



CAIIB PAPER-3

Module-C Unit-1

**ADVANCED BUSINESS & FINANCIAL
MANAGEMENT (ABFM)**



CAIIB Paper 3 (ABFM) Module C Unit 1: Corporate Valuation

Introduction

Corporate valuation is the process of determining the value of a company entity, and it is most commonly used in the context of the financial industry.

There are two primary types of value, which are as follows:

- **Book Value:** Book value can be described as the value of an asset or the complete business entity as established by the books or the financials of the company. Thus, we may say that the book value can be derived from the Balance Sheet.
- **Market Value:** This refers to the value that is derived through the analysis of the market. **The market capitalization of a company, often known as the number of outstanding shares multiplied by the share price, defines the market worth of a company.**
- The market value is fundamentally an equity value because equity investors value a company's shares apart from debt lenders and other investors.
- The term "**enterprise value**," which is synonymous with "**firm value**," refers to the value that is placed on a complete company, including its debts and other commitments.
- **Enterprise's Value** = Equity value + short-term debts + long-term debt + current portion of long-term debts + capital lease obligations + preferred securities + non-controlling interests + other non-operating liabilities – (Cash and cash equivalents).

Approaches To Corporate Valuation

The principal valuation approaches, as per IVS 105, are:

Market approach

- The market approach is a valuation method that determines the value of a company, an intangible asset, an ownership stake in a firm, or of securities, by **taking into account the price of a recent transaction or the price of assets that are comparable to the one being valued.**
- When determining the value of an asset, the market approach takes into account its size, quantity, quality, and other characteristics, in addition to the values of comparable assets. This value is then applied to the item under examination.

This method assists in **determining the worth of a business by making a comparison of the business (under valuation) to other businesses of a comparable nature that have been sold in more recent times.**

- ✓ **Income approach:** When valuing a company, the income approach is utilised to determine the present or current value of the company's expected future earnings or cash flows. **The net operating income (NOI) of the company is determined using this method, and then that figure is divided by the rate of capitalization.**
- ✓ **Cost approach:** The cost approach, which is also known as the asset-based approach, is able to extract value by combining the FMV (Fair Market Value) of the company's net assets. This method is also known as the asset-based approach (assets less its liabilities).
- ✓ this methodology has a tendency to **determine the worth of the firm on the basis of the value of the assets held by the business.** The use of this method is particularly helpful for asset-intensive businesses, holding corporations, and troubled entities whose worth is less than their whole net tangible value.

Methods Of Determining Value Of Firm

The four primary methods that can be utilised for determining the value of a firm are-

- ✓ Adjusted Book Value Approach
- ✓ Stock and Debt Approach
- ✓ Direct Comparison Approach
- ✓ Discounted Cash Flow Approach.

Adjusted Book Value Approach

It is a measure of a company's valuation after all the liabilities and assets are adjusted to reflect true market value.

The degree of precision that may be achieved, using the book value approach, is directly proportional to the degree to which the net book values of the assets accurately represent their fair market values. **There are three potential causes for a discrepancy between book prices and market values:**

- The book value of an asset might become increasingly disconnected from its actual value as a result of inflation.
- Constant technological advancements render some essential assets obsolete and render them useless even before depreciation has taken place.
- Organisational capital, which is an extremely important form of capital, is not shown on the balance sheet.

Modifying the Book Value to factor Replacement Costs

the current replacement costs can be used in place of the asset's net book value. The following methodology may be used to assign values to each of the assets:

Cash and Cash Equivalents:

- The value of money does not change under any circumstances. As a result, assigning a value to it is not problematic in any way.

Receivables:

- In most cases, the value of receivables is determined by their face value. When the creditworthiness of the debtors is in question, it is prudent to set aside money to cover possible defaulted debts.

