7 Equity Markets and Stock Valuation

When the stock market closed on June 15, 2018, the common stock of biopharmaceutical company Gilead Sciences was selling for $70.23 per share. On that same day, well-known credit rating provider TransUnion closed at $71.16 per share, while oil and natural gas company PrimeEnergy closed at $70.00. Because the stock prices of these three companies were so similar, you might expect they would be offering similar dividends to their stockholders, but you would be wrong. In fact, Gilead Science's annual dividend was $2.28 per share, TransUnion's was $.30 per share, and PrimeEnergy was paying no dividend at all!

As we will see in this chapter, the dividends currently being paid are one of the primary factors we look at when we attempt to value common stocks. However, it is obvious from looking at PrimeEnergy that current dividends are not the end of the story, so this chapter explores dividends, stock values, and the connection between the two.

LEARNING OBJECTIVES

After studying this chapter, you should be able to:

- **LO 1** Assess how stock prices depend on future dividends and dividend growth.
- **LO 2** Identify the different ways corporate directors are elected to office.
- **LO 3** Explain how the stock markets work.

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Going back to Chapter 1, we see that the goal of financial management is to maximize stock prices, so an understanding of what determines share values is obviously a key concern. When a corporation has publicly held stock, its shares often will be bought and sold on one or more of the major stock exchanges, so we will examine how stocks are traded. We also will see that the shareholders in a corporation have certain rights, and that how these rights are allocated can have a significant impact on corporate control and governance.

LO 1 Assess how stock prices depend on future dividends and dividend growth.

LO 2 Identify the different ways corporate directors are elected to office.

LO 3 Explain how the stock markets work.

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In our previous chapter, we introduced you to bonds and bond valuation. In this chapter, we turn to the other major source of financing for corporations, common and preferred stock. We first describe the cash flows associated with a share of stock and then go on to develop a very famous result, the dividend growth model. From there, we move on to examine various important features of common and preferred stock, focusing on shareholder rights. We close out the chapter with a discussion of how shares of stock are traded and how stock prices and other important information are reported in the financial press.

7.1 COMMON STOCK VALUATION

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A share of common stock is more difficult to value in practice than a bond, for at least three reasons. First, with common stock, not even the promised cash flows are known in advance. Second, the life of the investment is essentially forever because common stock has no maturity. Third, there is no way to easily observe the rate of return that the market requires. Nonetheless, as we will see, there are cases in which we can come up with the present value of the future cash flows for a share of stock and thus determine its value.

Cash Flows

Imagine that you are considering buying a share of stock today. You plan to sell the stock in one year. You somehow know that the stock will be worth $70 at that time. You predict that the stock also will pay a $10 per share dividend at the end of the year. If you require a 25 percent return on your investment, what is the most you would pay for the stock? In other words, what is the present value of the $10 dividend along with the $70 ending value at 25 percent?

If you buy the stock today and sell it at the end of the year, you will have a total of $80

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If you buy the stock today and sell it at the end of the year, you will have a total of $80 in cash. At 25 percent:

$$\text{Present value} = (\$10 + 70)/1.25 = \$64$$

Therefore, $64 is the value you would assign to the stock today.

More generally, let P_0 be the current price of the stock, and assign P_1 to be the price in one period. If D_1 is the cash dividend paid at the end of the period, then:

$$P_0 = (D_1 + P_1)/(1 + R) \quad [7.1]$$

where R is the required return in the market on this investment.

Notice that we really haven't said much so far. If we wanted to determine the value of a share of stock today (P_0), we would first have to come up with the value in one year (P_1). This is even harder to do, so we've only made the problem more complicated.

