

## Illustration 1.2 What Is the Value of a Firm?

The discussion of the value of a firm may have seemed a bit abstract, more suited for discussions in economic theory than for the use of sophisticated investors. Not so, as a “Smart Money” column in *Business Week* illustrates. The column began by noting that investment analysts use a vast collection of tools to select stocks and one of their handier devices is the dividend discount model, or DDM: “The DDM works on the premise that an investment is worth the present value of its future cash flows. So to value a stock, you’ll need the current annual dividend, a projected growth rate, and a ‘discount rate.’”

The *Business Week* column used Exxon to illustrate the necessary calculation. At the time, the annual dividend was \$2.20, which can be obtained from a newspaper. Exxon was expected to grow at a 7 percent annual rate, according to Value Line Investment Survey. This information could also be obtained from a broker. To calculate the discount rate, the column used the current rate on long-term government bonds, at the time about 9.2 percent. The column suggested adding an equity risk premium to compensate for the added risk of owning stocks. The premium was said to range between 2 and 5 percent, depending on the riskiness of the stock. For a blue chip such as Exxon, the column’s author suggested about 3 percent, yielding a 12.2 percent discount factor.

To calculate the effective discount rate, subtract the 7 percent growth rate of the Exxon dividend from the discount rate of 12.2 percent to obtain 5.2 percent. Then convert 5.2 percent into decimal form (0.052) and divide the decimal value into the \$2.20 dividend to obtain a present value of \$42.30. The column pointed out that Exxon stock at the time was selling for \$46 and, therefore, by this measure was overpriced. But the model is sensitive to the estimated values of discount and growth rates used in the calculation. A small change in the discount or growth rate produces a big difference in the present value of Exxon stock. The DDM allows investors to ask “what-if” questions. For example, as the column’s author pointed out, “If you think interest rates will fall, lower your discount rate by, say, a percentage point. That would value Exxon at \$52, signaling a buy.” Or, he went on to say, “if the discount rate is raised a point, that would value Exxon at \$35, indicating you should wait for the price to fall.”

According to the author, some pros recast the DDM by dividing the dividend by the stock price to get the current yield. Then they add the growth rate to get the stock’s implied rate of return. (It was 11.8 percent for Exxon at the time.) The implied rates of return for several stocks can then be ranked by potential return, and only the growth rate must be estimated.

Before you plunge deeply into the market, we must warn you that the column pointed out that the DDM has limitations: “It works best on slow growing, mature companies that are consistent dividend payers.” The model doesn’t work well on

high-flying biotech stocks, and it may make asset-rich stocks appear overpriced when takeover artists are willing to pay much more.

**Source:** Jeffrey Laderman, "Smart Money: Fast Figuring for Stock Handicappers," *Business Week*, Aug. 1, 1988, p. 103.