executive pay and limiting pensions and health care benefits for certain retirees. The moves mirrored suggestions by newly elected board member Jerome York, a top Kerkorian aide.

The market reacted by dropping GM's share price by \$.53 to \$22.81, on the day of the announcement, February 7, 2006. Shortly thereafter, however, the share price began an upward climb, and was trading in the \$27 range by June of 2006.

## DIVIDEND POLICY

Dividend policy refers to the rationale under which a firm determines what it will pay in dividends. The term encompasses both the amount paid and the pattern under which changes in the amount occur over time.

Before getting into different policies, we need two definitions. The dividend **payout ratio** is the ratio of the dividends paid to earnings. It can be thought of in total or in per-share terms.

$$(15.2) \quad \text{payout ratio} = \frac{\text{dividend}}{\text{earnings}} = \frac{\text{dividend per share}}{\text{EPS}}$$

For example, a payout ratio of 40% would mean the firm pays a cash dividend of 40 cents out of every dollar it earns. The concept contains a subtlety that's worth pointing out. The dividend is paid in cash, but the earnings figure doesn't represent cash availability. That's because net income (earnings) includes accrual accounting entries for both income and cost. Hence, in any particular year, more or less cash may be available to pay dividends than is implied by earnings. More significantly, a firm with even a modest payout ratio may have trouble paying the appropriate dividend if it has other substantial cash needs. These might include capital expenditures and debt repayment.

*Stability* refers to the constancy of dividends over time. A **stable dividend** is constant in amount from period to period but is usually increased occasionally. A dividend with a *stable growth rate* increases by a more or less constant percentage over time.

Recall that a decrease in dividends generally carries a bad signaling effect. Managements therefore try to keep dividends from ever going down. As a result, the term "stable" tends to imply a dividend that can go up or flatten out, but that doesn't decline.

### Alternate Policies

Three dividend policies are common.

#### Target Payout Ratio

A firm following this policy selects a long-run payout ratio with which it's comfortable. However, it doesn't apply that ratio blindly each year. To do so would result in dividends that fluctuate up and down with earnings. From what we've learned about signaling, that would have a negative effect on the stock's market price. The actual payout ratio is generally somewhat below the target to allow for variations in earnings without forcing a decrease in dividends.

#### Stable Dividend per Share

A constant dividend is paid regardless of earnings unless business conditions deteriorate so badly that the firm's ability to continue paying comes into doubt. If things go well and the company grows, the dividend is raised from time to time. A stable dividend per share is by far the most common practice.

#### Small Regular Dividend with a Year-End Extra if Earnings Permit

With this policy management more or less assures stockholders of the regular dividend, but maintains the ability to either pay or forgo the year-end extra. In theory this gives the firm the ability to lower its dividend level without a negative informational effect. In other words, the firm attempts to defeat the signaling effect of a

The **payout ratio** states dividends as a fraction of earnings.

A **stable dividend** is **nondecreasing**.

Typical policies include a **target payout ratio**, a **stable dividend**, and year-end extras.

reduction by keeping stockholders from counting on the extra payment. Unfortunately, people get used to the extra payment very fast.

## THE MECHANICS OF DIVIDEND PAYMENTS

In the work we've done so far, we've treated dividends as annual cash flows. In practice, however, virtually all companies make dividend payments quarterly.<sup>3</sup>

### Key Dates

Every quarterly dividend has four key *dates* associated with it.

#### The Declaration Date

The amount of each quarterly dividend is authorized by the firm's board of directors. A separate authorization occurs every quarter even if the firm's policy is to pay the same amount repeatedly. The date on which the board authorizes the dividend is called the **declaration date**.

#### The Date of Record

Stocks are **registered securities**, meaning that a list is kept indicating the name of the *owner of record* of every share. When a share is sold, ownership is transferred on the record from the seller to the buyer.<sup>4</sup> When the board authorizes a dividend, it stipulates a **date of record**. The dividend is payable to owners of record as of the date of record.

#### The Payment Date

The board also stipulates the date on which the dividend check is to be mailed. This is the **payment date**.

#### The Ex-Dividend Date

When shares are sold, it can take a few days to update the ownership records, so a sale made shortly before the date of record might not be recognized for payment purposes. To allow for a paperwork lag, brokerage firms have agreed to cut off sales *for dividend purposes* two business days prior to the date of record. The cutoff is called the **ex-dividend date**.

Figure 15.1 is a graphic representation and some sample dates. The ex-dividend date is significant with respect to stock market activity. An investor who purchases the stock prior to the ex-dividend date receives the next dividend; one who purchases on or after that date does not. In the example, the stock trades without the dividend starting on the morning of May 10.