What is the price in one period, P_1? We don't know in general. Instead, suppose we somehow knew the price in two periods, P_2. Given a predicted dividend in two periods, D_2, the stock price in one period would be:

$$P_1 = (D_2 + P_2)/(1 + R)$$

If we were to substitute this expression for P_1 into our expression for P_0, we would have:

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If we were to substitute this expression for P_1 into our expression for P_0, we would have:

$$P_0 = \frac{D_1 + P_1}{1+R} = \frac{D_1 + \frac{D_2 + P_2}{1+R}}{1+R}$$

$$= \frac{D_1}{(1+R)^1} + \frac{D_2}{(1+R)^2} + \frac{P_2}{(1+R)^2}$$

Now we need to get a price in two periods. We don't know this either, so we can procrastinate again and write:

$$P_2 = (D_3 + P_3)/(1 + R)$$

If we substitute this back in for P_2, we have:

$$P_0 = \frac{D_1}{(1+R)^1} + \frac{D_2}{(1+R)^2} + \frac{P_2}{(1+R)^2}$$

$$= \frac{D_1}{(1+R)^1} + \frac{D_2}{(1+R)^2} + \frac{\frac{D_3+P_3}{1+R}}{(1+R)^2}$$

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You should start to notice that we can push the problem of coming up with the stock price off into the future forever. It is important to note that no matter what the stock price is, the present value is essentially zero if we push the sale of the stock far enough away. What we are eventually left with is the result that the current price of the stock can be written as the present value of the dividends beginning in one period and extending out forever:

$$P_0 = \frac{D_1}{(1+R)^1} + \frac{D_2}{(1+R)^2} + \frac{D_3}{(1+R)^3} + \frac{D_4}{(1+R)^4} + \frac{D_5}{(1+R)^5} + \cdots$$

We have illustrated here that the price of the stock today is equal to the present value of all of the future dividends. How many future dividends are there? In principle, there can

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We have illustrated here that the price of the stock today is equal to the present value of all of the future dividends. How many future dividends are there? In principle, there can be an infinite number. This means that we still can't compute a value for the stock because we would have to forecast an infinite number of dividends and then discount them all. In the next section, we consider some special cases in which we can get around this problem.

EXAMPLE 7.1 **Growth Stocks**

You might be wondering about shares of stock in companies such as eBay that currently pay no dividends. Small, growing companies frequently plow back everything and thus pay no dividends. Are such shares worth nothing? It depends. When we say that the value of the stock is equal to the present value of the future dividends, we don't rule out the possibility that some number of those dividends are zero. They just can't *all* be zero.

Imagine a company that has a provision in its corporate charter that prohibits the paying of dividends now or ever. The corporation never borrows any money, never pays out any money to stockholders in any form whatsoever, and never sells any assets. Such a corporation couldn't really exist because the IRS wouldn't like it, and the stockholders could always vote to amend the charter if they wanted to. If it did exist, however, what would the stock be worth?

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The stock would be worth absolutely nothing. Such a company is a financial "black hole." Money goes in, but nothing valuable ever comes out. Because nobody would ever get any return on this investment, the investment has no value. This example is a little absurd, but it illustrates that when we speak of companies that don't pay dividends, what we really mean is that they are not *currently* paying dividends.

Some Special Cases

There are a few very useful special circumstances under which we can come up with a value for the stock. What we have to do is make some simplifying assumptions about the pattern of future dividends. The cases we consider are the following: (*1*) the dividend has a zero growth rate, (2) the dividend grows at a constant rate, and (*3*) the dividend grows at a non-constant rate. Finally, we examine stock pricing using comparables.

Zero Growth The case of zero growth is one we've already seen. A share of common stock in a company with a constant dividend is much like a share of preferred stock. From Chapter 5 (Example 5.7), we know that the dividend on a share of preferred stock has zero growth and thus is constant through time. For a zero-growth share of common stock, this implies that:

$$D_1 = D_2 = D_3 = D = \text{constant}$$

So, the value of the stock is:

$$P_0 = \frac{D}{(1+R)^1} + \frac{D}{(1+R)^2} + \frac{D}{(1+R)^3} + \frac{D}{(1+R)^4} + \frac{D}{(1+R)^5} + \cdots$$

Because the dividend is always the same, the stock can be viewed as an ordinary perpetuity with a cash flow equal to D every period. The per-share value is thus given by:

$$P_0 = D/R \qquad [7.2]$$

where R is the required return.

For example, suppose the Paradise Prototyping Company has a policy of paying a $10 per-share dividend every year. If this policy is to be continued indefinitely, what is the value of a share of stock if the required return is 20 percent? The stock in this case amounts to an ordinary perpetuity, so the stock is worth $10/.20 = $50 per share.

