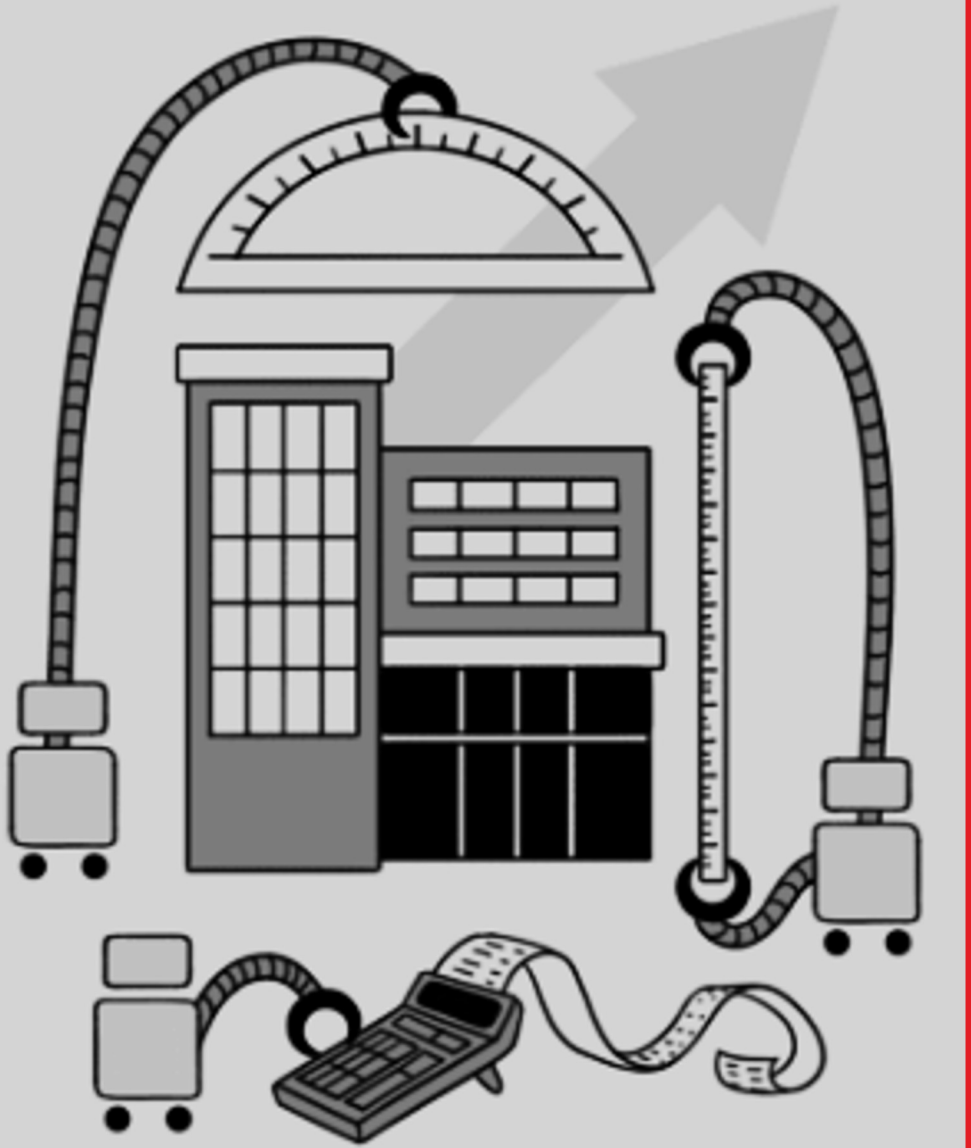


Valuation Approaches

What is Valuation ?

- Value of any asset is a **price** at which :
  - an arm's length transaction can take place
  - between a willing buyer and a willing seller
  - with both happy over the price paid and consideration received.

- Does price of an asset equal to its value ?

Price

It is determined by the demand, supply and momentum. It tells you what one is willing to pay