As ex-dividend dates pass, stocks generally drop in price, reflecting the loss of the dividends to new purchasers. Interestingly, the drop tends to be 20% or 30% less than the full amount of the dividend. The difference is believed to be due to the fact that investors value the dividend after taxes rather than before.

### Dividend Reinvestment Plans

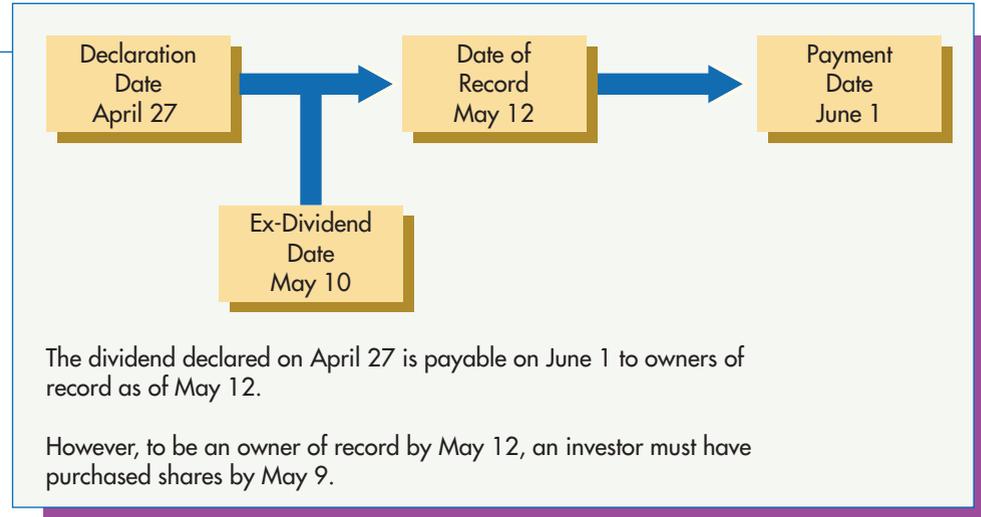
Most large companies offer stockholders an optional dividend reinvestment plan under which the company keeps the dividends of participating stockholders and gives them additional shares instead.

Dividends are authorized on the **declaration date** for owners as of the **date of record** and are sent on the **payment date**.

An investor who buys a stock on or after the **ex-dividend** date does **not** receive the pending dividend.

3. The annual figures people work with are generally the latest quarterly figure times four.

4. Most large companies use specialized firms called "transfer agents" to do this record keeping chore. See Chapter 8.

**Figure 15.1****The Dividend Declaration and Payment Process**

Large companies offer automatic **dividend reinvestment plans** to shareholders.

For example, if a firm paid a \$.50 dividend and someone owned 100 shares, his or her dividend check would be for \$50. If the stock was selling for \$25 at the time, that person would receive two additional shares instead of the money.

Reinvestment plan shares can come from either of two sources, depending on the nature of the plan. In one approach the undistributed dividends are pooled and used to buy existing shares on the open market. The shares are then distributed back to the participating stockholders. This kind of plan is just a service provided to stockholders and doesn't significantly benefit the company.

In the second kind of plan, the company issues new shares at a price that's usually slightly below market. This approach has two benefits. It avoids the brokerage fees associated with buying existing stock, and it provides the company with a source of new equity capital that's free of flotation costs.

### Tax Treatment

It's important to understand the tax treatment of reinvested dividends. In the reinvestment process, stockholders *effectively* receive cash and use it to buy more stock. The company just administers the transaction on their behalf. For this reason, the Internal Revenue Service treats the reinvested dividend as taxable income even though the stockholder never had the cash in hand.

## STOCK SPLITS AND DIVIDENDS

Companies sometimes revise the number of shares of stock they have outstanding with stock splits and stock dividends. These transactions increase the count of shares in the hands of stockholders with no other real effect.

### Stock Splits

A *stock split* issues new shares in numbers proportionate to those already outstanding. We'll illustrate the idea with a two-for-one split.

A firm with 100,000 shares outstanding executes a two-for-one split by issuing an additional share to all current stockholders for every share they already own. After the split there are 200,000 shares outstanding, and all stockholders hold twice as many shares as they held before.

Stock **splits and dividends** issue new shares to **existing stockholders** in proportion to the number already held.

Stock splits and dividends **don't change ownership** or control and have **no real value** to shareholders.

**http://**

Visit the Equity Analytics, Ltd., web site at <http://www.e-analytics.com> Click Stock Splits & Stock Dividends and then a recent week to view split activity.