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Constant Growth Suppose we know that the dividend for some company always grows at a steady rate. Call this growth rate g. If we let D_0 be the dividend just paid, then the next dividend, D_1, is:

$$D_1 = D_0 \times (1 + g)$$

The dividend in two periods is:

$$\begin{aligned} D_2 &= D_1 \times (1 + g) \\ &= [D_0 \times (1 + g)] \times (1 + g) \\ &= D_0 \times (1 + g)^2 \end{aligned}$$

We could repeat this process to come up with the dividend at any point in the future. In general, from our discussion of compound growth in Chapter 4, we know that the dividend t periods into the future, D_t, is given by:

$$D_t = D_0 \times (1 + g)^t$$

An asset with cash flows that grow at a constant rate forever is called a *growing perpetuity*. As we will see momentarily, there is a simple expression for determining the value of such an asset.

The assumption of steady dividend growth might strike you as peculiar. Why would the dividend grow at a constant rate? The reason is that, for many companies, steady growth in dividends is an explicit goal. This subject falls under the general heading of dividend policy, so we defer further discussion of it to a later chapter.

EXAMPLE 7.2 Dividend Growth

The Hedless Corporation has just paid a dividend of $3 per share. The dividend of this company grows at a steady rate of 8 percent per year. Based on this information, what will the dividend be in five years?

Here we have a $3 current amount that grows at 8 percent per year for five years. The future amount is thus:

$$\$3 \times 1.08^5 = \$3 \times 1.4693 = \$4.41$$

The dividend, therefore, will increase by $4.41 − 3 = $1.41 over the coming five years.

If the dividend grows at a steady rate, then we have replaced the problem of forecasting an infinite number of future dividends with the problem of coming up with a single growth rate, a considerable simplification. In this case, if we take D_0 to be the dividend just paid and g to be the constant growth rate, the value of a share of stock can be written as:

$$P_0 = \frac{D_1}{(1+R)^1} + \frac{D_2}{(1+R)^2} + \frac{D_3}{(1+R)^3} + \cdots$$

$$= \frac{D_0(1+g)^1}{(1+R)^1} + \frac{D_0(1+g)^2}{(1+R)^2} + \frac{D_0(1+g)^3}{(1+R)^3} + \cdots$$

As long as the growth rate, g, is less than the discount rate, R, the present value of this series of cash flows can be written as:

$$P_0 = \frac{D_0 \times (1+g)}{R-g} = \frac{D_1}{R-g} \qquad [7.3]$$

This elegant result goes by a lot of different names. We will call it the **dividend growth model**. By any name, it is very easy to use. To illustrate, suppose D_0 is $2.30, R is 13 percent, and g is 5 percent. The price per share in this case is:

dividend growth model
A model that determines the current price of a

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dividend growth model
A model that determines the current price of a stock as its dividend next period divided by the discount rate less the dividend growth rate.

$$\begin{aligned} P_0 &= D_0 \times (1+g)/(R-g) \\ &= \$2.30 \times 1.05/(.13-.05) \\ &= \$2.415/.08 \\ &= \$30.19 \end{aligned}$$

We can actually use the dividend growth model to get the stock price at any point in time, not just today. In general, the price of the stock as of Time *t* is:

$$P_t = \frac{D_t \times (1+g)}{R-g} = \frac{D_{t+1}}{R-g} \qquad [7.4]$$

In our example, suppose we are interested in the price of the stock in five years, P_5. We first need the dividend at Time 5, D_5. Because the dividend just paid is \$2.30 and the growth rate is 5 percent per year, D_5 is:

$$D_5 = \$2.30 \times 1.05^5 = \$2.30 \times 1.2763 = \$2.935$$

From the dividend growth model, we get that the price of the stock in five years is:

$$P_5 = \frac{D_5 \times (1+g)}{R-g} = \frac{\$2.935 \times 1.05}{.13-.05} = \frac{\$3.0822}{.08} = \$38.53$$

EXAMPLE 7.3 **Gordon Growth Company**

The next dividend for the Gordon Growth Company will be \$4 per share. Investors require a 16 percent return on companies such as Gordon. Gordon's dividend increases by 6 percent every year. Based on the dividend growth model, what is the value of Gordon's stock today? What is the value in four years?

