

EXAMPLE OF THE TWO STAGE DIVIDEND GROWTH MODEL

A company just paid dividends of R1.00 per share. Assume that the dividends will grow by 20% per year during the next two years. After that, growth is expected to level off to a constant growth rate of 5% per year. The required rate of return is 8%. Calculate the share's intrinsic value using the two stage dividend growth model.

1. R42.36
2. R43.21
3. R45.56
4. R50.40

The formula for the two stage dividend growth model is as follows:

$$V_0 = \frac{D_1}{(1+r)^1} + \frac{D_2}{(1+r)^2} + \frac{P_2}{(1+r)^2}$$

$$\text{Where: } P_2 = \frac{D_3}{k - g}$$

Step 1: Determine the expected future cash flows:

$$D_0 = R1.00$$

$$D_1 = 1.00(1.20) = R1.20$$

$$D_2 = 1.20(1.20) = R1.44$$

$$D_3 = 1.44(1.05) = R1.512$$

$$\begin{aligned} P_2 &= \frac{1.512}{0.08 - 0.05} \\ &= R50.40 \end{aligned}$$

Step 2: Calculate the intrinsic value of the share:

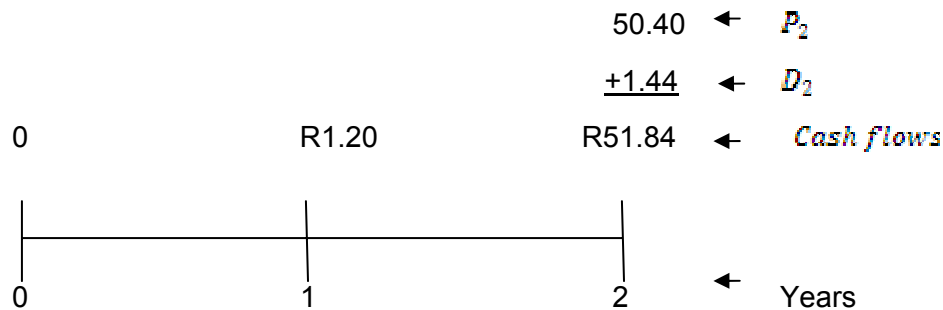
$$V_0 = \frac{1.20}{1.08} + \frac{1.44}{(1.08)^2} + \frac{50.40}{(1.08)^2}$$

$$= 1.1111 + 1.2346 + 43.2099$$

$$= R45.56$$

OR

Having completed the first step, you can also use your financial calculator to complete the second step as follows.



HP 10BII	
Input	Function
0	CF_0
1.20	CF_1
51.84	CF_2
8%	I/YR
	NPV
	R45.56

Refer to Marx 2013: 66