Stocks in hand:

- Raw materials, work-in-process, and finished goods are the three distinct types of inventory that can be distinguished from one another. The most recent cost of acquisition may be used to determine the worth of raw materials.
- Either the cost of work-in-process (which includes the cost of raw materials in addition to the cost of processing) or the selling price can be used as a lens through which to analyse work-in-process (selling price of the final product less expenses to be incurred in translating work-in-process into sales).
- inventory of finished goods is valued by deducting the expenses that will be incurred in the process of packaging, processing, transporting, selling, and collecting receivables, from the sale price that can be expected to be realised in the normal course of business.

Other Current Assets

- Deposits, prepaid expenses, and accruals are examples of other types of current assets that are recognized at their book value.

Tangible Fixed Assets:

- Land, buildings and other civil works, as well as machinery and plant, make up the majority of a company's tangible fixed assets. The value of land is determined as if it were uninhabited and on the market.
- It is possible to value buildings and civil works by subtracting the amount of physical depreciation and deterioration from the cost of replacement.
- It is possible to determine the worth of plant and machinery by calculating the market price of comparable (used) assets and adding the cost of transportation and installation to that figure.

Intangible Fixed Assets

- Patents, software, copyrights, mining leases, licences, spectrum etc. are examples of Intangible Fixed Assets. The valuation of each of these assets is unique, depending on factors like its book value, market price, utility, remaining life, etc.

Non-operating Assets

- The assets of an organisation that are not essential to its day-to-day operations are referred to collectively as "non-operating assets." Financial securities, surplus land, and disused structures are the three types of non-operating assets that are most frequently encountered. These assets are evaluated based on their true value in the market.

Stock And Debt Approach

- When a company's securities are traded on a public exchange, the worth of the company can be determined by simply adding the current market value of all of its outstanding securities.
- The efficiency of the market is the fundamental assumption that underpins the market-based approach. This indicates that the price, at which an asset is trading on the market, is the estimation of its intrinsic worth.
- Instead of utilising the price that existed on the date of the lien, some appraisers recommend using an average of recent stock prices, because of the volatility of stock prices.
- Whether or not it is rational to take the average of things, is dependent on how efficient the stock market is. If the market is believed to be efficient, which indicates that prices of securities reflect all of the information that is readily available to the public, then there is no need for averaging.

Direct Comparison Approach

- The Direct Comparison Approach is founded on the Principle of Substitution, which states that a buyer will not pay more for a given property than the cost of a comparable, competitive property with the same utility in the open market, provided there is no delay in making the transaction.
- The most important aspect of this analysis is locating these comparable businesses and determining their current market prices.

The valuation method involves three steps:

- ✓ Determining the property's highest and best use,
- ✓ Identifying similar properties that have sold, and
- ✓ Adjusting the comparable sales' values.

The common multiples used in the direct comparison method include:

- ✓ Enterprise value to sales
- ✓ Company value to EBIT
- ✓ Price to earnings
- ✓ Price to book value
- ✓ Price to sales

Discounted Cash Flow Approach

- The present value of potential future cash flows can be calculated using a method known as discounted cash flow, or DCF. Obtaining an investment's value, with the use of this strategy, is possible.
- The DCF technique requires one to apply a discount rate to each periodic cash flow of the company. The discount rate is determined by that company's cost of capital. The total Present Value (PV) of all future cash flows can be calculated by

multiplying this discount by each future cash flow to arrive at a number that represents the total present value of all future cash flows.

- This idea is helpful for calculating the value of a prospective acquisition, of a possible investment in an annuity, or of a purchase of a fixed asset.

To calculate Present Value (PV) of a firm, we use the following formula:

$$PV = \sum_{t=1}^n \frac{C_t}{(1+r)^t}$$

c_t = The amount received for period t

n = Total number of periods

r = The Discount rate

- When valuing a company with the discounted cash flow methodology, it is necessary to make cash flow projections over an unspecified amount of time unlike a project which is presumed to have a definite life.
- Also, the basic presumption in a capital project is that it will not expand during its life-cycle. But, a business entity is anticipated to expand in the future. In order to accomplish this objective, the value of the company is typically segmented into two time periods, namely: **Value of the firm = Present value of cash flow during the explicit forecast period + Present value of cash flow after the explicit forecast period**