The only tricky thing here is that the next dividend, D_1, is given as \$4, so we won't multiply this by $(1 + g)$. With this in mind, the price per share is given by:

$$
\begin{aligned}
P_0 &= D_1/(R - g) \\
&= \$4/(.16 - .06) \\
&= \$4/.10 \\
&= \$40
\end{aligned}
$$

Because we already have the dividend in one year, we know that the dividend in four years is equal to $D_1 \times (1 + g)^3 = \$4 \times 1.06^3 = \$4.764$. The price in four years is therefore:

$$
\begin{aligned}
P_4 &= D_4 \times (1 + g)/(R - g) \\
&= \$4.764 \times 1.06/(.16 - .06) \\
&= \$5.05/.10 \\
&= \$50.50
\end{aligned}
$$

Notice in this example that P_4 is equal to $P_0 \times (1 + g)^4$:

$$P_4 = \$50.50 = \$40 \times 1.06^4 = P_0 \times (1 + g)^4$$

To see why this is so, notice first that:

$$P_4 = D_5/(R - g)$$

However, D_5 is equal to $D_1 \times (1 + g)^4$, so we can write P_4 as:

$$P_4 = D_1 \times (1 + g)^4/(R - g)$$

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However, D_5 is equal to $D_1 \times (1 + g)^4$, so we can write P_4 as:

$$\begin{aligned} P_4 &= D_1 \times (1 + g)^4/(R - g) \\ &= [D_1/(R - g)] \times (1 + g)^4 \\ &= P_0 \times (1 + g)^4 \end{aligned}$$

This last example illustrates that the dividend growth model makes the implicit assumption that the stock price will grow at the same constant rate as the dividend. This really isn't too surprising. What it tells us is that if the cash flows on an investment grow at a constant rate through time, so does the value of that investment.

You might wonder what would happen with the dividend growth model if the growth rate, g, were greater than the discount rate, R. It looks like we would get a negative stock price because $R - g$ would be less than zero. This is not what would happen.

Instead, if the constant growth rate exceeds the discount rate, then the stock price is infinitely large. Why? If the growth rate is bigger than the discount rate, then the present value of the dividends keeps on getting bigger and bigger. Essentially, the same is true if the growth rate and the discount rate are equal. In both cases, the simplification that allows us to replace the infinite stream of dividends with the dividend growth model is "illegal," so the answers we get from the dividend growth model are nonsense unless the growth rate is less than the discount rate.

Finally, the expression we came up with for the constant growth case will work for any growing perpetuity, not just dividends on common stock. If C_1 is the next cash flow on a growing perpetuity, then the present value of the cash flows is given by:

$$\text{Present value} = C_1/(R - g) = C_0(1 + g)/(R - g)$$

Notice that this expression looks like the result for an ordinary perpetuity except that we have $R - g$ on the bottom instead of only R.

Nonconstant Growth The last case we consider is nonconstant growth. The main reason to consider this case is to allow for "supernormal" growth rates over some finite length of time. As we discussed earlier, the growth rate cannot exceed the required return indefinitely, but it certainly could do so for some number of years. To avoid the problem of having to forecast and discount an infinite number of dividends, we will require that the dividends start growing at a constant rate sometime in the future.

For a simple example of nonconstant growth, consider the case of a company that is currently not paying dividends. You predict that, in five years, the company will pay a dividend for the first time. The dividend will be \$.50 per share. You expect that this dividend will then grow at a rate of 10 percent per year indefinitely. The required return on companies such as this one is 20 percent. What is the price of the stock today?

To see what the stock is worth today, we first find out what it will be worth once dividends are paid. We can then calculate the present value of that future price to get today's price. The first dividend will be paid in five years, and the dividend will grow steadily from then on. Using the dividend growth model, we can say that the price in four years will be:

$$
\begin{aligned}
P_4 &= D_4 \times (1 + g)/(R - g) \\
&= D_5/(R - g) \\
&= \$.50/(.20 - .10) \\
&= \$5
\end{aligned}
$$

If the stock will be worth \$5 in four years, then we can get the current value by discounting this price back four years at 20 percent:

$= D_5/(R - g)$
$= \$.50/(.20 - .10)$
$= \$5$

If the stock will be worth $5 in four years, then we can get the current value by discounting this price back four years at 20 percent:

$$P_0 = \$5/1.20^4 = \$5/2.0736 = \$2.41$$

The stock is therefore worth $2.41 today.