Value

It is determined by the cashflows, growth and risk

Price Vs Value

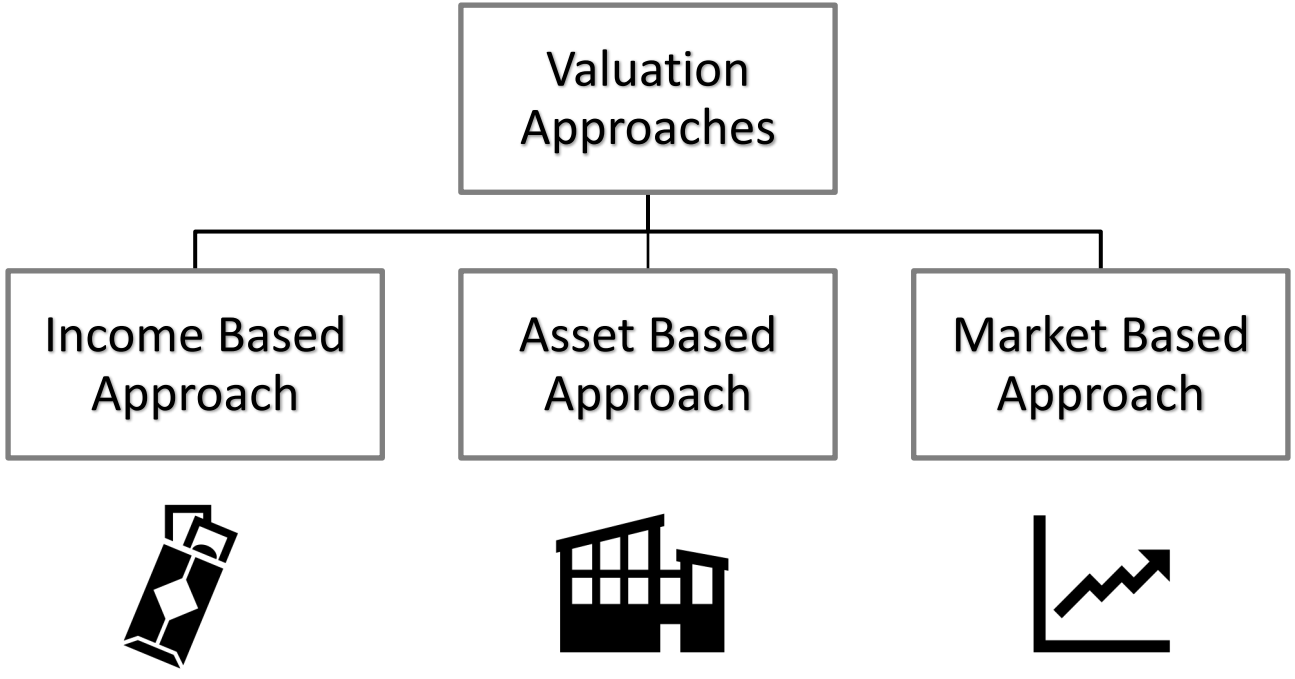
Value is the starting point to Price Negotiation.

Example : Open offer price vs Market Price as on that day

Company	Date	Open offer price	Last Traded Price	Difference
Unichem Laboratories	24-04-2023	440	375	17%
R Systems Internantional	16-11-2022	262	240	9%
ACC	15-05-2022	2,300	2,113	9%
Dhruva Capital Services	28-06-2023	55	51	8%
Ambuja	15-05-2022	385	359	7%
Suven Pharmaceuticals	26-12-2022	495	496	0%
Eveready Industries India	28-02-2022	320	340	-6%
Cupid	09-09-2023	325	397	-18%

Open offer price is price at which existing shareholders have a **right to sell their shares** to the **acquirer in case of a merger**

Methods of Valuation



Discounted Cashflow Method (DCF)

What is DCF ?

- Based on **projected cash flows** to determine **present value** of business on going concern assumption.
- Recognizes the **time value of money** by discounting **cash flows for forecast period**, and **perpetuity value** at appropriate discount factor.
- Gives summation of the value in the **growth and steady phase**.
- The value in the steady phase is captured in form of **terminal value**.
- This approach should be used for entities which
  - Generate positive cashflows
  - Have visibility of future cashflows

Pros and Cons of DCF

Pros :-

- Captures future **cash flow generation capacity**
- Allows for **flexibility** in assumptions making.

Cons :-

- Financial models can be **complex to design**.
- **Sensitive** to projections it relies on.
- Does not capture value given by market to "**comparable**" companies

How to do a DCF ? [Practically]

Projections

- **Management** of company would **prepare projections.**

- Time span for explicit period should be a **minimum of 5 years.**

- **Maximum period should be based on judgement**:
  - Manufacturing concerns : 5 years
  - Stable business (FMCG) : 10 years
  - Solar projects / Limited life period : Actual life of project

- Check projections for **consistency with historical values:**
  - Sales growth, EBITDA Margins, Working cap cycle, Capex assumptions etc.

Calculating FCFF / FCFE

- Decide whether to use FCFF / FCFE
  - **FCFF** used when **capital structure are not constant**
  - **FCFE** when capital **structure are constant**

- Calculating cashflow as decided above
  - Check correctness by preparing a **reconciliation with cashflow**
  - Check for **consistency within cashflows**
    - Growing sales would need **higher working capital** and **capex**
    - **Repayment of loans** should also result in **lower interest**

Terminal Value

- Terminal value estimation is very important and could account for **70% to 80% of value**
- Terminal growth should ideally be a) expected rate of **GDP growth rate**, or
  b) long term industry growth rate
- Terminal growth should **ONLY** be applied **to Sales** and **not cashflow**
- Points to consider :
  - **Working capital requirement** – considering nominal growth
  - **Capex and depreciation** – should be equal for terminal calculation
  - **Terminal margin** – should be confidently achievable
- Terminal value can also be calculated using **EXIT multiple** (similar to CCM)