PROFIT AND LOSS ACCOUNT				
	2018-19	2019-20	2020-21	2021-22
Net Sales	400	500	600	700
Income from Investments	20	30	35	40
Non-operating Income	15	20	25	30
Total Income	435	550	660	770
Cost of goods sold	300	350	390	430
Sales and General administration expenses	40	50	60	70
Depreciation	15	16	17	18
Interest Expenses	22	25	26	28
Total Cost and expenses	377	441	493	546
Profit Before Tax	58	109	167	224
Tax Provision	18	39	52	72
Profit After Tax	40	70	115	152
Dividend	21	35	60	80
Retained Earnings	19	35	55	72

BALANCE SHEET				
Equity Capital	150	180	180	180
Reserve and Surplus	49	84	139	211
Borrowings	230	250	260	280
Total	429	514	579	671
Fixed Assets	150	152	157	162
Investments	200	300	350	432
Net Current Assets *	69	62	72	77
Total	419	514	579	671

Valuation Using DCF Approach

Operating Invested Capital:

- Operating Invested Capital refers to that portion of the invested capital which is used to acquire only operating assets. The operating working capital is also added to it to arrive at total Operating Invested Capital.
- **Operating working capital** = operating working capital assets – non-interest bearing current liabilities.
- **Operating working capital assets** = total working capital assets - non-operating working capital assets (excess cash and marketable securities)

	2018-19	2019-20	2020-21	2021-22
BALANCE SHEET				
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	2018-19	2019-20	2020-21	2021-22
Operating Invested Capital	219	214	229	239

Net operating profit less adjusted taxes (NOPLAT):

NOPLAT = EBIT – Taxes on EBIT

EBIT is the operating income that the company would have received before taxes if it did not have any debt obligations. During the process of computing EBIT, interest expenses, interest income, and revenue or loss from non-operating activities are not taken into account.

The calculation of NOPLAT for ABC Industries, assuming a marginal tax rate of 30 percent is given below:

	2018-19	2019-20	2020-21	2021-22
Profit before tax	58	109	167	224
Add:				
Interest expense	22	25	26	28
Less:				
Interest Income	-20	-30	-35	-40
Non-operating income	-15	-20	-25	-30
EBIT	45	84	133	182
Tax provision from income statement	18	39	52	72
Add:				
Tax shield on interest expense	6.6	7.5	7.8	8.4
Less:				
Tax on interest income	-6	-9	-10.5	-12
Tax on non-operating income	-4.5	-6	-7.5	-9
Total Taxes on EBIT	14.1	31.5	41.8	59.4
NOPLAT	30.9	52.5	91.2	122.6

Return on Invested Capital:

ROIC = NOPLAT / Operating Invested Capital

	2019-20	2020-21	2021-22
NOPLAT (A)	52.5	91.2	122.6
Operating Invested Capital at the beginning of the year (B)	219	214	229
Return on Invested Capital (A)/(B)	23.97%	42.62%	53.54%

Net Investment:

- The difference between the amount of gross investment and the amount of depreciation is known as the net investment.
- The term “**gross investment**” refers to the sum of “**cumulative expenditure**,” which includes expenditure on current as well as non-current assets.” The term “depreciation” refers to any and all costs that are not paid in cash.
- **Net investment made over the year** = (Net non-current/fixed assets at the end of year + Net current assets at the end of year) Minus (Net non-current/fixed assets at the beginning of year + Net current assets at the beginning of year)

Calculation of Net Investment

	2019-20	2020-21	2021-22
Net non-current/fixed assets at the end of the year	152	157	162
Add:			
Net current assets at the end of the year	62	72	77
Sub-Total	214	229	239
Less:			
Net non-current/fixed assets at the beginning of the year	-150	-152	-157
Net current assets at the beginning of the year	-69	-62	-72
TOTAL	-5	15	10

STEP 2: Calculating The Free Cash Flow

- The post-tax cash flow created from the operations of the company is known as the Free Cash Flow. This cash flow is calculated after the firm has accounted for investments in fixed assets and the net working capital that is necessary for the operations of the company.