The problem of nonconstant growth is only slightly more complicated if the dividends are not zero for the first several years. Suppose that you have come up with the following dividend forecasts for the next three years:

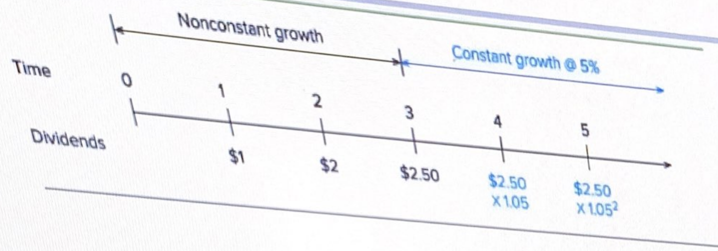
Year	Expected Dividend
1	$1.00
2	$2.00
3	$2.50

After the third year, the dividend will grow at a constant rate of 5 percent per year. The required return is 10 percent. What is the value of the stock today?

In dealing with nonconstant growth, a time line can be very helpful. Figure 7.1 illustrates one for this problem. The important thing to notice is when constant growth starts. As we've shown, for this problem, constant growth starts at Time 3. This means that we can use our constant growth model to determine the stock price at Time 3, P_3. By far the most common mistake in this situation is to incorrectly identify the start of the constant growth phase and, as a result, calculate the future stock price at the wrong time.

FIGURE 7.1

Nonconstant growth



As always, the value of the stock is the present value of all the future dividends. To calculate this present value, we first have to compute the present value of the stock price three years down the road, as we did before. We then have to add in the present value of the dividends that will be paid between now and then. So, the price in three years is:

$$P_3 = D_3 \times (1 + g)/(R - g)$$
$$= \$2.50 \times 1.05/(.10 - .05)$$
$$= \$52.50$$

We can now calculate the total value of the stock as the present value of the first three dividends plus the present value of the price at Time 3, P_3:

$$P_0 = \frac{D_1}{(1+R)^1} + \frac{D_2}{(1+R)^2} + \frac{D_3}{(1+R)^3} + \frac{P_3}{(1+R)^3}$$
$$= \frac{\$1}{1.10} + \frac{2}{1.10^2} + \frac{2.50}{1.10^3} + \frac{52.50}{1.10^3}$$
$$= \$.91 + 1.65 + 1.88 + 39.44$$
$$= \$43.88$$

The value of the stock today is thus $43.88.

$$P_0 = \frac{D_1}{(1+R)^1} + \frac{D_2}{(1+R)^2} + \frac{D_3}{(1+R)^3} + \frac{P_3}{(1+R)^3}$$

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$$= \$.91 + 1.65 + 1.88 + 39.44$$

$$= \$43.88$$

The value of the stock today is thus $43.88.

EXAMPLE 7.4 Supernormal Growth

Chain Reaction, Inc., has been growing at a phenomenal rate of 30 percent per year because of its rapid expansion and explosive sales. You believe that this growth rate will last for three more years and that the rate will then drop to 10 percent per year. If the growth rate then remains at 10 percent indefinitely, what is the total value of the stock? Total dividends just paid were $5 million, and the required return is 20 percent.

Chain Reaction's situation is an example of supernormal growth. It is unlikely that a 30 percent growth rate can be sustained for any extended length of time. To value the equity in this company, we first need to calculate the total dividends over the supernormal growth period:

Year	Total Dividends (in millions)
1	$5.00 × 1.3 = $ 6.500
2	6.50 × 1.3 = 8.450
3	8.45 × 1.3 = 10.985

The price at Time 3 can be calculated as:

$$P_3 = D_3 \times (1 + g)/(R - g)$$

(continued)

where g is the long-run growth rate. So we have:

$P_3 = \$10.985 \times 1.10/(.20 - .10) = \$120.835$

To determine the value today, we need the present value of this amount plus the present value of the total dividends:

$$P_0 = \frac{D_1}{(1+R)^1} + \frac{D_2}{(1+R)^2} + \frac{D_3}{(1+R)^3} + \frac{P_3}{(1+R)^3}$$
$$= \frac{\$6.50}{1.20} + \frac{8.45}{1.20^2} + \frac{10.985}{1.20^3} + \frac{120.835}{1.20^3}$$
$$= \$5.42 + 5.87 + 6.36 + 69.93$$
$$= \$87.57$$

The total value of the stock today is thus \$87.57 million. If there were 20 million shares, then the stock would be worth \$87.57/20 = \$4.38 per share.

