

**(6-15)**  
**Evaluating Risk  
and Return**

Start with the partial model in the file *Ch06 P15 Build a Model.xlsx* on the textbook's Web site. The file contains hypothetical data for working this problem. Goodman Corporation's and Landry Incorporated's stock prices and dividends, along with the Market Index, are shown here. Stock prices are reported for December 31 of each year, and dividends reflect those paid during the year. The market data are adjusted to include dividends.

Source

Year	Goodman Corporation		Landry Incorporated		Market Index
	Stock Price	Dividend	Stock Price	Dividend	Includes Dividends
2016	\$25.88	\$1.73	\$73.13	\$4.50	17,495.97
2015	22.13	1.59	78.45	4.35	13,178.55
2014	24.75	1.50	73.13	4.13	13,019.97
2013	16.13	1.43	85.88	3.75	9,651.05
2012	17.06	1.35	90.00	3.38	8,403.42
2011	11.44	1.28	83.63	3.00	7,058.96

- a. Use the data given to calculate annual returns for Goodman, Landry, and the Market Index, and then calculate average annual returns for the two stocks and the index. (*Hint: Remember, returns are calculated by subtracting the beginning price from the ending price to get the capital gain or loss, adding the dividend to the capital gain or loss, and then dividing the result by the beginning price. Assume that dividends are already included in the index. Also, you cannot calculate the rate of return for 2011 because you do not have 2010 data.*)
- b. Calculate the standard deviations of the returns for Goodman, Landry, and the Market Index. (*Hint: Use the sample standard deviation formula given in the chapter, which corresponds to the **STDEV** function in *Excel*.*)
- c. Construct a scatter diagram graph that shows Goodman's returns on the vertical axis and the Market Index's returns on the horizontal axis. Construct a similar graph showing Landry's stock returns on the vertical axis.
- d. Estimate Goodman's and Landry's betas as the slopes of regression lines with stock return on the vertical axis (y-axis) and market return on the horizontal axis (x-axis). (*Hint: Use *Excel*'s **SLOPE** function.*) Are these betas consistent with your graph?
- e. The risk-free rate on long-term Treasury bonds is 6.04%. Assume that the market risk premium is 5%. What is the required return on the market? Now use the SML equation to calculate the two companies' required returns.
- f. If you formed a portfolio that consisted of 50% Goodman stock and 50% Landry stock, what would be its beta and its required return?
- g. Suppose an investor wants to include some Goodman Industries stock in his portfolio. Stocks A, B, and C are currently in the portfolio, and their betas are 0.769, 0.985, and 1.423, respectively. Calculate the new portfolio's required return if it consists of 25% Goodman, 15% Stock A, 40% Stock B, and 20% Stock C.