NPTEL

Course Name: Security Analysis and Portfolio Management

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Session # 12: Valuation of Equity Shares – II

Q.1: Ken Limited has just declared Rs.6.00 as dividend per share (DPS). The beta of Ken's stock is 0.8. The market rate of return and risk free rate of return are 14% and 7% respectively.

a) If the DPS of Ken Limited is expected to remain constant, what is the value of share?
b) If the DPS is expected to grow @6% per annum constantly, what is the value per share?

Ans.:
Applying capital asset pricing model,
The expected rate of return = $k_e = R_f + \beta*(R_m - R_f) = 0.07 + 0.8 * (0.14 - 0.07) = 0.126 = 12.6\%$

a) Value per share = DPS / k_e = Rs.6.00 / 0.126 = Rs.47.62
b) $DPS_1 = DPS_0 * (1 + g)$ = Rs.6.00 * 1.08 = Rs.6.48
   Value per share = $DPS_1 / (k_e - g)$ = Rs.6.48 / (0.126 – 0.06) = Rs.98.18

Q.2: Zairo Limited has just declared Rs.5.00 as dividend per share. This is expected to grow at 15% for the next three years, then @ 10% for subsequent 2 years and further @ 6% constantly per annum from 6^{th} year onwards. If one's expected rate of return is 14%, how much one should pay for buying the share?
Ans.: This is a multi stage dividend model.
Expected dividend per share by taking the appropriate growth rates:

Year:	0	1	2	3	4	5	6
DPS (in Rs.)	5.0000	5.7500	6.6125	7.6044	8.3648	9.2013	9.7534
Present value of DPS @ 14% (in Rs.)		5.0439	5.0881	5.1327	4.9526	4.7789	

Present value of Dividends 1 through 5 = Rs. 24.9962
Terminal value at the end of year 5 = DPS6 / (k_e – g) = Rs.9.7534 / (0.14 – 0.06) = Rs.121.9171
Present value of terminal value = Rs.121.9171 / $(1 + k_e)^5$ = Rs.63.3199
Value per share = Rs.24.9962 + Rs.63.3199 = Rs.88.62

Q.3: Find the value of XYZ Co's equity share by using free cash flow to firm (FCFF) approach with the help of following information.

SOURCES OF FUNDS	**2009-10**	**APPLICATION OF FUNDS**	**2009-10**
Shareholders' funds		Gross fixed assets	1,100
Equity share capital (12 crore shares of Rs.10 each)	120	Less: accumulated depreciation	400

Reserves and Surplus	280	Net fixed assets	700
10% Loan	600	Net working capital	300
	1,000		**1,000**

The EBIT of XYZ for 2009-10 is Rs.250 crore. Depreciation for the year is Rs. 70crore The company is subject to 40% tax rate. The growth in sales, depreciation NOPAT (net operating profit after tax), gross fixed assets and net working capital will be 18% for the first three years, 10% for the next two years and 7% thereafter. There will be no change in the tax rate and present debt ratio. The expected rate of return of equity shareholders is 16%.

Ans.: The net operating profit after tax for 2009-10 = EBIT * (1 – tax rate) = Rs.250crore * (1 - 0.40) = Rs.150crore.

Debt ratio = 0.60

Post tax cost of debt: 0.06

Weighted average cost of capital (k) = $W_d * K_d + W_e * K_e$ = 0.60 * 0.06 + 0.40 * 0.16 = 0.10

Forecasted FCFF:

Year:	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Growth rate (%)		18%	18%	18%	10%	10%	7%
Assets (end value)	1,000	1180.00	1392.40	1643.03	1807.34	1988.07	2127.23
NOPAT	150.00	177.00	208.86	246.45	271.10	298.21	319.09
Depreciation	70.00	82.60	97.47	115.01	126.51	139.16	148.91
Increase in assets		180.00	212.40	250.63	164.30	180.73	139.16
FCFF		79.60	93.93	110.84	233.31	256.64	328.83
Discounted value of FCFF (@10%)							

The terminal value of the firm = $FCFF_6$ / (k – g) = 323.83 / (0.10 – 0.07) = Rs.10,961 crore

Present value of FCFF from 2010-11 till 2014-15 = Rs.551.97 crore

Present value of terminal value = 10,961 / $(1+.10)^5$ = Rs.6805.85 crore

Total value of the firm = Rs.7357.81 crore / 12 = Rs.613.15

Value of equity = Value of firm – value of debt = Rs.7357.81 crore – Rs.600 crore = Rs.6,757.81 crore

Value per share = Rs.6,757.81 crore /