It's important to realize that after a split, every stockholder has the same proportion of outstanding shares he or she had previously. Therefore, the split doesn't result in any change in ownership or control.

Because there are twice as many shares after the split representing ownership of the same company, each share is worth half as much as it was before. But because each stockholder owns twice as many shares, there's no change in anyone's wealth. In effect, a split doesn't do anything but change the arithmetic involved in keeping track of shares.

A split doesn't have to be two-for-one; it can be made in any proportion. For example, a 1.5-for-1 split implies that shareholders get one new share for every two they already own. A 1.25-for-1 split would give one new share for every four owned. In any case, the effect is the same: The proportionate ownership of the company is unchanged, as is the wealth of stockholders.

*Reverse splits* are also possible. A company might, for example, call in all of its shares and reissue one new share for every two owned. This would halve the number of shares outstanding and generally double the price.

## Stock Dividends

When additional shares are issued as we've just described, and the number of new shares is less than or equal to 20% of the original number of shares outstanding, the procedure is called a **stock dividend** rather than a stock split. For example, a 1.1-for-1 "split," in which 1 new share is received for every 10 owned, is called a 10% stock dividend.

## Accounting Treatment of Stock Splits and Stock Dividends

A stock dividend is in reality just a small split. The two transactions are the same conceptually, and neither creates any real economic value. However, their respective accounting treatments differ substantially. Accounting for splits is very simple, while handling stock dividends is more complicated. We'll illustrate with an example after reviewing the standard equity accounts.

Recall that the equity section of the balance sheet is divided into the following three accounts.

- *Common stock* carries the par value of all outstanding shares.
- *Paid in excess* carries the amount by which the original price of all stock sold exceeded par.
- *Retained earnings* represents the sum of all past earnings that haven't been paid out in dividends.

The equity of Eagle Inc. is presented in Table 15.1. The firm sold 2 million shares of \$3 par common stock at \$4, and later earned \$4 million which was not distributed as dividends.

**Table 15.1**

**Eagle Inc.  
Stockholders'  
Equity**

Common stock (2 million shares outstanding, \$3 par) . . . . .	\$ 6,000,000
Paid in excess . . . . .	2,000,000
Retained earnings . . . . .	<u>4,000,000</u>
Total common equity. . . . .	\$12,000,000
Book value per share . . . . .	\$ 6.00

**Table 15.2**

**Eagle Inc.  
Stockholders'  
Equity after a  
Two-for-One  
Stock Split**

Common stock (4 million shares outstanding, \$1.50 par) . . .	\$ 6,000,000
Paid in excess . . . . .	2,000,000
Retained earnings . . . . .	<u>4,000,000</u>
Total common equity. . . . .	\$12,000,000
Book value per share . . . . .	\$ 3.00

A **stock split** simply changes **par value** and the **number of shares**. The capital accounts are unaffected.

**Accounting for a Split**

The impact of a split on the equity accounts is very simple. The number of shares is increased and the par value is reduced proportionately. If Eagle were to split two-for-one, the number of shares would double and par value would halve. The result is illustrated in Table 15.2.

Notice that the dollar amounts in the three accounts are unchanged. The changes appear in the number of shares outstanding, the par value, and the stock's book value per share. Also notice that no reference needs to be made to the current market price of the stock to account for a split.

In a **stock dividend** money is moved from RE into the stock accounts to give the **appearance of a sale** at market price.

**Accounting for a Stock Dividend**

In a stock dividend, new shares are issued but the stock's par value isn't changed. Therefore, the common stock account has to be increased for the par value of the newly issued shares. In addition, the paid in excess account is increased as though the new shares had been sold at a price equal to the market value of the stock just before the stock dividend. The balancing entry reduces retained earnings by the sum of the additions to the common stock and paid in excess accounts.

We'll illustrate with a 10% stock dividend for Eagle Inc. that results in 200,000 new shares. Assume the stock is selling for \$10 before the dividend.

The common stock account is increased by the par value of the new shares,

$$200,000 \times \$3 = \$600,000$$

Because the stock's market price is \$10, the excess over par is (\$10-\$3=) \$7, so the paid in excess account increases by

$$200,000 \times \$7 = \$1,400,000$$

At the same time, retained earnings is reduced by \$2,000,000, the sum of these entries.

Because the additions to the first two accounts are offset by the reduction to retained earnings, total equity doesn't change. Book value per share does change, however, because of the additional shares. The result is shown in Table 15.3.