Discount Rates

- Discount rates should take into consideration :

- **Risk-free rate** - should be of **country from which business risk arises**
  - can use **10yr Govt bond yield** [Most liquid instrument] for India
  - customers global but manufacturing in India, risk free rate could be **weighted average risk-free rate.**

- **Beta** - comparables should be **susceptible to same risks as target**
  - beta to be used **after relevering** basis target's debt/equity
  - comparables should be **listed long** enough (usually 5 years)

- **Risk premium** - discount for **Marketability** and **Illiquidity** is must
  - valuer to use judgement to give further discount/premium basis financial metrics compared to comparables

Calculating Present Value

- Time period for discounting can be taken as:
  - Mid period - since we **do not know exact timing** of cashflows
  - End period – **simplistic approach**

- Valuation Date
  - Date at which valuation is required, **mostly Report date**
  - **Different from balance sheet date**

- Stub period -
  - **Valuation date after balance sheet date** then business would have generated actual cash as on report date thus
  - value arrived would need to he **compounded at WACC / Cost of equity**
  - **for proportionate period** to solve for increase in value

Adjustments

- To arrive at the equity value, enterprise value arrived using DCF method should be **adjusted** for **debt and debt-like items** if any and **surplus assets**.

- **Debt like items include :**
  - Long term debt
  - Short term debt
  - Lease Liability
  - Undistributed dividend

- **Surplus assets (at Fair value) include :**
  - Long term investments
  - Short term investments
  - Cash & cash equivalents
  - Investment property

Special Situations

- **Negative Working Capital (WC) :**   **[FMCG, Classes]**
  - Credit from vendors is higher compared to inventory and receivable.
  - Negative WC throughout the projection period :
    - Ignore net WC changes , and
    - **Deduct the opening negative WC** while arriving at enterprise value

- **H – Model :**  **[High Growth]**
  - When explicit period **growth rate very high** (~ > 20%), can use H Model.
  - **Stabilizes the growth rate** over time, rather than abruptly changing.
  - Assumes that the **growth rate will fall linearly.**
  - **Quantitative** method; similar to the two-stage dividend discount model.

Challenges While Valuing Using DCF

- Projections **might not capture entire** business **cycle**.
- **Management bias** leading to optimistic projections.
- Cases where **no historical backing available** for projections.
- **Lack of industry data** for niche businesses.
- **Difficult to model** high growth / cyclical business.
- Business which generates revenues / profits from **multiple countries**.
- **No standardization** of assumptions.

Snapshot of DCF for a listed company

Snapshot of DCF for a listed company

Butterfly Gandhimathi Appliances Limited *[NSE:BUTTERFLY]*

(i) – Value per equity share of Butterfly as per Discounted Cash Flow Method

Currency: ₹ mn	Notes	Mar23	Mar24	Mar25	Mar26	Mar27	Mar28
Number of months		3	12	12	12	12	12
Net sales		2,091	12,807	15,078	17,601	20,159	22,778
Cost of goods sold		(1,291)	(8,086)	(9,512)	(11,106)	(12,700)	(14,350)
Gross profit		800	4,721	5,566	6,495	7,459	8,428
Operating expenses		(688)	(3,565)	(4,110)	(4,694)	(5,303)	(5,939)
EBITDA		111	1,156	1,456	1,801	2,156	2,489
Depreciation and amortisation		(50)	(181)	(190)	(235)	(274)	(279)
EBIT		61	975	1,266	1,566	1,882	2,210
Tax expense		(16)	(247)	(320)	(395)	(475)	(557)
Debt free net income		45	728	946	1,170	1,407	1,653
Add: Depreciation and amortisation		50	181	190	235	274	279
(Increase)/ Decrease in net working capital		(270)	(270)	(22)	(11)	(60)	(64)
Less: Capital expenditure		(123)	(275)	(215)	(813)	(204)	(412)
Debt free cash flow		(297)	612	911	532	1,412	1,458
Discount rate (%)	1.1	13.69	13.69	13.69	13.69	13.69	13.69
Present value factor- Mid year discounting		0.98	0.98	0.91	0.80	0.70	0.62
Present value factor- Year end discounting		0.97	0.97	0.85	0.75	0.66	0.58
Present value debt free cash flow		(292)	556	728	374	873	793

Snapshot of DCF for a listed company

Per share equity value calculation

Present value factor for terminal year		0.54
Present value for explicit period		3,031
Present value of terminal period	1.2	22,211
Enterprise value		**25,241**
Stub period compounding factor	1.3	1.03
Enterprise value as at the valuation date		**25,980**
Contingent liabilities	1.4	(20)
Less: Present value of lease liability	1.5	(27)
Advance tax (net of provision)		32
Adjusted enterprise value		**25,965**
Less: Gross debt		(7)
Add: Investment		4
Add: Cash and cash equivalents		963
Equity value		**26,925**
Diluted number of equity shares (in million)		18
Value per equity share (₹ / share)		**1,505.9**

