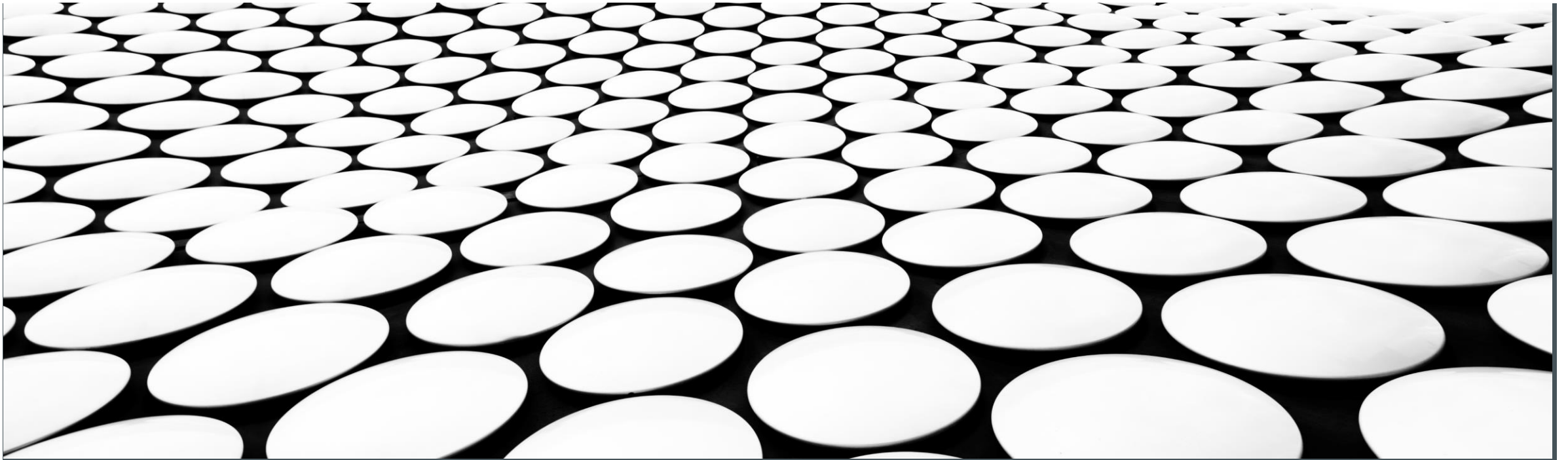

MODULE II - VALUATION METHODS – AN OVERVIEW

BY B D CHATTERJEE *FCA, ACMA, ACS, DIP (IFR) ACCA – UNITED KINGDOM*





VALUATION METHODS

VALUATION METHODS

- The methods of valuation are highlighted as under:
 - Market based valuation method
 - Dividend Discount method
 - Discounted cash flows valuation method
 - Net Asset value method
 - Earnings method
 - Relative valuation method
 - Contingent claim valuation method
 - Economic Value Added (EVA)

MARKET BASED VALUATION METHOD

- This is the simplest way to value an enterprise traded publicly in a stock exchange. The company's stock can be bought and sold in that exchange. This method indicates the value of the subject company by comparing it to publicly traded companies in similar lines of business.