**Table 15.3**

**Eagle Inc.  
Stockholders'  
Equity after a  
10% Stock  
Dividend**

Common stock (2.2 million shares outstanding, \$3 par) . . . .	\$ 6,600,000
Paid in excess . . . . .	3,400,000
Retained earnings . . . . .	<u>2,000,000</u>
Total common equity. . . . .	\$12,000,000
Book value per share . . . . .	\$ 5.45

The entries recording a stock dividend are said to capitalize the market value of the new shares into the two paid-in accounts. They seem to be an attempt to reflect the creation of new market value even though total equity doesn't change. This is misleading, because no new economic value is created by a stock dividend.

### Rationale for Stock Splits and Stock Dividends

Because stock splits and dividends don't seem to have any real economic meaning, it's fair to ask why companies do them. The reasons make some sense.

#### The Trading Range Argument for Splits

Many financial professionals feel that a stock loses its appeal to small investors if the price of a single share gets too high. For example, suppose a share of IBM sold for \$20,000. Then no one could invest in the company unless he or she had at least that much money. Most small investors would be out of the market for IBM.

To keep the markets for their equity as broad as possible, companies split their stocks from time to time to keep prices in a **trading range**. Most people feel this is somewhere between \$30 and \$80.

It can be argued that keeping the market for a stock broad in this manner puts an upward pressure on price, because it maximizes the number of potential buyers. Whether that's true is debatable. Nevertheless, almost all companies use splits to keep prices in trading ranges. Check the listings in *The Wall Street Journal*; you'll find very few issues trading at prices over \$100.

#### Giving Something That Doesn't Cost Anything

Stock dividends tend to be used as signaling devices. They're often employed when companies want to send a positive message, but for some reason can't give as large a cash dividend as they'd like.

For example, a firm might give a stock dividend in addition to its regular cash dividend if things are going exceptionally well but it needs to conserve cash for investment in projects. Conversely, a stock dividend might be offered if things are going poorly, and no money is available for cash dividends, but management wants to make a positive statement by giving stockholders something. The value of such practices is clearly questionable.

#### The Effect on Price and Value

Splits and stock dividends increase shares outstanding without changing the economic value of the underlying company. It's generally accepted by scholars and most professionals that the transactions result in proportionate drops in market price, so stockholders see no real financial gain.

However, there's an underlying sentiment among some investors that something is gained with a split or a stock dividend. This probably comes from the fact that the transactions, especially splits, usually come along when prices are rising. Hence, the split or dividend takes on a positive information effect through a general association with rising prices.

The statistical studies that have been done seem to indicate that there is indeed no free lunch, and that prices do drop proportionately with splits and stock dividends.

#### A Potential Point of Confusion

It's important not to confuse a stock dividend with the dividend reinvestment plans we talked about in the last section. In a dividend reinvestment, stockholders are actually

**Splits** keep stock prices in a **trading range**.

**Stock dividends** are an attempt at signaling.

purchasing additional shares and, because everyone doesn't participate, the proportional ownership of the company changes.

## STOCK REPURCHASES

From time to time companies buy up their own stock. There are several reasons for doing this, but the most important is that it's an effective substitute for a dividend.

### REPURCHASE AS AN ALTERNATIVE TO A DIVIDEND

A firm with the cash in hand to pay a dividend can use the money to buy some of its own stock instead. Doing that reduces the number of shares outstanding, thereby increasing the EPS of the remaining shares. If the market attaches the same price/earnings (P/E) ratio to the stock after the repurchase that it did before, the remaining shares will go up in price. As a result, the remaining stockholders will see an appreciation in the value of their shares in lieu of a cash dividend. A numerical illustration will make the idea clear.

Suppose the Johnson Company has after-tax earnings of \$5 million and 2,500,000 shares of common stock outstanding. Also suppose the stock trades at a P/E ratio of 10. Then EPS and market price are as follows.

$$\text{EPS} = \frac{\text{EAT}}{\text{number of shares}} = \frac{\$5,000,000}{2,500,000} = \$2.00 \text{ per share}$$

$$\text{market price} = \text{EPS} \times \text{P/E} = \$2.00 \times 10 = \$20$$

Now suppose Johnson has \$1 million that it can distribute in dividends. If it does so, the dividend per share will be

$$\text{dividend} = \frac{\$1,000,000}{2,500,000 \text{ shares}} = \$.40 \text{ per share}$$

However, suppose the company uses the \$1 million to buy its own shares instead of paying a dividend. Then it can purchase and retire

$$\frac{\$1,000,000}{\$20} = 50,000 \text{ shares}$$

After the repurchase, there will be

$$2,500,000 - 50,000 = 2,450,000 \text{ shares}$$

left outstanding. If earnings don't change, EPS will then be

$$\text{EPS} = \frac{\$5,000,000}{2,450,000} = \$2.04 \text{ per share}$$

Finally, if the P/E remains the same, the market price of the remaining shares will be

$$\text{market price} = \text{EPS} \times \text{P/E} = \$2.04 \times 10 = \$20.40$$

Under these assumptions, buying back the shares results in a price appreciation in the remaining shares just equal to the dividend. The company has spent the available cash and stockholders have received value, but no dividend was paid.