Snapshot of DCF for a listed company

Discount rate calculation :

Working Note 1.1: Discount Rate

Particulars	Notes	Value
Risk-free rate (%)	A	7.5
Beta	B	0.88
Equity market risk premium (%)	C	7.0
Cost of equity capital / WACC(%)	**D**	**13.7**

Working Note 1.1.1: Beta Calculation

Currency: ₹ mn Name of Companies*		Equity beta@	Market capitalisation	Net debt^	Enterprise value	Debt-equity ratio based on 3 year average	Effective tax rate (%)	Unlevered beta	Relevered beta	Weight (%)
Bajaj Electricals Ltd		1.12	1,24,198	(3,055)	1,21,143	14.94	25.17	1.00	1.00	
TTK Prestige Ltd		0.77	98,151	(6,767)	91,385	(3.88)	25.17	0.79	0.79	
Average	A								**0.90**	50%
Butterfly	B	1.08	21,924	(960)	20,964	31.46	25.17	0.87	0.87	50%
Average of A and B									**0.88**	

Snapshot of DCF for a listed company

Calculation of Terminal value

Working Note 1.2: Calculation of Present value of terminal period based on exit multiple

Currency: ₹ mn	Notes	Values
EV/EBITDA multiple of comparable companies	1.1	23.3
Less: Discount	1.2	25%
Multiple after discount		**17.46**
EBITDA of FY28		2,496
Value of terminal period		**43,564**
Present value factor- Year end discounting of FY28		0.51
Present value of terminal period		**22,211**

Market Based Approach

What is Market Based Approach ?

- Based on **"Comparable" companies or transactions** those have been **priced** *(not valued)* in the market.
- Does not capture future cash generation capabilities.
- This approach should be used for entities where :
  - Comparable companies / transactions are available in the market.
  - Entity does not generate cash.
  - Difficult to project future cashflows.