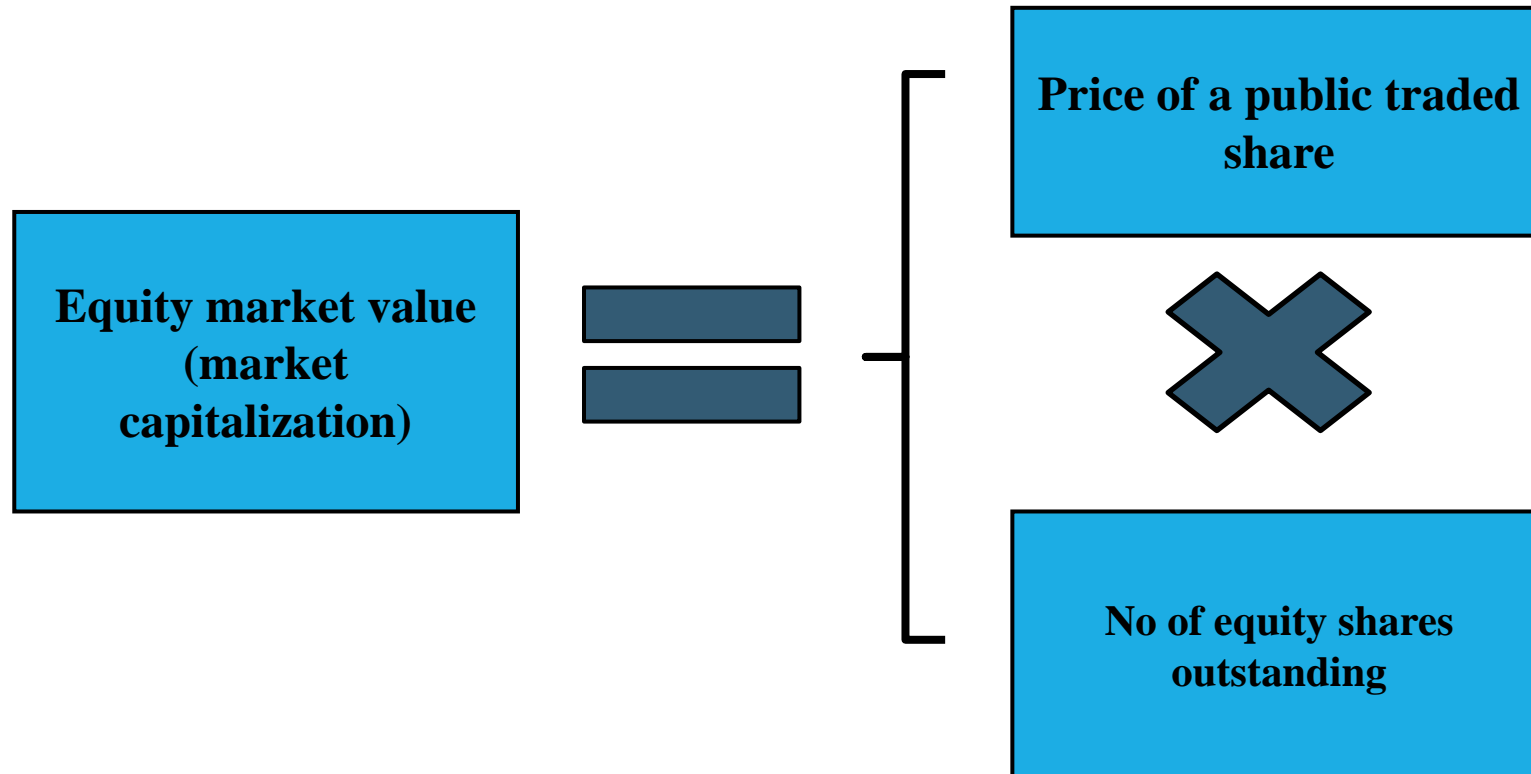


ILLUSTRATION I – MARKET BASED VALUATION METHODS

Stock price of X Ltd is Rs. 240 per share. Number of shares outstanding is 10 crores. What is the equity value of the enterprise?

Solution

Equity market value (market capitalisation) of X Ltd is as under:

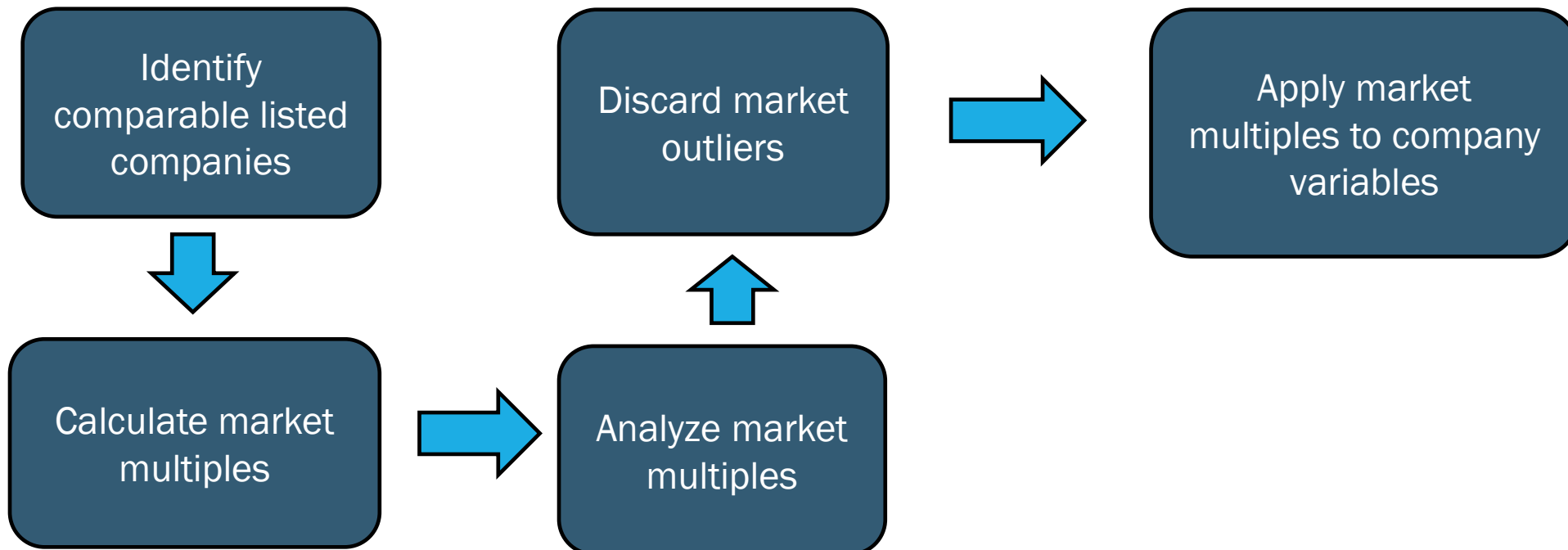
= Market price per share x No. of shares outstanding

= Rs. 240/- x 10 crores

= Rs. 2400 crores.

MARKET BASED VALUATION METHOD

- ❑ Common equity level multiples could also be:
 - (a) Price/Earnings Ratio (P/E)
 - (b) Price/tangible book value (P/B)



DIVIDEND DISCOUNT METHOD

- ❑ From the standpoint of the shareholder who buys and holds stocks, the cash flows received at any point in time, are the dividends paid on it and the market price of the share at that point.
- ❑ The present value of a share is nothing but the future value of dividends receivable on that share.
- ❑ There are three versions of this model that are used to determine the intrinsic value of a share of stock:
 - (i) the constant (or no-growth) dividend model,
 - (ii) the constant dividend with growth model and
 - (iii) the two stage (or two phase) dividend growth model. Two stage growth relates to high growth in the first stage followed by constant low growth till the end. This is ideally meant for firms which plough back more profit and pay only residual amount as dividend.

DIVIDEND DISCOUNT METHOD

I. The constant (or no-growth) dividend model

The formula is: $P = D_t / K_e$

Where, P = Intrinsic value

D_t = Expected dividend

K_e = Cost of equity or expected return

DIVIDEND DISCOUNT METHOD

II. the constant dividend with growth model

The formula is:

$$P = D_t / (K_e - g)$$

Where, P = Intrinsic value

D_t = Expected dividend

K_e = Cost of equity or expected return

g = constant dividend growth rate

DIVIDEND DISCOUNT METHOD

III. the two stage (or two phase) dividend growth model. Two stage growth relates to high growth in the first stage followed by constant low growth till the end. This is ideally meant for firms which plough back more profit and pay only residual amount as dividend.

The formula is:

$$P = \sum_{t=1}^{\infty} [D_0 (1+g_1)^t / (1 + K_e)^t] + D_t (1+g_2)^t / (K_e - g_2) [1 / (1 + K_e)^t]$$

Where, P = Intrinsic value = PV of dividends + PV of price

D_t = Expected dividend

K_e = Cost of equity or expected return

g₁ = initial dividend growth rate

g₂ = Steady dividend growth rate

ILLUSTRATION II – DIVIDEND DISCOUNT METHOD

Alpha Ltd is a company operating in a mature industry. Currently, its EPS is Rs. 6.75. Alpha's dividend payout ratio is 60% and ROE is 10% and both of these are expected to be the same in the near future. The beta of the company is 0.86. The treasury bill rate is 9.86% and the average return from the market is 15.26%.

Required:

Calculate the intrinsic value of Alpha Ltd using the Dividend Discount model.