The Free Cash Flow (FCF) can be calculated as follows:

- FCF = NOPLAT – Net investment**

$$\text{FCF} = (\text{NOPLAT} + \text{Depreciation}) - (\text{Net investment} + \text{Depreciation})$$

$$\text{FCF} = \text{Gross cash flow} - \text{Gross investment}$$

- If we have to calculate free cash flow available to investors of both equity and debt, we should add the non-operative cash flow to the figure of FCF arrived above.

STEP 3: ESTIMATING THE COST OF CAPITAL

- The rate of return that must be offered to investors in exchange for their capital is referred to as the cost of capital. If the funds have to be borrowed, the cost will be proportional to the interest that is accrued and has to be paid back on the loan. If the funds are equity, then the cost is the return that investors anticipate receiving, which can come either through an increase in the stock's price or from dividends.

Three stages:

- ✓ The first step is to calculate the percentages of each source that will be used to raise funds.
- ✓ In the second step, you will calculate the marginal cost of each source.
- ✓ The third step involves determining the weighted average cost of capital using the appropriate formula.

The weighted average cost of capital, or WACC, is a marginal cost, or the cost of raising more capital, that is averaged across the various sources of capital.

Let r_d , r_p , and r_e equal the after-tax cost of debt, the cost of preference shares, and the cost of equity shares respectively, and let w_d , w_p , and w_e represent the proportion of debt, preference shares, and equity shares capital in the capital structure respectively. The weighted average cost of capital shall be calculated using the following formula:

$$WACC = w_d r_d + w_p r_p + w_e r_e$$

Illustration 1:

Source	Weight	Cost of Capital	Weight * Cost
Debt	45%	8%	0.036
Preference Shares	5%	9%	0.0045
Equity Shares	50%	15%	0.075
Weighted Average Cost of Capital			0.1155

Illustration 2: The data in respect of ANC Limited is given:

- Additional Finance Required = Rs. 20,00,000
- Retained earnings = Rs. 4,00,000
- Debt equity ratio 25: 75
- Cost of Debt Before Tax: 10% up to Rs. 2,00,000 and 13% beyond Rs. 2,00,000
- EPS = Rs.12
- Dividend Payout = 50% of earnings
- Expected growth rate(G) in dividend 10%
- Current Market Price(MP) per Share = Rs. 60
- Company's Tax Rate(TC) = 30%
- Shareholder's Personal Tax Rate = 20%

Calculate: A. Post-Tax Average Cost of Additional Debt. B. Cost of Equity C. Cost of Retained Earnings D. Overall Weighted Average (After Tax) Cost of Additional Finance.

Solution:-

Debt : Equity = 25:75

Debt = $0.25 * 20,00,000 = \text{Rs. } 5,00,000$

Debt Fund: 10% Debt = Rs. 2,00,000 13% Debt = Rs. 3,00,000

Post-Tax Average Cost of Additional Debt:

Cost Of Debt = Total Interest (1-Tax rate)/ 5,00,000

$$= [20,000 + 39,000] (1 - 0.3) / 5,00,000$$

$$= (41,300 / 5,00,000) \times 100 = 8.26\%$$

$$\text{Equity} = 0.75 \times 20,00,000 = \text{Rs. } 15,00,000$$

$$\text{Retained Earnings: Rs. } 4,00,000$$

$$\text{Additional Equity} = \text{Rs. } 15,00,000 - 4,00,000 = \text{Rs. } 11,00,000$$

$$\text{Cost of Equity CE} = (\text{EPS} \times \text{Payout} / \text{MP}) + G$$

$$= (12 (50\%) / 60 \times 100) + 10\%$$

$$= 10\% + 10\% = 20\%$$

$$\text{Cost of Retained Earnings CR} = \text{CE} (1 - T_p)$$

$$= 20(1 - 0.2) = 16\%$$

Weighted Average Cost of Capital

	Amount (Rs.)	Cost After Tax%	Cost(Rs.)
Equity	11,00,000	20.00%	2,20,000
Retained earning	4,00,000	16.00%	64,000
Debt	5,00,000	8.26%	41,300
Total	20,00,000		3,25,300
C_o	$(3,25,300 / 20,00,000) \times 100 = 16.27\%$		