Repurchasing shares is an **alternative** to paying a dividend.

Notice that the repurchase substitutes a potential capital gain for current cash income. Therefore, to spend the value they've received, stockholders would have to sell some of their shares.

### Methods of Repurchasing Shares

Stock can be repurchased in three ways. The first and simplest method is to buy the shares on the open market. However, this can be difficult to do quickly and without affecting the market price if a large number of shares are to be acquired.

The second method is to make a **tender offer** to buy shares at a set price from any stockholders interested in selling. In this approach, stockholders are invited to “tender” their shares for purchase at the proposed price, which is generally somewhat above the current market price. If too many shares are tendered, the firm buys a pro rata portion of all those offered.

In the third method, the firm makes a negotiated deal with a large investor who holds a big block of stock. Such investors are frequently institutions such as mutual funds, pension funds, or insurance companies. This approach can involve some risk, because the price negotiated with a large and powerful investor will generally be above the stock's market price. In essence the firm is buying one stockholder's shares at a premium with money belonging to all stockholders. It's easy to interpret this as unfair to those who aren't being bought out. Remaining stockholders have been known to sue management over the issue.

## OTHER REPURCHASE ISSUES

### The Opportunistic Repurchase

If a company's stock is undervalued,<sup>5</sup> repurchasing shares can be beneficial to the remaining stockholders. This can happen if the market takes a sudden downturn that's expected to be temporary. Let's consider an example.

Suppose Catatonic Inc. has 100,000 shares outstanding that sell at their book value of \$10. This means the market sees the firm as worth \$1 million, the book value of its equity. Also suppose the firm has \$100,000 in available cash. Then imagine that the stock market crashes, losing 30% of its value, and Catatonic shares fall to \$7.

Assume management believes the market will recover within a reasonable period and the firm's shares will again sell at book value. The company therefore uses its cash of \$100,000 to repurchase stock. At \$7 per share it acquires

$$\frac{\$100,000}{\$7.00} = 14,286 \text{ shares}$$

This leaves

$$100,000 - 14,286 = 85,714$$

shares outstanding.

Repurchases are appropriate when a stock is **temporarily undervalued** or the firm has **excess cash**.

5. A security is said to be “undervalued” if it is selling in a financial market for less than its true worth. Clearly, this reflects a difference of opinion about that true worth.

Later, the market recovers and again values the firm at book equity, which is now \$900,000 because \$100,000 was spent on stock. Each share will then have a market value of

$$\frac{\$900,000}{85,714} = \$10.50$$

This amount is \$.50 more than the value of a share before the market downturn. Management earned the extra value for the remaining stockholders by taking advantage of the temporary drop in market price. Of course, it was earned at the expense of shareholders who sold at \$7.

The situation described in the illustration is exactly what happened during a famous stock market decline in 1987. The market lost approximately 30% of its value in a few weeks, and then stabilized. Many corporate managements recognized the situation as a buying opportunity and rushed to repurchase shares. That turned out to be the right thing to do at the time, because the market subsequently recovered. Unfortunately, it's not easy to determine when a stock is *temporarily* undervalued.<sup>6</sup>

### Repurchases to Dispose of Excess Cash

A period of high earnings that isn't expected to be repeated can leave the company with a one-time sum of money. If there aren't sufficient capital investment opportunities available to use up the funds, they should be distributed to stockholders.

Excess cash can be distributed by paying a one-time dividend. However, such a payment can create problems because of the signaling effect. Managers are reluctant to increase and then decrease dividends, because they anticipate a negative information impact from the decrease that more than offsets the positive effect of the extra money paid.

A stock repurchase can be a solution to the dilemma. It effectively distributes the money to the shareholders, but tends not to generate expectations of future distributions the way a dividend might.

### Taxes

As we've demonstrated, a stock repurchase creates appreciation in the unredeemed shares. If the firm repurchases its stock occasionally, the appreciation is treated as a capital gain and is not taxed until the stock is sold.

However, if a firm repurchases its stock regularly and predictably, the IRS is likely to take the position that the transactions are effectively dividends. It could then tax the gains received by stockholders as current, ordinary income even though no cash was received.

As a result of this possibility, regular repurchase activity in lieu of dividends is not advisable. There is considerable uncertainty in this area of taxation.