Pros and Cons of Market Based Approach

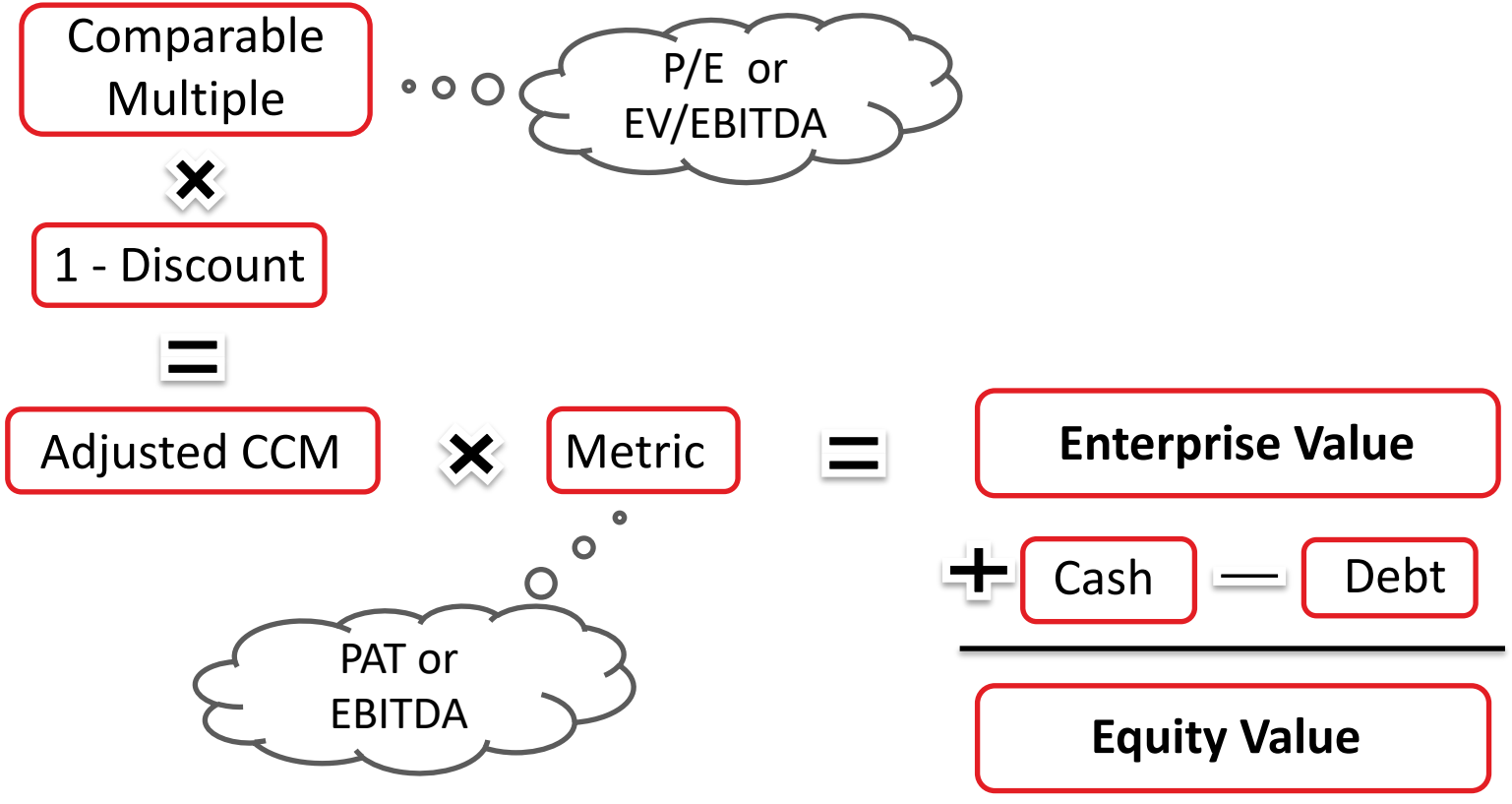
Pros :-

- **Simple & easy** to understand.
- Incorporates **multiple factors** such as industry trends, market conditions and financial performance.

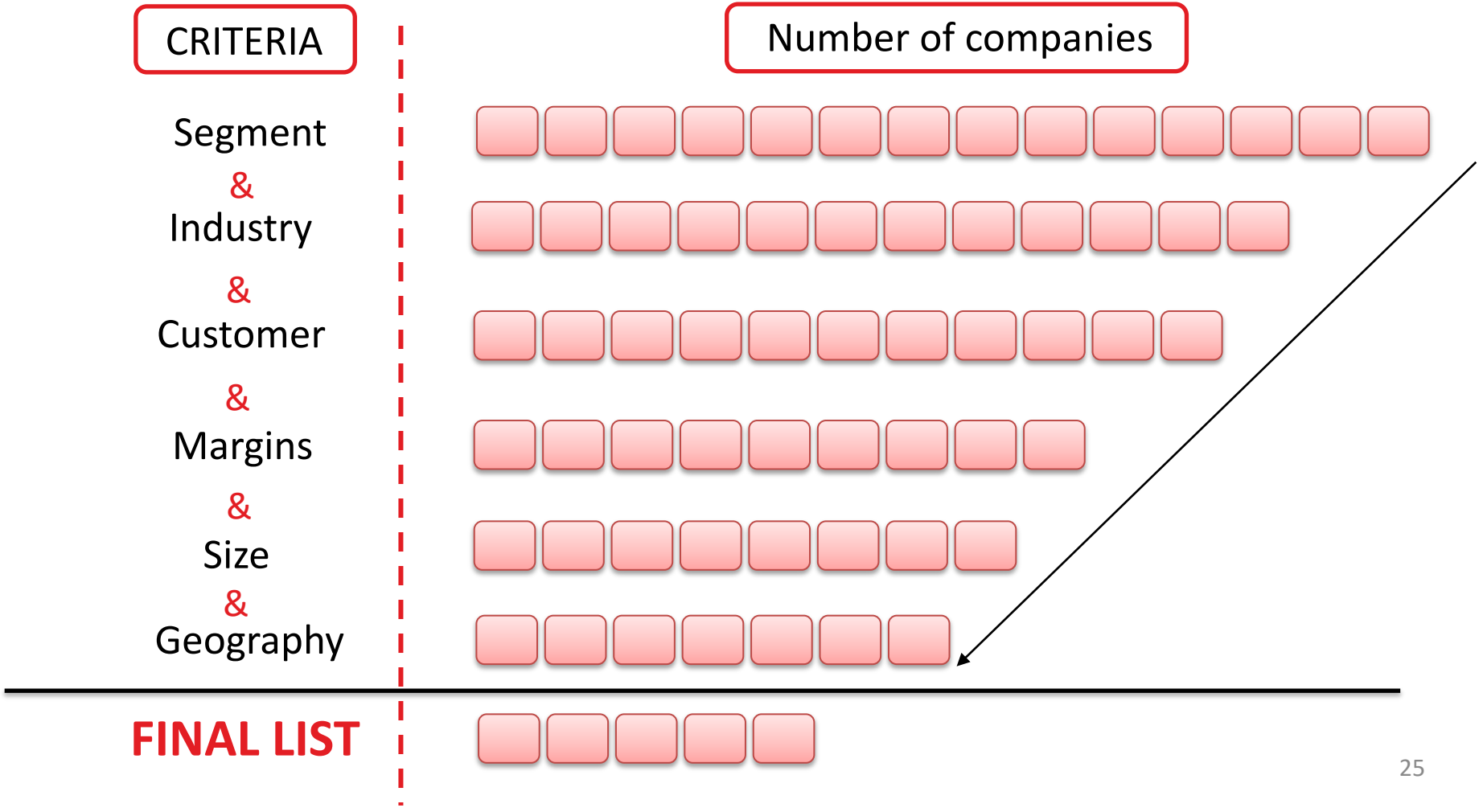
Cons :-

- Availability of comparable data can be **challenging**.
- **Doesn't consider future potential.**

Quick Example



How to Filter Comparable Company / Transaction



How to Apply Comparable Company / Transaction Multiple

***Step 1 :* Understand Target Company's business**

- Understand what is the business of Target.
- Business **segment**, **size**, **margins**, **ratios**, etc.

