

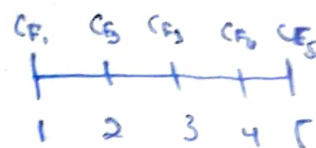
Q4 i) $n=7$, 11% coupon $C=110$ $r=10\%$ $F=1000$

Calculate the value of the bond at the end of year 5

$$PV_5 = \frac{C}{1.1} + \frac{110}{(1.1)^2} + \frac{1000}{(1.1)^2} = 1017.355$$

The cash flows are reinvested at a rate $R=9.5\%$

$$\begin{aligned} \text{FV of Cash flows: } & 110(1.095)^4 \\ & + 110(1.095)^3 + 110(1.095)^2 \\ & + 110(1.095)^1 + 110 = 664.90 \end{aligned}$$



Hence the total value gained at year 5 end = $1017.355 + 664.90 = 1682.26$

Ans

$$PV_2 = \frac{110 \left(1 - \frac{1}{(1.1)^7} \right)}{0.1} + \frac{1000}{(1.1)^7} = 1048.60$$

$$PV_2 = \frac{\text{HD Value}}{(1+TR)^{HD}} \Rightarrow 1048.60 =$$

$$TR = \left(\frac{\text{HD Value}}{PV} \right)^{\frac{1}{HD}} - 1 = \left(\frac{1682.26}{1048.60} \right)^{\frac{1}{5}} - 1$$

$$= 0.0991$$

$$\boxed{TR = 9.91\%}$$

(i) $r = 5$ 10% semi annual (5%) $r = 11\%$ $F = 100$

$C = 5$

	PV (Cash F)	PV $\times t$ / PV_B
1	$5/1.055 = 4.739$	0.5×4.739
2	$5/1.055^2 = 4.492$	1×4.492
3	4.298	
4	4.036	
5	3.825	
6	3.626	
7	3.437	
8	3.257	
9	3.088	
10	2.927	
	61.47	
	PV of Bond = 96.220	

$4.032 = 0.69437$

4.032

11th 2

Duration = 4.032 years

Q5 i)

$$\text{Mkt Price} = 80$$

$$\text{EPS} = 7$$

$$g = 3\% / \text{year}$$

$$\text{Div Retention ratio} = 40\%$$

$$\text{Div Payout ratio} = 60\%$$

$$r = 13\%$$

$$P/E = \frac{P/E}{1-g}$$

At the end of four years
 P/E is supposed to remain same
 $= 0.6$

$$\Rightarrow \frac{P}{E} = \frac{0.6}{0.13 - 0.03}$$

$$= 6.6$$

ii)

R_s 7 / share

for

last year

$$Div_{1,3} = 2.50$$

$$g_2 = 10\% \quad (1, 2, 3)$$

$$Div_3 = 4.2$$

$$g_3 = 3\%$$

$$r = 16\%$$

The value of stock at the end of three

$$V_3 = \frac{Div_3}{r - g_3}$$

$$= \frac{4.2}{0.16 - 0.03} = \underline{\underline{32.30}}$$

Current price of the stock

$$= \frac{2.5(1.1)}{0.16} + \frac{2.5(1.1)^2}{(0.16)^2} + \frac{2.5(1.1)^3}{(0.16)^3}$$

$\times V_3$

$$= \underline{\underline{39.650}}$$

$\frac{1}{2}$