Components of the Required Return

Thus far, we have taken the required return, or discount rate, *R*, as given. We will have quite a bit to say on this subject in Chapters 10 and 11. For now, we want to examine the implications of the dividend growth model for this required return. Earlier, we calculated P_0 as:

$$P_0 = D_1/(R - g)$$

If we rearrange this to solve for *R*, we get:

$$R - g = D_1/P_0$$
$$R = D_1/P_0 + g \quad [7.5]$$

This tells us that the total return, *R*, has two components. The first of these, D_1/P_0, is called the **dividend yield**. Because this is calculated as the expected cash dividend divided by the current price, it is conceptually similar to the current yield on a bond.

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A stock's expected cash dividend divided by its

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dividend yield
A stock's expected cash dividend divided by its current price.

The second part of the total return is the growth rate, g. We know that the dividend growth rate is also the rate at which the stock price grows (see Example 7.3). Thus, this growth rate can be interpreted as the **capital gains yield**, that is, the rate at which the value of the investment grows.[1]

capital gains yield
The dividend growth rate, or the rate at which the value of an investment grows.

To illustrate the components of the required return, suppose we observe a stock selling for \$20 per share. The next dividend will be \$1 per share. You think that the dividend will grow by 10 percent per year more or less indefinitely. What return does this stock offer you if this is correct?

The dividend growth model calculates the total return as:

$$R = \text{Dividend yield} + \text{Capital gains yield}$$
$$R = D_1/P_0 + g$$

In this case, the total return works out to be:

$$\begin{aligned} R &= \$1/\$20 + .10 \\ &= .05 + .10 \\ &= .15, \text{ or } 15\% \end{aligned}$$

This stock, therefore, has a required return of 15 percent.

[1]Here and elsewhere, we use the term *capital gains* a little loosely. For the record, a capital gain (or loss) is, strictly speaking, something defined by the IRS. For our purposes, it would be more accurate (but less common) to use the term *price appreciation* instead of *capital gain*.

We can verify this answer by calculating the price in one year, P_1, using 15 percent as the required return. Based on the dividend growth model, this price is:

$$\begin{aligned} P_1 &= D_1 \times (1 + g)/(R - g) \\ &= \$1 \times 1.10/(.15 - .10) \\ &= \$1.10/.05 \\ &= \$22 \end{aligned}$$

Notice that this \$22 is \$20 × 1.1, so the stock price has grown by 10 percent, as it should. If you pay \$20 for the stock today, you will get a \$1 dividend at the end of the year, and you will have a \$22 − 20 = \$2 gain. Your dividend yield is thus \$1/\$20 = .05, or 5 percent. Your capital gains yield is \$2/\$20 = .10, or 10 percent, so your total return would be 5% + 10% = 15%.

To get a feel for actual numbers in this context, consider that, according to the 2018 Value Line *Investment Survey*, The Hershey Company's dividends were expected to grow by 5.5 percent over the next 5 or so years, compared to a historical growth rate of 9 percent over the preceding 10 years. In 2018, the projected dividend for the coming year was given as \$2.85. The stock price at that time was about \$94 per share. What is the return investors require on Hershey? Here, the dividend yield is about 3 percent and the capital gains yield is 5.5 percent, giving a total required return of 8.5 percent on Hershey stock.

