EXAMPLE – THREE STAGE DIVIDEND MODEL

Maroon Limited has just paid dividends of R1.00 per share this year. The dividend is expected to grow at 15% over the next two years and at 8% in year three. There after growth is expected to level off to a constant growth of 4%. Maroon Limited has a required rate of return of 18%. Calculate the intrinsic value of Maroon Limited using the three stage dividend discount model.

R6.46
R9.25
R9.37
R10.61

SOLUTION

$D_0 = 1.00$

$D_1 = 1.00(1.15) = 1.15$

$D_2 = 1.15(1.15)1.3225$

$D_3 = 1.3225(1.08) = 1.4283$

$D_4 = 1.4283(1.04) = 1.4854$

$$P_3 = \frac{D_4}{k - g}$$

$$= \frac{1.4854}{0.18 - 0.04}$$

$$= R10.61$$

Calculate the intrinsic value:

$$V_0 = \frac{D_1}{(1+k)^1} + \frac{D_2}{(1+k)^2} + \frac{D_3}{(1+k)^3} + \frac{P_3}{(1+k)^3}$$

$$= \frac{1.15}{(1.18)^1} + \frac{1.3225}{(1.18)^2} + \frac{1.4283}{(1.18)^3} + \frac{10.61}{(1.18)^3}$$

$$= 0.9746 + 0.9498 + 0.8693 + 6.4576$$

$$= R9.25$$

OR

HP 10BII	
Input	**Function**
End mode	BEG/END
0	CF_0
1.15	CF_1
1.3225	CF_2
12.0923 (=1.4823 +10.61) $NB: CF_3 = D_3 + P_3$	CF_3
18%	I/YR
	NPV
	R9.28

Refer to Marx 2013: 67