

Semester III(PG)

Subject: Business Valuation (CC 301)

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Lecture Note 3

2.Earnings/Income Approach

The income business valuation approach is based on the idea of valuing the present value of future benefits. This approach estimates business value by considering the future income accruing over a period of time. The methods most commonly used by business valuation professionals include the Capitalization of Earnings Method and the Discounted Earnings Method (Discounted Cash Flow Method).

It will further be classified as follows:

a)Capitalization of Earnings Method

The capitalization method basically divides the business expected earnings by the so-called 'capitalization rate'. The idea is that the business value is defined by the business earnings and the capitalization rate is used to relate the two. This method is more appropriate when it appears that a company's current operations are indicative of its future operations, assuming of course, a normal growth rate. Under this method a stable level of earnings is divided by a capitalization rate in order to arrive at an operating value for the entity. Where net earnings are being capitalized, the capitalization rate is the net earnings discount rate less the average sustainable growth rate.

Value = Net Operating Income /Capitalization Rate

Capitalization Rate = Discount Rate – Growth Rate

Example : An investor wants to invest in an equity share of ABC Ltd. The company's last EPS was Rs. 50 per share and dividend payout ratio is 40%. The required rate of return from equity investment is 20%. Calculate the intrinsic value of equity if (i) There is no growth in dividend (ii) Dividend are expected to grow at a constant rate of 18% p.a.

Solution:

We are given that EPS = Rs. 50 Dividend = 40%

So, last dividend (D₀) = 40% of Rs. 50 = Rs. 20

When there is no growth in dividend So, D₀ = D₁ = Rs 20

$P_0 = D_1 / K_e = 20 / 0.20 = Rs. 100$

Therefore, the intrinsic value is Rs. 100 when there is no growth in dividend.

(ii) When there is constant growth rate in dividend $g = 18\%$

therefore, $D_1 = D_0 (1 + g)$

$= 20 (1 + 0.18) = 23.6$

$$P_0 = D_1 / (K_e - g)$$

$$= 23.6 / .20 - 0.18 = \text{Rs. } 1180$$

Therefore, the intrinsic value is Rs. 1180, when there is constant growth of 18%.

(b) Discounted Cash Flow Method (DCF)

DCF expresses the present value of the business as a function of its future cash earnings capacity. In this method, the appraiser estimates the cash flows of any business after all operating expenses, taxes, and necessary investments in working capital and capital expenditure is being met. Valuing equity using the free cash flow to stockholders requires estimating only free cash flow to equity holders, after debt holders have been paid off. This method is more appropriate when future returns are expected to be substantially different from current operations. This method usually has two stages, the first stage involves a discreet forecast of future earnings or cash flow to be discounted to the present using a discount rate and the second stage involves the construction and discounting of a terminal value. The terminal value is determined when the entity's future return stream is expected to achieve stable long-term growth.

To use DCF valuation, we need to estimate the following:

- The life of the asset
- The cash flows during the life of the asset
- The discount rate to apply to these cash flows to get present value
- The Present Value of an asset is arrived at by determining the present values of all expected future cash flows from the use of the asset. Mathematically,

$$\text{Value} = CF_1 / (1 + r^1) + CF_2 / (1 + r^2) + \dots + CF_n / (1 + r^n)$$

where CF = Expected Future Net Cash Flow during period

n = Life of the asset

r = rate of discount

The expected future net cash flow is defined as after-tax cash flow from operations on an invested capital basis (excluding the impact of debt service) less the sum of net changes in working capital and new investments in capital assets.

The discount rate should reflect the riskiness of the estimated cash flows. The rate will be higher for high risk projects as compared to lower rates for safe or less risky investments. The Weighted Average Cost of Capital (WACC) is used as the discount rate. The cost of capital with which the cash flows are discounted should reflect the risk inherent in the future cash flows.

The WACC is calculated using the following formula:

$$\text{WACC} = [(E / (D + E)) \times CE] + [(D / (D + E)) \times CD \times (1 - T)]$$

where E is the market value of equity, D is the market value of debt, C E is the cost of equity, CD is the cost of debt and T is the tax rate.

The first step in determining WACC is the assessment of capital structure, i.e., how a company has financed its operations.

It can thus be seen that the company's net cash flows are projected for a number of years and then discounted to present value using the WACC. The expected cash flows earned beyond the projection period are capitalized into a terminal value and added to the value of the projected cash flows for a total value indication.

Valuation of company

Under the DCF method, companies are valued by discounting the free cash flows.

Free cash flows are defined as follows:

Free cash flows to equity = Net income+Depreciation+/-non cash items- Changes in working capital- Capital expenditure+(New debt issues-repayment of debt)-Preference dividends

Example

Assume the following pre-tax fully adjusted cash flows as they relate to H Co.:

Projected annual cash flows to be received at the end of:

Year 1	\$10,500
Year 2	40,700
Year 3	80,600
Year 4	110,100
Year 5	150,300

Year 1 of the projected cash flows is the year following the valuation date. The pre-tax discount rate is 24 percent. The pre-tax capitalization rate is 24 percent.

Calculation of present value factors:

Year	Present value factors	Present Value Factor for 24% rate of return
1	$1/(1.24)^1$	0.8065
2	$1/(1.24)^2$	0.6504
3	$1/(1.24)^3$	0.5245
4	$1/(1.24)^4$	0.4230
5	$1/(1.24)^5$	0.3411

Calculate the value of the business

a) Calculate the present value of the annual cash flows:

End of year 1	Net Cash Flow	PV Factor	Present Value
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1	\$10,500	0.8065	\$ 8,468
2	40,700	0.6504	26,470
3	80,600	0.5245	42,274
4	110,100	0.4230	46,572
5	150,300	0.3411	<u>51,268</u>
			\$175,052

b) Calculate the present value of the terminal value:

End of year 1	Terminal Value	PV Factor	Present Value
5	\$626,250	0.3411	\$213,614

The company's terminal value is \$626,250 at the end of year 5 (150,300/24%). This value, also known as the "terminal value", is equal to the present value of a perpetual annual cash flow of \$150,300.

c) Add both present values:

PV of annual cash flows	\$175,052
PV of terminal value	+ <u>213,614</u>
TOTAL VALUE OF BUSINESS	\$ <u>388,666</u>