STEP 4: FORECASTING PERFORMANCE

After examining past performance and estimating the cost of capital, we go on to constructing financial forecasts. The following are the steps:

- ✓ Choose the explicit time period for the forecast.
 - ✓ In order to improve the company's performance in the future, you should develop a strategic vision.
 - ✓ Translate the strategic vision into financial forecasts.
 - ✓ Check that everything is aligned and consistent.
- The worth of a company can be calculated as the present value of the predicted cash flows that will be generated by the company in the future.
 - The growth rate that will be used to anticipate future revenues and earnings is the most important input in the valuation process, especially for high-growth companies. A company can be valuable if it owns assets that generate current cash flows or if it has other valuable characteristics or if it is anticipated that such assets will be acquired in the foreseeable future.

STEP 5: DETERMINING THE TERMINAL OR CONTINUING VALUE

- The first type of value is known as the **continuing value**, and it is a reflection of the current value of the anticipated cash flows that will result from maintaining the investment until the end of its life.

- The second type of value is known as the **liquidation or salvage value**, and it refers to the amount of net cash flow that the company would obtain if it ended the project right now.
- The third type of value is known as divestiture value, which is the sum that the investor with the highest offer will pay for the asset in question.
- Depending on which of these three values is the highest, a company must decide whether to continue working on an existing project, whether to liquidate the project, or whether to sell it to someone else.

The estimation of the continuing value is accomplished in two stages:

Selection of a suitable method: The broad classifications of the various methods used for finding out the continuing value include cash-flow and non-cash flow methods.

Cash Flow Methods:

- ✓ **Growing free cash flow perpetuity method**
- ✓ **Value driver method**

Non-Cash Flow Methods:

- ✓ **Replacement Cost Method**
- ✓ **Price-PBIT ratio method**
- ✓ **Market-to-book ratio method**

Both the cash flow methods of arriving at the terminal value, assume that after explicit forecast period, the cash flows will grow at a constant rate forever. **So, the formula will be:**

$$PV_T = FCF_{t+1} / (WACC - g)$$

Where,

PV_T is the terminal or continuing value of the enterprise,

FCF_{t+1} is the free cash flow during the first year after the explicit forecast period T,

WACC is the weighted average cost of capital and,

g is the constant growth rate after the explicit forecast period

The other cash flow method, i.e. the Value driver method, also uses the perpetuity formula but expresses the continuity value in terms of value drivers, i.e. NOPLAT, expected rate of return and growth rate. **The formula is as under:**

$$PV_T = \text{NOPLAT}_{T+1} * (1 - g/r) / (\text{WACC} - g)$$

Where,

PV_T is the terminal or continuing value of the enterprise,

NOPLAT_{t+1} is the net operating profit less adjusted tax during the first year after the explicit forecast period T,

WACC is the weighted average cost of capital

g is the constant growth rate after the explicit forecast period and,

r is the expected rate of return on net new investments.

Computation of the continuing value: When attempting to determine the worth of a business that is expected to go on, many people turn to the rising free cash flow perpetuity technique. The weighted average cost of capital (also known as WACC) and a constant growth rate (G) are two essential components that must be specified for finding the continuing value using this approach.

STEP 6. CALCULATING THE FIRM VALUE AND INTERPRETING THE RESULTS

The final step of the valuation process involves computing the worth of the company and evaluating the results of that calculation.

The following components can be added together to arrive at an estimate of the company's value:

- ✓ The value, in present terms, of the free cash flow over the time covered by the explicit forecast.
- ✓ Continued Value after the explicit forecast period, discounted to its present value.
- ✓ The value of non-operating assets not taken into account when the free flow analysis was carried out.

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