

### Information, Competition, and Stock Prices

30. You read in the paper that Summit Systems from Problem 6 has revised its growth prospects and now expects its dividends to grow at 3% per year forever.
  - a. What is the new value of a share of Summit Systems stock based on this information?
  - b. If you tried to sell your Summit Systems stock after reading this news, what price would you be likely to get and why?
31. In early 2018, Coca-Cola Company (KO) had a share price of \$44, and had paid a dividend of \$1.48 for the prior year. Suppose you expect Coca-Cola to raise this dividend by approximately 7% per year in perpetuity.
  - a. If Coca-Cola's equity cost of capital is 8%, what share price would you expect based on your estimate of the dividend growth rate?
  - b. Given Coca-Cola's share price, what would you conclude about your assessment of Coca-Cola's future dividend growth?
32. Roybus, Inc., a manufacturer of flash memory, just reported that its main production facility in Taiwan was destroyed in a fire. While the plant was fully insured, the loss of production will decrease Roybus's free cash flow by \$180 million at the end of this year and by \$60 million at the end of next year.
  - a. If Roybus has 35 million shares outstanding and a weighted average cost of capital of 13%, what change in Roybus's stock price would you expect upon this announcement? (Assume the value of Roybus's debt is not affected by the event.)
  - b. Would you expect to be able to sell Roybus's stock on hearing this announcement and make a profit? Explain.
33. Apnex, Inc., is a biotechnology firm that is about to announce the results of its clinical trials of a potential new cancer drug. If the trials were successful, Apnex stock will be worth \$70 per share. If the trials were unsuccessful, Apnex stock will be worth \$18 per share. Suppose that the morning before the announcement is scheduled, Apnex shares are trading for \$55 per share.
  - a. Based on the current share price, what sort of expectations do investors seem to have about the success of the trials?
  - b. Suppose hedge fund manager Paul Kliner has hired several prominent research scientists to examine the public data on the drug and make their own assessment of the drug's promise. Would Kliner's fund be likely to profit by trading the stock in the hours prior to the announcement?
  - c. What would limit the fund's ability to profit on its information?

## Data Case

As a new analyst for a large brokerage firm, you are anxious to demonstrate the skills you learned in your MBA program and prove that you are worth your attractive salary. Your first assignment is to analyze the stock of the Columbia Sportswear Corporation. Your boss recommends determining prices based on both the dividend-discount model and discounted free cash flow valuation methods. Columbia has no debt and an 8% equity cost of capital. You are ready for the challenge, but also are a little concerned because your finance professor told you that these two methods can result in widely differing estimates when applied to real data. You are really hoping that the two methods will reach similar prices.

1. Go to Morningstar ([www.morningstar.com](http://www.morningstar.com)) and enter the symbol for Columbia Sportswear (COLM). From the main page for COLM, record the current stock price (last trade) at the top of the page.
2. Next, click the "Dividends" tab (you might have to scroll right). From the Dividends tab, record the current annual dividend per share amount.

3. Next, click the “Financials” tab and then click on “Income Statement” below the summary data. (Be sure to select the “Restated” tab rather than “As Originally Reported.”) Using the “Export to Excel” tab, export the entire five years of (annual) income statements into a new worksheet in your existing Excel file. Repeat this process for both the balance sheet and cash flow statement for Columbia. Record the most recent total number of shares outstanding from the Income Statement and record it on your main worksheet.
4. Using the three financial statements, calculate the five-year historical average for Columbia’s Return on Equity ( $ROE = \text{Net income} / \text{Total stockholder's equity}$ ) and average dividend payout rate ( $\text{Dividend paid} / \text{Net income}$ ).
5. Determine the 5-year dividend growth rate using Eq. 9.12, Columbia’s retention rate ( $1 - \text{average payout rate}$ ), and expected return on new investments (use average ROE).
6. To determine the stock value based on the dividend-discount model:
  - a. Create a timeline in Excel for five years.
  - b. Forecast the next five annual dividends based on the current dividend amount (from 2) and the five-year growth rate (from 5, assuming the payout rate stays constant over the next 5 years).
  - c. Assume a long-term dividend growth rate of 3%.
  - d. Use the long-term growth rate to determine the stock price for year four using Eq. 9.13.
  - e. Determine the current stock price using Eq. 9.14.
  - f. Compare this to the actual stock price. What long-term dividend growth rate would you need to assume to match the current stock price?
7. To determine the stock value based on the discounted free cash flow method:
  - a. Forecast the free cash flows using the historic data from the financial statements to compute the five-year average of the following ratios:
    - i. EBIT/Sales: Because Morningstar does not report EBIT, calculate EBIT from EBITDA (Income Statement) by subtracting Depreciation and Amortization (Statement of Cash Flow)
    - ii. Net Property Plant and Equipment/Sales
    - iii. Net Working Capital (excluding cash)/Sales
  - b. Create a timeline for the next six years.
  - c. Forecast future sales based on the most recent year’s total revenue growing at the five-year growth rate (from 4) for the first five years. Use a long-run revenue growth rate of 3% for year six.
  - d. Under the assumption that the ratios in part (a) remain constant, use the average ratios computed in part (a) to forecast EBIT ( $\text{Sales} \times \text{EBIT to Sales ratio}$ ), Net Investment (change in  $\text{Sales} \times \text{PPE to Sales ratio}$ ), and Increases in NWC ( $\text{change in sales} \times \text{NWC to Sales ratio}$ ) for the next six years.
  - e. Forecast free cash flow for the next six years using Eq. 9.20 and the current corporate tax rate of 21%.
  - f. Estimate the terminal enterprise value in year five using the free cash flow in year six and Eq. 9.24.
  - g. Determine the enterprise value of the firm as the present value of the free cash flows.
  - h. Determine the stock price using Eq. 9.22.
  - i. Compare your result to the actual stock price. What assumptions might you change to justify this price?
8. Compare the stock prices from the two methods to the actual stock price. What recommendations can you make as to whether clients should buy or sell Columbia stock based on your price estimates?
9. Explain to your boss why the estimates from the two valuation methods differ. Specifically, address the assumptions implicit in the models themselves as well as those you made in preparing your analysis. Why do these estimates differ from the actual stock price of Columbia?

*Note: Updates to this data case may be found at [www.berkdemarzo.com](http://www.berkdemarzo.com).*