

Semester III(PG)

Subject: Business Valuation (CC 301)

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Lecture Note 4

Discounted Cash Flow Method

The Discounted Cash Flow Method is an income-based approach to valuation that is based upon the theory that the value of a business is equal to the present value of its projected future benefits (including the present value of its terminal value). The terminal value does not assume the actual termination or liquidation of the business, but rather represents the point in time when the projected cash flows level off or flatten (which is assumed to continue into perpetuity). The amounts for the projected cash flows and the terminal value are discounted to the valuation date using an appropriate discount rate, which encompasses the risks specific to investing in the specific company being valued. Inherent in this method is the incorporation or development of projections of the future operating results of the company being valued.

Distributable cash flow is used as the benefit stream because it represents the earnings available for distribution to investors after considering the reinvestment required for a company's future growth. The discounted cash flow method can be based on the cash flows to either a company's equity or invested capital (which is equal to the sum of a company's debt and equity). A "direct to equity" discounted cash flow method arrives directly at an equity value of a company while a "debt-free" discounted cash flow method arrives at the invested capital value of a company, from which debt must be subtracted to arrive at the company's equity value.

Differences Between "Direct to Equity" and "Debt-Free" DCFs		
Characteristic	Direct to Equity	Debt-Free
Interest Expense and Changes in Debt	Factored into cash flow stream to determine cash flow to equity investors	Excluded from cash flow stream to determine cash flow to invested capital (debt and equity)
Discount Rate	Equity discount rate	Weighted-average cost of capital (WACC) - Takes into account both debt and equity rates of return
Resultant Value	Equity value	Invested capital value (equity + debt)

Problem 1

H Ltd is growing at an above average rate. It foresees a growth rate of 20%p.a. in free cash flows to equity shareholders in the next 4 years. It is likely to fall to 12% in the next two years. After that, the growth rate is expected to stabilise at 5%. The amount of free cash flow (FCFE) per equity share at the beginning of current year is Rs 10. Find out the maximum price at which the investor, follower of free cash flow approach, will be prepared to buy the company's shares as on date, assuming an equity capitalisation rate of 14%.

Solution:

Present Value of FCFE (From 1st to 6th year)

Year	FCFE per share	PV factor (0.14)	Total PV(Rs)
1	Rs10 (1+0.20) ¹ = Rs12	0.877	10.52
2	Rs10 (1+0.20) ² = Rs14.40	0.769	11.07
3	Rs10 (1+0.20) ³ = Rs17.28	0.675	11.66
4	Rs10 (1+0.20) ⁴ = Rs20.74	0.592	12.28
5	Rs 20.74 (1+0.12) =Rs23.23	0.519	12.06
6	Rs 23.23(1+0.12) =Rs 26.02	0.456	11.86
Total PV of FCFE			69.45

Market price of share at the end of 6th year = $FCFE_7 / (K_e - g) = Rs\ 26.02(1.05) / (14\% - 5\%)$
 $= 27.321 / 9\% = Rs\ 303.57$

PV of Rs 303.57 = $Rs303.57 \times 0.456 = Rs138.43$

Maximum Price of share = $Rs\ 69.45 + Rs\ 138.43 = Rs\ 207.88$ (Answer)

Problem 2

Determine EVA from the following data of the company:

	Rs crores
EBIT	36
Less Interest on 12% Debt	6
Earnings before taxes	30
Less Corporate taxes (30%)	9
Earnings after taxes	21
Less Dividend on 13% Preference share Capital (Rs 30 crores X 0.13)	3.9
Earnings for equity shareholders	17.1
Equity funds having cost of 16%	80

Also determine EVA as a percentage of capital employed.

Solution

Determination of weighted average cost of capital

Particulars	Amount (Rs)	After-tax cost (%)	Total cost (Rs)
Equity funds	80	0.16	12.8
Preference share Capital	30	0.13	3.9
Debt (Rs6crore/0.12)	50	0.84	4.2
Total	160		20.9

$K_e = (20.9/160) \times 100 = 13.06\%$

Determination of NOPAT

Particulars	Rs crores
EBIT	36
Less Taxes (0.3)	10.8
NOPAT	25.2

$EVA = NOPAT - (WACC \times \text{Total Capital Employed})$

$= Rs25.5\text{crore} - Rs\ 20.9\text{crore} = Rs\ 4.3\text{crore}$

EVA as a percentage of capital employed

$= (Rs4.3\text{crores} / 160\text{crores}) \times 100 = 2.69\%$