### Repurchases to Restructure Capital

It should be clear from our work in Chapter 14 that restructuring capital in the direction of debt involves repurchasing stock. Indeed, capital restructuring is a major reason for repurchases. In a transaction to restructure toward debt, the firm simply borrows money and uses the proceeds of the loan to buy back its stock.

6. This example is presented just to illustrate the effect of buying undervalued stock. The market doesn't price companies on the basis of their book values.

**QUESTIONS**

1. Dividends are said to be the basis for the value of stocks. If that's true, how do we explain the fact that companies that pay no dividends often have substantial market value? (Such companies are usually relatively young and in high-growth fields.) First explain the phenomenon in terms of the individual valuation model (a stream of dividends followed by a selling price, equation 15.1). Then reconcile the idea with the whole market model (an infinite stream of dividends). Can you explain cases in which managements claim their companies will never pay dividends? (*Hint*: Does such a claim make sense?)
2. Given the importance of dividends to the well-being of equity investors, why do they put up with the fact that dividends are discretionary?
3. Fully explain the choices implied by the dividend decision. Are the results of the choices known or uncertain?
4. There is said to be a controversy over dividends. What is it, and why is it important?
5. You're an investment advisor and have several well-off older people among your clients. One of these individuals, Charlie Haverty, steadfastly refuses to invest in companies that pay significant dividends. A successful investment counselor advised him to avoid such stocks in 1965, and he's stuck to that view ever since. However, he never really did understand the reasoning behind the advice. How would you advise Charlie today? Include an explanation of why the advisor said what he did in 1965, and whether it was better advice then than it is now.
6. You're a financial analyst for a large mutual fund. You're doing an analysis of the Truebright Apparel Company, which makes stylish cotton clothes for teenagers. The company has recently been under attack by foreign competition and seems to have lost its edge in the fashion market. EPS fell from \$2.00 to \$1.80 to \$1.20 over the past three years. Dividends were held steady at \$1.00 per share in spite of the declining earnings for two years. Last year the dividend was raised to \$1.50. Why do you think the dividend was maintained and then raised? How would this affect your recommendation?

**BUSINESS ANALYSIS**

1. You're the treasurer of SuperTech Inc., a high-technology firm in the fast-growing computer business. The management team has recently been trying to decide on a long-term dividend policy. Earnings are good, but the firm has far more investment opportunities than income.

There's no doubt that the company will need to sell more equity in the near future to fund its growth. Therefore, management wants to do everything possible to maximize stock price, including making the right dividend decision.

This morning the chief engineer, Susan Mathematica, came into the meeting and professed to have the answer to the firm's problems. She said she's been taking a high-powered finance course at night, and that her instructor assured her that dividends don't matter to stock price. According to Susan, that's because investors are perfectly capable of tailoring their own income stream from any investment. Therefore, she suggests not paying any dividends and using the money for projects.

How would you respond to Susan's suggestion? Do you think she's missed part of her instructor's message? Is it possible that her suggestion is right, but for the wrong reason? What would you recommend that SuperTech do?

2. The Tanglefern Corporation has traditionally paid out 60% of its earnings in dividends. Recently some marvelous growth opportunities have arisen that involve only a little risk but require a lot of cash. Most of the executive team thinks the firm should do two things to raise the cash needed to take advantage of the opportunities. They want to (1) sell more stock and (2) suspend dividend payments for two to three years. The dividend suspension would be accompanied by an explanation to stockholders of what was going on. You're the company's CFO. Prepare a response to the others' suggestion. Do the two proposed actions taken together create a particular problem?
3. You're a bank officer considering making a loan to a small family-owned company. The firm's principal owner is a hard-working, conservative woman who has built up the company over a number of years. However, two of her grown children are now active in the company's management. They're both bright and hard working, but have a reputation for taking business risks as well as for extravagant living. You'd like to make the loan, but are concerned about a potential change in the character of the company. How might you make the loan and still protect your bank's investment?
4. Your pal, Fred Flinderbinder, came into class this morning grinning from ear to ear. It seems a stock in which he advised his parents to invest is doing fabulously well. Fred said the firm usually pays a dividend of \$2 a share, which is about 4% of its recent \$50 market price. Yesterday, however, his folks got a letter that said the cash dividend was being passed, but instead the firm was issuing a stock dividend of 1 share for every 10 owned. Fred calculates that's worth the equivalent of \$5 a share, two and a half times the normal cash dividend! Fred has told you all this knowing you're taking finance. He's asked you what you think, obviously expecting praise and approval. What would you say to Fred?
5. Blazingame Mill Works recently sold a tract of land it had owned for 30 years. All expenses and taxes have been paid, and the company has \$10 million sitting in the bank as a result of the sale. Because there aren't any pressing investment opportunities available, the board would like to distribute the money to shareholders. Most of the board members are high-income individuals and major stockholders themselves. Discuss the company's options for disposing of the money.