Solution

To find out the intrinsic value we use the following formula:

$$\begin{aligned} P_0 &= (D_0 (1 + g)) / (k - g) \\ \text{a) } EPS_0 &= \text{Rs. } 6.75 \\ \text{Dividend payout} &= 60\% \\ &= \text{Rs. } 6.75 \times 0.60 \\ D_0 &= \text{Rs. } 4.05 \\ \text{(b) Growth} &= (1 - \text{dividend payment}) \times \text{ROE} \\ &= (1 - 0.6) \times 10\% \\ &= 0.4 \times 10\% \\ &= 4\% \\ \text{(c) } K &= R_f + \text{Beta} (R_m - R_f) \text{ (using CAPM)} \\ &= 0.0986 + 0.86 (0.1526 - 0.0986) \\ &= 14.504\% \end{aligned}$$

DISCOUNTED CASH FLOW METHOD

- ❑ Discounted Cash Flow method has its foundation in the present value concept and the time value of money.
- ❑ In this method the value of any asset is the present value of expected future cash flows that the asset generates.
- ❑ To carry out valuation in this method, we need to
 - (a) Estimate the life of the asset
 - (b) Estimate the cash flows during the life of the asset
 - (c) Estimate the discount rate to apply to these cash flows to get present value

NET ASSET VALUE METHOD

- ❑ The net asset value method estimates value as the net cash remaining if all assets are disposed of to get the best possible price for each asset and all liabilities are paid with the proceeds.
- ❑ Assets and liabilities are adjusted to their individual appraised values.
- ❑ The net result is the value arrived at for the total enterprise.

NET ASSET VALUE METHOD

The basic form of net asset valuation is shown below

Book value of assets		X
Less: Book value of liabilities		X
Book value of net assets		X
Less: Assets not taken over		X
Add: Liabilities not taken over		X
Add: Fair market value of assets taken over		X
Adjusted value of net assets	(A)	X
No. of shares	(B)	X
Value per share	$(A)/(B) = (C)$	X

ILLUSTRATION III – NET ASSET VALUE METHOD

Given below is the Balance Sheet of K Ltd as on 31.3.2023:

(Rs. in lakhs)

Liabilities	Amount	Assets	Amount
Share capital (Share of Rs.10)	100	Land & Building	40
Reserves and surplus	40	Plant & Machinery	80
Creditors	30	Investments	10
		Stock	20
		Debtors	15
		Cash at bank	5
	170		170

You are required to work out the value of the company's shares on the basis of net assets method and profit earning capacity (capitalisation) method and arrive at the fair price of the shares, by considering the following information:

- (a) Profit for the current year Rs.64 lakhs includes Rs.4 lakhs extraordinary income and Rs. 1 lakh income from investments of surplus funds; such surplus funds are unlikely to recur,
- (b) In subsequent years, additional advertisement expenses of Rs.5 lakhs are expected to be incurred each year
- (c) Market value of land & building and Plant & Machinery has been ascertained at Rs.96 lakhs and Rs.100 lakhs respectively. This will entail additional depreciation of Rs.6 lakhs each year.
- (d) Effective income tax rate is 30%
- (e) The capitalisation rate applicable to similar business is 16%.

ILLUSTRATION III – NET ASSET VALUE METHOD

Solution

Net Assets	Rs. in lakhs
Land & Building	96
Plant & Machinery	100
Investments	10
Stocks	20
Debtors	15
Cash at bank	5
Total Assets	246
Less: Creditors	30
Net Assets	216

Value per share

No. of shares = 100 lakhs/10 = 10 lakhs

Value per share = Net Asset/no. of shares

= Rs.216 lakhs/10 lakhs

= **Rs.21.60**

EARNINGS METHOD

- ❑ The earnings method includes capitalisation of earnings, capitalisation of excess earnings and present value of future earnings.
- ❑ The capitalisation of earnings method is among one of the most popular methods of valuation approaches.
- ❑ This method is generally in vogue when large blocks of shares are valued.