Stock Valuation Using Comparables, or Comps

An obvious problem with our dividend-based approach to stock valuation is that many companies don't pay dividends. What do we do in such cases? A common approach is to make use of the PE ratio, which we defined in Chapter 3 as the ratio of a stock's price per share to its earnings per share (EPS) over the previous year. The idea here is to have some sort of benchmark or reference PE ratio, which we then multiply by earnings to come up with a

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$$\text{Price at Time } t = P_t = \text{Benchmark PE ratio} \times \text{EPS}_t \qquad [7.6]$$

The benchmark PE ratio could come from one of several possible sources. It could be based on similar companies (perhaps an industry average or median), or it could be based on a company's own historical values. Suppose we are trying to value Inactivision, Inc., a video game developer known for its hit *Slack Ops* series. Inactivision does not pay dividends, but after studying the industry, you feel that a PE ratio of 20 is appropriate for a company like this one. Total earnings over the four most recent quarters combined are $2 per share, so you think the stock should sell for 20 × $2 = $40. You might view it as an attractive purchase if it is going for less than $40, but not attractive if it sells for more than $40.

Security analysts spend a lot of time forecasting future earnings, particularly for the coming year. A PE ratio that is based on estimated future earnings is called a *forward* PE ratio. Suppose you felt that Inactivision's earnings for the coming year were going to be $2.50, reflecting the growing popularity of the company's *World of Slackcraft* massively multiplayer online role-playing game (MMORPG). In this case, if the current stock price is $40, the forward PE ratio is $40/$2.50 = 16.

Finally, notice that your benchmark PE of 20 applies to earnings over the previous year. If earnings over the coming year turn out to be $2.50, then the stock price one year from today should be 20 × $2.50 = $50. Forecast prices such as this one often are called *target* prices.

Often we will be interested in valuing newer companies that both don't pay dividends and are not yet profitable, meaning that earnings are negative. What do we do then? One answer is to use the price-sales ratio, which we also introduced in Chapter 3. As the name suggests, this

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where D_1/P_0 is the *dividend yield* and *g* is the *capital gains yield* (which is the same thing as the growth rate in dividends for the steady growth case).

V. **Valuation Using Comparables**
For stocks that don't pay dividends (or have erratic dividend growth rates), we can value them using the PE ratio and/or the price-sales ratio:

P_t = Benchmark PE ratio × EPS_t
P_t = Benchmark price–sales ratio × Sales per $share_t$

ratio is the price per share on the stock divided by sales per share. You use this ratio like you use the PE ratio, except you use sales per share instead of earnings per share. As with PE ratios, price-sales ratios vary depending on company age and industry. Typical values are in the .8–2.0 range, but they can be much higher for younger, faster-growing companies.

For future reference, our discussion of stock valuation techniques is summarized in Table 7.1.

CONCEPT QUESTIONS

7.1a What are the relevant cash flows for valuing a share of common stock?

7.1b Does the value of a share of stock depend on how long you expect to keep it?

7.1c What is the value of a share of stock when the dividend grows at a constant rate?

7.1d What is a "target price" on a stock? How is it determined?

7.2 SOME FEATURES OF COMMON AND PREFERRED STOCK

In discussing common stock features, we focus on shareholder rights and dividend payments. For preferred stock, we explain what "preferred" means, and we also debate whether preferred stock is really debt or equity.

Common Stock Features

common stock
Equity without priority for dividends or in bankruptcy.

The term **common stock** means different things to different people, but it is usually applied to stock that has no special preference either in paying dividends or in bankruptcy.

Shareholder Rights The conceptual structure of the corporation assumes that shareholders elect directors who, in turn, hire management to carry out their directives. Shareholders, therefore, control the corporation through the right to elect the directors. Generally, only shareholders have this right.

Directors are elected each year at an annual meeting. Although there are exceptions (discussed in a moment), the general idea is "one share, one vote" (*not* one share*holder*, one vote). Corporate democracy is thus very different from our political democracy. With corporate democracy, the "golden rule" prevails absolutely.[2]

Directors are elected at an annual shareholders' meeting by a vote of the holders of a majority of shares who are present and entitled to vote. However, the exact mechanism for electing directors differs across companies. The most important difference is whether shares must be voted cumulatively or voted straight.

To illustrate the two different voting procedures, imagine that a corporation has two shareholders: Smith with 20 shares and Jones with 80 shares. Both want to be a director. Jones does not want Smith, however. We assume that there are a total of four directors to be elected.

cumulative voting
A procedure in which a

The effect of **cumulative voting** is to permit minority participation.[3] If cumulative voting is permitted, the total number of votes that each shareholder may cast is determined

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