(7-16) Constant Growth Stock Valuation

Investors require a 13% rate of return on Brook Corporation stock ($r_s = 13\%$).

a. What would the estimated value of Brook's stock be if the previous dividend were $D_0 = \$3.00$ and if investors expect dividends to grow at a constant annual rate of (1) −5%, (2) 0%, (3) 5%, and (4) 10%?

b. Using data from Part a, what is the constant growth model's estimated value for Brook's stock if the required rate of return is 13% and the expected growth rate is (1) 13% or (2) 15%? Are these reasonable results? Explain.

c. Is it reasonable to expect that a constant growth stock would have $g_L > r_s$?

(7-19) Constant Growth Stock Valuation

You are analyzing Jillian's Jewlery (JJ) stock for a possible purchase. JJ just paid a dividend of $1.50 *yesterday*. You expect the dividend to grow at the rate of 6% per year for the next 3 years; if you buy the stock, you plan to hold it for 3 years and then sell it.

a. What dividends do you expect for JJ stock over the next 3 years? In other words, calculate D_1, D_2, and D_3. Note that $D_0 = \$1.50$.
b. JJ stock has a required return of 13%, the rate you'll use to discount dividends. Find the present value of the dividend stream; that is, calculate the PV of D_1, D_2, and D_3, and then sum these PVs.
c. JJ stock should trade for $27.05 3 years from now (i.e., you expect $\hat{P}_3 = \$27.05$). Discounted at a 13% rate, what is the present value of this expected future stock price? In other words, calculate the PV of $27.05.
d. If you plan to buy the stock, hold it for 3 years, and then sell it for $27.05, what is the most you should pay for it?
e. Use the constant growth model to calculate the present value of this stock. Assume that $g_L = 6\%$ and is constant.
f. Is the value of this stock dependent on how long you plan to hold it? In other words, if your planned holding period were 2 years or 5 years rather than 3 years, would this affect the value of the stock today, $\hat{P}_0$? Explain your answer.

(7-22) Build a Model: Free Cash Flow Valuation Model

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Start with the partial model in the file ***Ch07 P22 Build a Model.xlsx*** on the textbook's Web site. Selected data for the Derby Corporation are shown here. Use the data to answer the following questions.

a. Calculate the estimated horizon value (i.e., the value of operations at the end of the forecast period immediately after the Year-4 free cash flow). Assume growth becomes constant after Year 3.
b. Calculate the present value of the horizon value, the present value of the free cash flows, and the estimated Year-0 value of operations.
c. Calculate the estimated Year-0 price per share of common equity.

INPUTS (In Millions)		**Year**			
	Current	**Projected**			
	0	**1**	**2**	**3**	**4**
Free cash flow		−$20.0	$20.0	$80.0	$84.0
Marketable securities	$40				
Notes payable	$100				
Long-term bonds	$300				
Preferred stock	$50				
WACC	9.00%				
Number of shares of stock	40				

(8-8)
Build a Model: Black-Scholes Model

Start with the partial model in the file ***Ch08 P08 Build a Model.xls*** on the textbook's Web site. You have been given the following information for a call option on the stock of Puckett Industries: P = \$65.00, X = \$70.00, t = 0.50, r_{RF} = 5.00% and σ = 0.50.

a. Use the Black-Scholes option pricing model to determine the value of the call option.
b. Suppose there is a put option on Puckett's stock with exactly the same inputs as the call option. What is the value of the put?

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