EARNINGS METHOD

In its basic form the earnings method would consider the following:

Particulars	Amount
Profit before tax	X
Less: Extra-ordinary income	x
Less: Investment income not likely to recur	x
Less: Additional expenses for forthcoming years - advertisement	x
Less: Depreciation	x
Expected earnings before taxes	X
Less: Income taxes at prescribed rate	X
Future maintainable profits (A)	X
Reasonable rate of return (capitalisation factor) (B)	X
Enterprise value (A)/(B) = (C)	X
No of shares (D)	X
Value per share (C)/(D) = (E)	X

ILLUSTRATION IV – EARNINGS METHOD

Solution

Using the same example as in Illustration III above we would calculate the Profit earning capacity method:

Profit earning capacity method:

Particulars	Rs. in lakhs
Profit before tax	64
Less: Extra-ordinary income	4
Less: Investment income not likely to recur	1
Less: Additional expenses for forthcoming years - advertisement	5
Less: Depreciation	6
Expected earnings before taxes	48
Less: Income taxes @ 30%	14.4
Future maintainable profits	33.6

$$\begin{aligned}\text{Value of business} &= \text{Future maintainable profit/Capitalisation factor} \\ &= 33.6/0.16 \\ &= \text{Rs.210 lakhs} \\ \text{Value per share} &= \text{Rs.21.00}\end{aligned}$$

RELATIVE VALUATION METHOD

- ❑ This method estimates the value of an asset by looking at the pricing of comparable.
- ❑ Assets relative to a common variable such as earnings, cash flows, book value or sales.
- ❑ Some important valuation matrix is shown below.

Quantity	X	Multiple	Value
Cash flow	X	Firm value/Cash flow of firm	Cash flow multiple = Value of firm
EBITDA	X	Firm value/EBITDA of firm	EBITDA multiple = Value of firm
Sales	X	Firm value/Sales value of firm	Sales multiple = Value of firm
Customers	X	Firm value/Customers	Customer multiple = Value of firm
Earnings	X	Price per share/earnings	Price earnings ratio = share price

RELATIVE VALUATION METHOD

Price/Earnings multiple – This measure is used in cases as under

- If valuation is being done for an IPO or a takeover,
 - Value of firm = Average Transaction P/E multiple × EPS of firm
 - Average Transaction multiple is the average multiple of recent transactions (IPO or takeover as the case may be)
- If valuation is being done to estimate firm value
 - Value of firm = Average P/E multiple in industry × EPS of firm
- This method can be used when
 - firms in the industry are profitable (have positive earnings)
 - firms in the industry have similar growth (more likely for “mature” industries)
 - firms in the industry have similar capital structure

RELATIVE VALUATION METHOD

Price to book Multiple

This is similar to P/E multiple method.

- **Since the book value of equity is essentially the amount of equity capital invested in the firm, this method measures the market value of each rupee of equity invested.**
- **This method can be used for**
 - **companies in the manufacturing sector which have significant capital requirements.**
 - **companies which are not in technical default (negative book value of equity)**

RELATIVE VALUATION METHOD

Revenue Multiple

This is a simple thumb rule measure, wherein enterprise value is measured. It can range from one-time revenue multiple to three times revenue – which varies from industry to industry.

RELATIVE VALUATION METHOD

EBITDA Multiple

- This multiple measures the enterprise value, which is the value of the business operations (as opposed to the value of the equity).
- In calculating enterprise value, only the operational value of the business is included.
- Value from investment activities, such as investment in treasury bills or bonds, or investment in stocks of other companies, is excluded.
- Since this method measures enterprise value it accounts for different
 - (a) capital structures
 - (b) cash and security holdings
- By evaluating cash flows prior to discretionary capital investments, this method provides a better estimate of value.
- Appropriate for valuing companies with large debt burden: while earnings might be negative, EBIT is likely to be positive.
- It gives a measure of cash flows that can be used to support debt payments in leveraged companies.
- Enterprise value can be ten to fifteen times EBITDA multiple – again it varies from industry to industry and best judgement.

RELATIVE VALUATION METHOD

Market Adjustments

- ❑ In adopting relative valuation principle, we need to bear in mind that the subject company we are valuing is unique and cannot be exactly the same as some other entity in the same industry.
- ❑ Hence it is imperative to carry out adjustments on a case to case basis based on best judgement.
- ❑ These adjustments need to be carried out in the broad areas as under:
 - Size
 - Growth Rate
 - Profitability
 - Leverage
 - Other Company Specific Factors
 - Discounts and Premiums

ILLUSTRATION V : RELATIVE VALUATION METHOD

A start-up health care company X is planning to go public. The financials of X along with similar companies in the same industry are as under:

Company	Value (Market cap) Rs. lakhs	Sales Rs. Lakhs	EBITDA Rs. Lakhs	Earnings Rs. lakhs	Sales multiple (Market cap/sales)
X	?	100	20	10	?
Y	2100	70	17	12	30
Z	3000	75	18	8	40

Since the three companies are similar and operate in the same industry, the company X can be valued at comparable multiples of Y and Z.