## PROBLEMS

1. Richard Ingram just bought 1,000 shares of Sisson Electronics at \$40 per share. He plans to hold the stock for one year before selling. Sisson is in the process of selecting a new dividend policy. The firm will either pay out all of its earnings in dividends or retain and reinvest them all. Analysts expect the stock to be worth \$45 in one year's time if no dividends are paid and \$40 if dividends of \$5 per share are distributed. How much difference will Sisson's decision make in Richard's after-tax income? Assume Richard is in the 25% bracket. (See the discussion of capital gains tax on pages 43–44.)

2. The Argo Pamphlet Company's dividend payout ratio is 35%. It is currently paying an annual dividend of \$1.30.
  - a. What is Argo's EPS?
  - b. What is the market price of Argo's stock if its P/E ratio is 14?
  - c. How much current income per share will stockholders lose if Argo cuts its payout ratio to 20% and nothing else changes?
  - d. If the change in payout ratio does not affect the stock's price, approximately how many shares would a stockholder who owns 1,000 shares have to sell to make up her loss in current income? Ignore tax effects and transaction costs.
3. Randal Flapjack is a retired short-order cook living on a fixed income in the state of Utopia, where all financial markets are perfectly efficient. Randal has 20,000 shares of the Sugarcooky Corp., which pays an annualized dividend of \$1 per share. Sugarcooky sells at a P/E of 10, has maintained a payout ratio of 50% for many years, and has not grown in some time. Management has recently announced that it will reduce Sugarcooky's payout ratio to 25% but expects earnings to grow at 5% from now on.
  - a. What is Sugarcooky's current price?
  - b. How much current income is Randal losing as a result of management's action?
  - c. If Randal keeps his money in Sugarcooky but needs to maintain his current income, how many shares will he have to sell in the first year?
  - d. What will be the value of his remaining shares at the end of a year if the P/E remains the same? Is his investment still growing? Why?
4. Biltmore Industries has grown at an average of 6% per year over its long history. Its stock price is currently \$40.00, and its most recent dividend was \$2.50. Biltmore just announced that it plans to discontinue dividends for several years to take advantage of some growth opportunities. Analysts expect the stock price to increase by 10% per year for at least the next two years because of this growth. Elmer Bartlett owns 4,000 shares of Biltmore and has counted on their dividend payments to supplement his retirement income. Now it appears that he will have to start selling off his Biltmore stock to replace this lost income. How many shares of stock will Elmer have to sell in each of the next two years to replace his lost dividend income? Ignore taxes and transaction costs.
5. The Holderall Rope and Yarn Co. has 2 million common shares outstanding. Its capital structure is two-thirds equity. The firm expects earnings of \$10 million next year and anticipates capital spending of \$12 million on projects. Assume the projects will be funded with money raised in the debt/equity proportions of the existing capital structure. How much will the per-share dividend be next year if the firm adheres to a residual dividend policy?
6. The Montauk Company has a dividend reinvestment plan in which shareholders owning 25% of its common stock participate. Last year the firm's EPS was \$4.20, and its payout ratio was 50%. There are 2 million shares of common stock outstanding. How much new capital did Montauk raise through the reinvestment program?
7. Segwick Petroleum Ltd. has a dividend reinvestment plan in which new stock is issued to participating investors. Segwick's payout ratio is 40%, and 30% of stockholders participate in the plan. The firm's ROE is 10%. What percentage increase in flotation-cost-free equity capital does the plan provide?

8. Harrison Hardware anticipates \$2 million in net income next year and a 20% participation in the firm's dividend reinvestment plan. Management expects to spend \$2.375 million on new capital projects, and maintain the current capital structure which is 64% equity without issuing new stock. What dividend payout ratio has Harrison included in its plan for next year?
9. You own 1,000 shares of Jennings Corp. stock which is currently selling for \$88. Calculate the number of shares you would own and the stock's market price after each of the following stock splits.
  - a. A two-for-one stock split
  - b. A three-for-one stock split
  - c. A three-for-two stock split
  - d. A three-for-four reverse stock split
  - e. A five-for-three stock split
10. The Addington Book Company has the following equity position. The stock is currently selling for \$3 per share.