Step 2 : Select comparable company using filter mentioned above

Step 3 : Adjust for Target Company specific discount / premium on multiple calculated

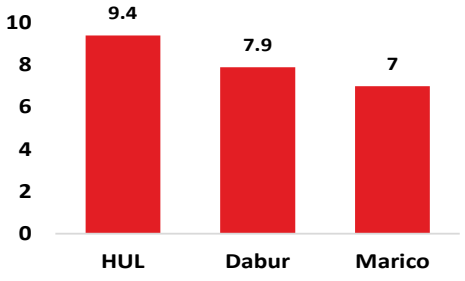
- **Adjust for difference** between Target and comparable such as:
  - Country,
  - Financial performance,
  - Size, etc.

Different Multiples Which Can Be Used

- **General Ratios**

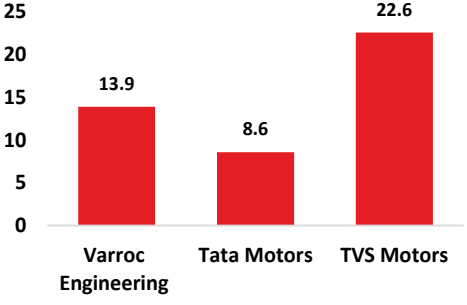
EV / Revenue

FMCG



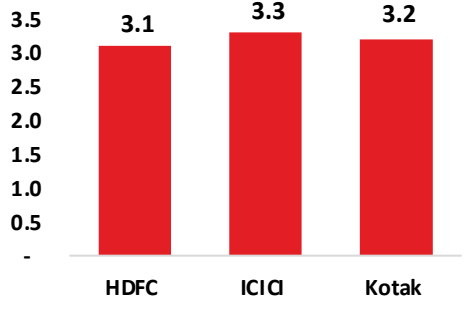
EV / EBITDA

Manufacturing



Price / Book

Banking Industry

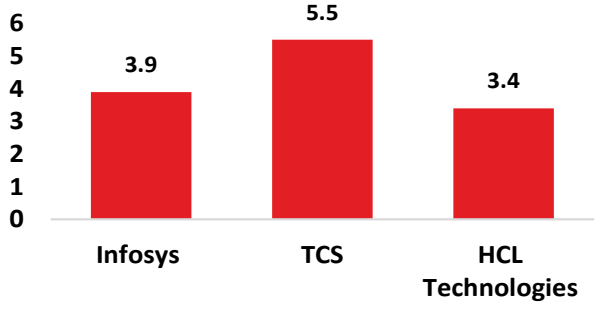


Different Multiples Which Can Be Used

- **General Ratios**

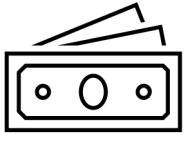
Price / Sales

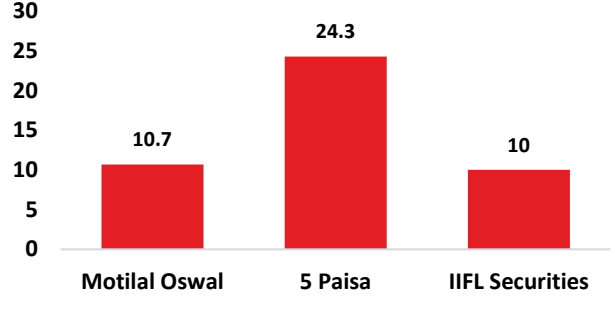
Information Technology



Price / Earning

Brokerage





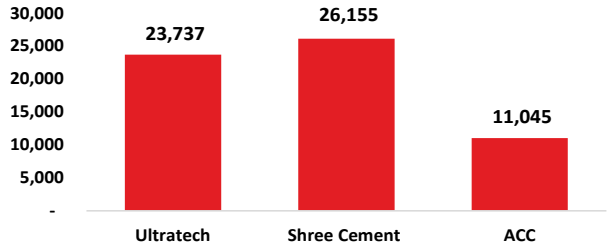
Different Multiples Which Can Be Used

- **Industry Specific Ratios**

