

Chapter 8 Stock Valuation

8.1 Dividend Discount Model

Problem. Currently a stock pays a dividend per share of \$6.64. A security analyst projects the future dividend growth rate over the next five years to be 12.0%, 11.0%, 10.0%, 9.0%, 8.0% and then 7.0% each year thereafter to infinity. The levered cost of equity capital for the firm is 12.0% per year. What is the stock's value / share?

Solution Strategy. Construct a two-stage discounted dividend model. In stage one, explicitly forecast the firm's dividend over a five-year horizon. In stage two, forecast the firm's dividend from year six to infinity and calculate its continuation value as the present value of this infinitely growing annuity. Then, discount the future dividends and the date 5 continuation value back to the present to get the stock's value.

FIGURE 8.1 Excel Model for Stock Valuation – Dividend Discount Model.

	A	B	C	D	E	F	G	H
1	STOCK VALUATION		Dividend Discount Model					
2								
3	Inputs							
4	Levered Cost of Equity Capital	12.0%	24					
5								
6								
7								2nd Stage:
8	Dividend Discount Model		First Stage: Finite Horizon					Infin Horiz
9	Year	0	1	2	3	4	5	6
10	Dividend Growth Rate		12.0%	11.0%	10.0%	9.0%	8.0%	7.0%
11	Dividend	\$6.64	\$7.44	\$8.25	\$9.08	\$9.90	\$10.69	\$11.44
12	Continuation Value						\$228.75	
13	Dividend + Continuation Value		\$7.44	\$8.25	\$9.08	\$9.90	\$239.44	
14	PV of Dividend + Contin. Value		\$6.64	\$6.58	\$6.46	\$6.29	\$135.87	
15	Stock Value	\$161.84						
16								
17								
18								
19								
20	(5) Sum of PV of Future Dividends & Cont. Value Enter =SUM(C14:G14)							
21								
22								
23								
24								

(1) Dividend(t-1) * (1 + Dividend Growth Rate(t))
Enter =B11*(1+C10) and copy across

(2) (Date 6 Dividend) / (Lev Cost of Equity Capital - Infinite Horizon Dividend Growth Rate)
Enter =H11/(B4-H10)

(3) Sum of Future Dividends & Cont. Value
Enter =SUM(C11:C12) and copy across

(4) (Date t Sum) / ((1 + Nominal Discount Rate) ^ t)
Enter =C13/((1+\$B\$4)^C9) and copy across

The stock value is estimated to be \$161.84.

Problems

1. Currently a stock pays a dividend per share of \$43.37. A security analyst projects the future dividend growth rate over the next five years to be 21.0%, 18.0%, 15.0%, 13.5%, 11.5% and then 11.0% each year thereafter to infinity. The levered cost of equity capital for the firm is 13.4% per year. What is the stock's value / share?