Accordingly, drawing from comparable multiples of Y and Z, the value of Company X would be anywhere between $30 \times 100 = \text{Rs.}3000$ lakhs to $40 \times 100 = \text{Rs.}4000$ lakhs. Investors and bankers would value the company within this range of Rs.30 crores and Rs.40 crores.

CONTINGENT CLAIM VALUATION METHOD

- ❑ This is a revolutionary valuation model used to value assets the cash flows of which are contingent on occurrence of a future event.
- ❑ The examples are, an unknown oil rig, development of pharmaceutical drug, development of new product, innovation. In each of these cases there is high risk and uncertainty involved.
- ❑ This method uses option pricing models to measure the value of assets that have share option characteristics also. Some of these assets are traded financial assets like warrants and some of these options are not traded and are based on real assets e.g. projects, patents and oil reserves as mentioned above.

CONTINGENT CLAIM VALUATION METHOD

A few areas are highlighted as important cases of contingent claim valuation.

These are:

Real options valuation	These options are valued as managerial rights and not obligations connected with projects to ensure that grow and expand with time and also abandon projects or assets after the investments are made.
Valuations of intangibles and brands	These valuations presuppose Identifiability and being separable. The three main approaches are: (a) Cost (b) Market value (c) Economic value
Valuation of Warrants	A warrant represents an option issued by a company to buy a stated number of shares of stock at a specified price. Warrants are generally distributed with debt or preferred stock to induce investors to buy those securities at lower cost. Most warrants are detachable – this signifies that these can be detached from the underlying security and traded separately.

ECONOMIC VALUE ADDED METHOD

- ❑ It is a performance metric that calculates the creation of shareholder value.
- ❑ It distinguishes itself from traditional financial performance metrics such as net profit and EPS.
- ❑ EVA is the calculation of what profits remain after the cost of company's capital – both debt and equity – is deducted from operating profit.

ILLUSTRATION VI : ECONOMIC VALUE ADDED

- ❑ C Ltd earned INR 10 million on a capital of INR 100 million. According to traditional accounting methods C Ltd has achieved a return of 10% on capital.
- ❑ However, if we go by C Ltd's debt obligations plus the rate of return which the investors demand, it works out to 14%, which happens to be the cost of capital. If we use this benchmark and apply on the capital base of INR 100 million, the company should have earned INR 14 million.
- ❑ Hence it has achieved INR 4 million short for the shareholders. Now if C Ltd would have earned say INR 20 million which is 20% return, it would have earned an EVA of INR 6 million.

FACTORS THAT AFFECT VALUATION

Internal factors	External factors
<ol style="list-style-type: none">1. Market for the products2. Market values of assets/liabilities3. Goodwill4. Rate of dividend declared5. Industrial relations with employees6. Nature of plant/machinery7. Expansion policies of the company8. Reputation of management	<ol style="list-style-type: none">1. Competition2. Technology development3. Relations with Government agencies4. Import/export policies5. Taxation matters6. Current state of economy7. Stability of Government in power

COMPARISON BETWEEN FUNDAMENTAL VALUATION AND RELATIVE VALUATION

Fundamental valuation	Relative valuation
<p>Fundamental valuations are calculated based on a company's fundamental economic parameters relevant to the company and its future. These are also alluded to as "standalone valuations".</p> <p>Under this method the principal determinants are:</p> <ul style="list-style-type: none">(a) cash flows: the cash flow to equity shareholders (dividends) or to both the equity shareholders and debtors (related to free cash flow)(b) Returns: the difference between company's return on net assets and weighted average cost of capital(c) Operational variables: Installed capacity, sales volume linked to capacity utilisation, projected market price in various verticals, cost structure etc.	<p>Relative valuations are evidenced by relative multiples which apply to a relation between specific financial or operational characteristic from a similar enterprise or an industry in which it belongs and is being valued.</p> <p>This method expresses the value of a company as a multiple of a specific statistic or a metrics.</p>



THANK YOU!