EV / Tonne

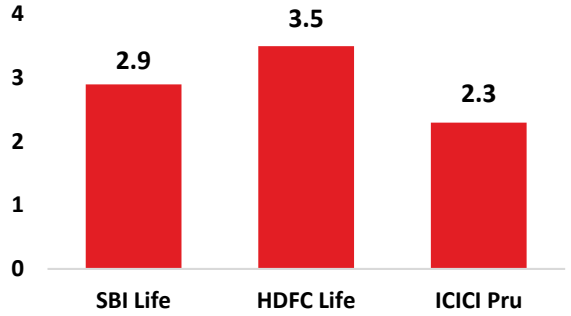
Cement Industry

Abs



EV / GWP

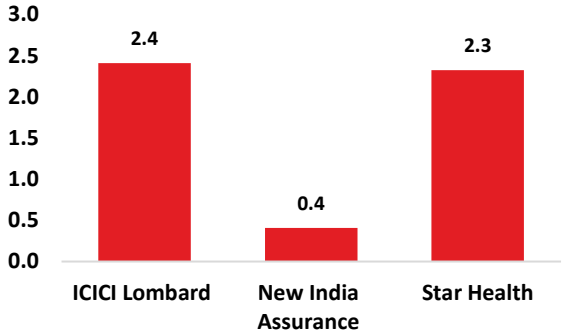
General Insurance



GWP : Gross Written Premium

Price / Embedded Value

Life Insurance

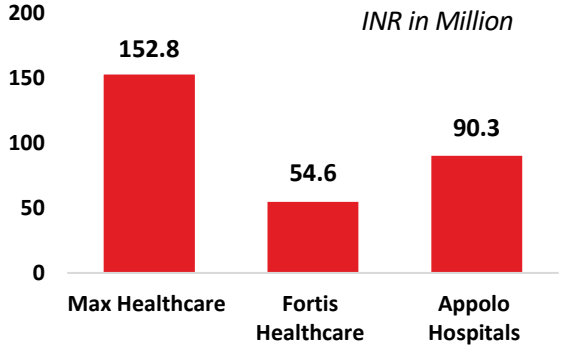


Different Multiples Which Can Be Used

- **Industry Specific Ratios**

EV / Bed

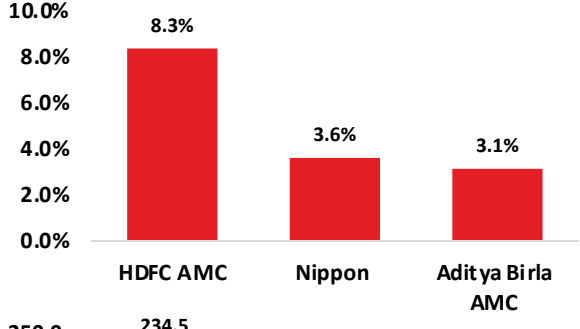
Hospitals



Price / AUM

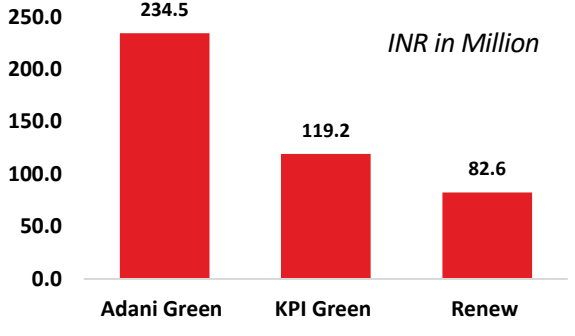
AUM : Assets Under Management

Asset Management Company



EV / Megawatt

Solar and Wind energy



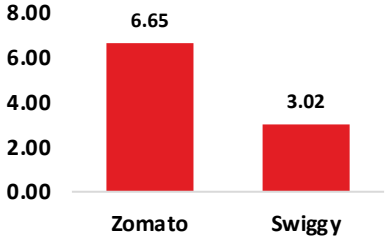
Different Multiples Which Can Be Used

- **Industry Specific Ratios**

EV / GMV

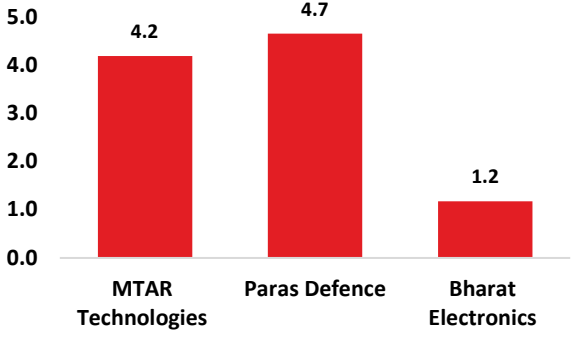
GMV : Gross Merchandise Value

Order based companies



EV / Order book

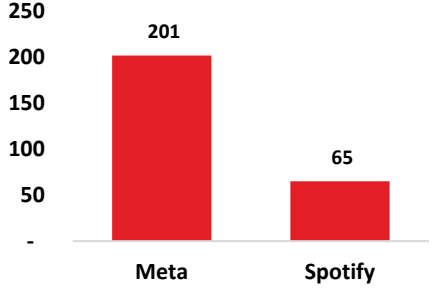
Defence Industry



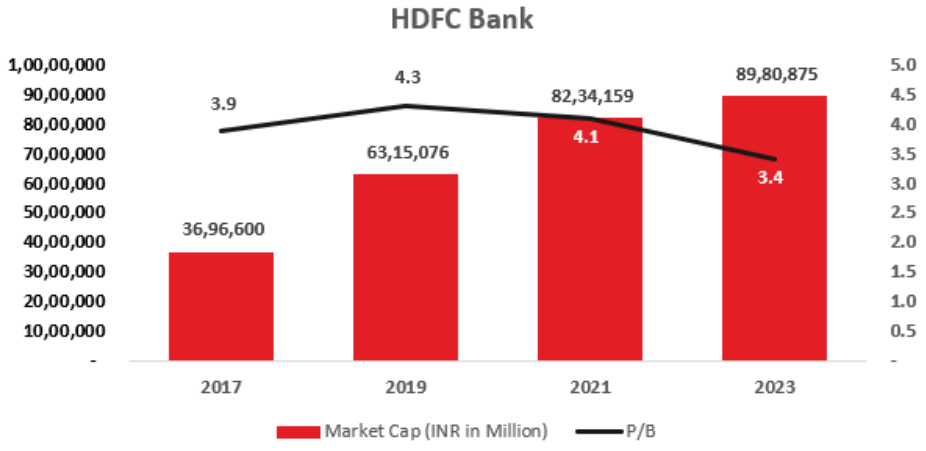
EV / MAU