Common stock (8 million shares outstanding, \$2 par) .....	\$16,000,000
Paid in excess .....	4,000,000
Retained earnings.....	<u>12,000,000</u>
Total common equity .....	\$32,000,000
Book value per share.....	\$ 4.00

- a. What was the average price at which the company originally sold its stock?
  - b. Reconstruct the equity statement above to reflect a four-for-one stock split.
  - c. Reconstruct the statement to reflect a 12.5% stock dividend.
11. Seinway Corp just declared a 10% stock dividend. Before the dividend the stock sold for \$34 per share and the equity section of the firm's balance sheet was as follows:

Common stock (10,000,000 shares, \$.50 par)	\$ 5,000,000
Paid in excess	56,000,000
Retained earnings	<u>87,500,000</u>
Total	\$148,500,000

Restate the equity accounts and estimate the stock's price after the dividend.

12. Wysoski Enterprises is considering a stock dividend. The firm's capital includes 3 million shares of \$1 par value stock issued at an average price of \$8. Retained earnings total \$20 million. State the equity accounts now and after each of the following possible stock dividends.
  - a. Wysoski declared a 5% stock dividend, and the current price of the stock is \$15.
  - b. Wysoski declared a 10% stock dividend, and the current price of the stock is \$20.
  - c. Wysoski declared a 15% stock dividend, and the current price of the stock is \$23.
13. The Alligator Lock Company is planning a two-for-one stock split. You own 5,000 shares of Alligator's common stock, which is currently selling for \$120 a share.
  - a. What is the total value of your Alligator stock now, and what will it be after the split?
  - b. Alligator's CFO says that the value of the shares will decline less than proportionately with the split because the stock is now out of its trading range. If the decline is 45%, how much will the split make you?

14. The Featherstone Corp. has \$8 million in cash for its next dividend but is considering a repurchase instead. Featherstone has 10 million shares outstanding, currently selling at \$40 per share. The P/E is 20 on EPS of \$2.
  - a. If the dividend is paid, how large will it be per share?
  - b. If stock is repurchased, how many shares will remain outstanding, and what will the new EPS be?
  - c. If the P/E holds at 20, what will be the new stock price, and how much per share will continuing stockholders have gained? How does that compare with the dividend that could have been paid?
  - d. Are there other considerations (words only)?
15. Parnell Bolts Inc. has 20 million common shares outstanding and net income of \$30 million. The stock sells at a P/E of 15. The company has \$5 million available to pay the next quarterly dividend, but is considering a repurchase instead.
  - a. If Parnell pays the cash dividend, what will be its dividend yield on an annualized basis?
  - b. How many shares will be redeemed if the repurchase option is chosen and the stock is acquired at market value?
  - c. What will be the EPS after the repurchase if earnings remain unchanged?
  - d. What will be the new stock price if the P/E remains unchanged?
16. Tydek Inc. just lost a major lawsuit and its stock price dropped by 40% to \$6. There are 3.5 million shares outstanding which are currently selling at their book value of \$10. The company has \$5 million in cash readily available. The CFO feels the decline in price is temporary and the firm's stock is an excellent investment at this time. If Tydek spends the entire \$5 million on its own stock and the market-to-book-value ratio returns to its former level, how much more will each remaining share be worth than it was before the temporary price decline?
17. The stock market is generally depressed, and the price of Westin Metals Inc.'s common shares has been below its historic average value for some time. The shares are trading at \$35 which represents a P/E of 19 on earnings of \$7,000,000. Before the current slump, Westin generally maintained a P/E of at least 24. Despite the general downturn, the firm is doing well, and the CFO is considering an equity repurchase to enhance the position of stockholders who retain their shares when the market recovers. She has identified a piece of real estate the company owns but isn't using, which was purchased 20 years ago for \$2,000,000 and can be sold for \$9,000,000 today. Using the proceeds of such a sale would make it possible to do the repurchase without impacting dividends or the capital budget. The CFO has asked you to quantify the effect of her plan on stock price, and make a recommendation as to whether she should present it to the Board of Directors. Assume it takes two years for the market to recover and that Westin's P/E returns to 24 at that time. Also assume earnings grow at 5% per year until then and the company's marginal tax rate is 37%. Round any number of shares calculations to the nearest 1,000 shares.

**INTERNET PROBLEM**

18. An excellent source of information on recent dividends is available at: [www.ex-dividend.com](http://www.ex-dividend.com). Select free services for access to the latest dividend news, as well as

lists of companies that have recently increased or decreased their dividends. Scan dividend news, increases and then decreases counting the number of companies on each list. Compare the number announcing dividends with the number increasing and the number decreasing their payouts. Write a short paragraph reconciling the result of your counts with what we've said about the signaling effect of dividends. Have you seen any of the firms decreasing dividends in the news lately? If so, what's been going on?