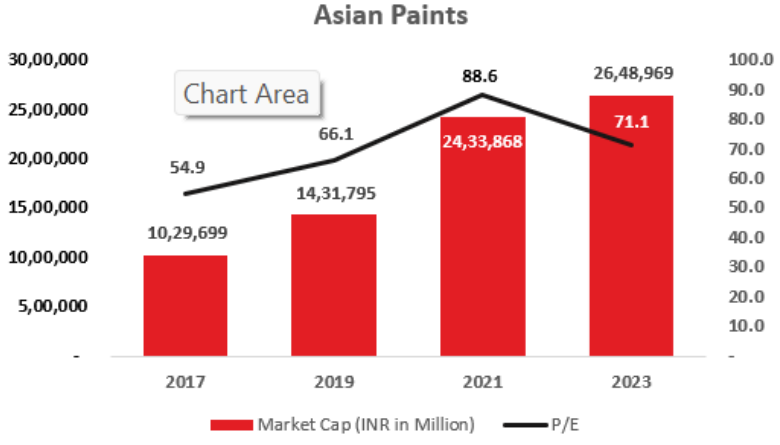
MAU : Monthly Active Users

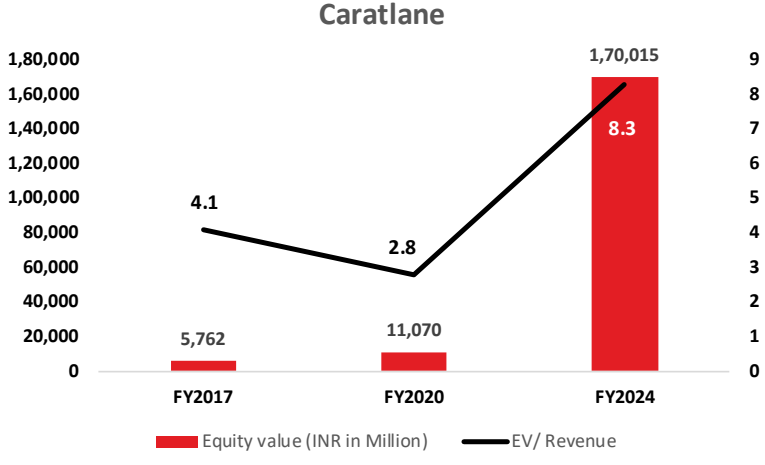
Online Platform



Valuation and Multiple Over the Years







Factors For Discount / Premium (CCM)

CCM

- **size and diversity** of entities
- **rate of growth** of earnings;
- business metrics like **margins and ratios**
- reliance on **key employees**;
- diversity of the **product ranges**;
- diversity and quality of **customer base**;
- **level of borrowing**;
- any other reason quality of earnings may differ; and
- **lack of liquidity**

CTM

- **Life cycle of company** considered as comparable;
- Whether comparable company is **profit making or loss making**;
- **Size** of comparable company;
- Transaction in **primary or secondary market**;
- Transaction undertaken was for which **round of investment**;
- **Instrument subscribed** to;
- Whether transaction for **controlling or minority stake**;

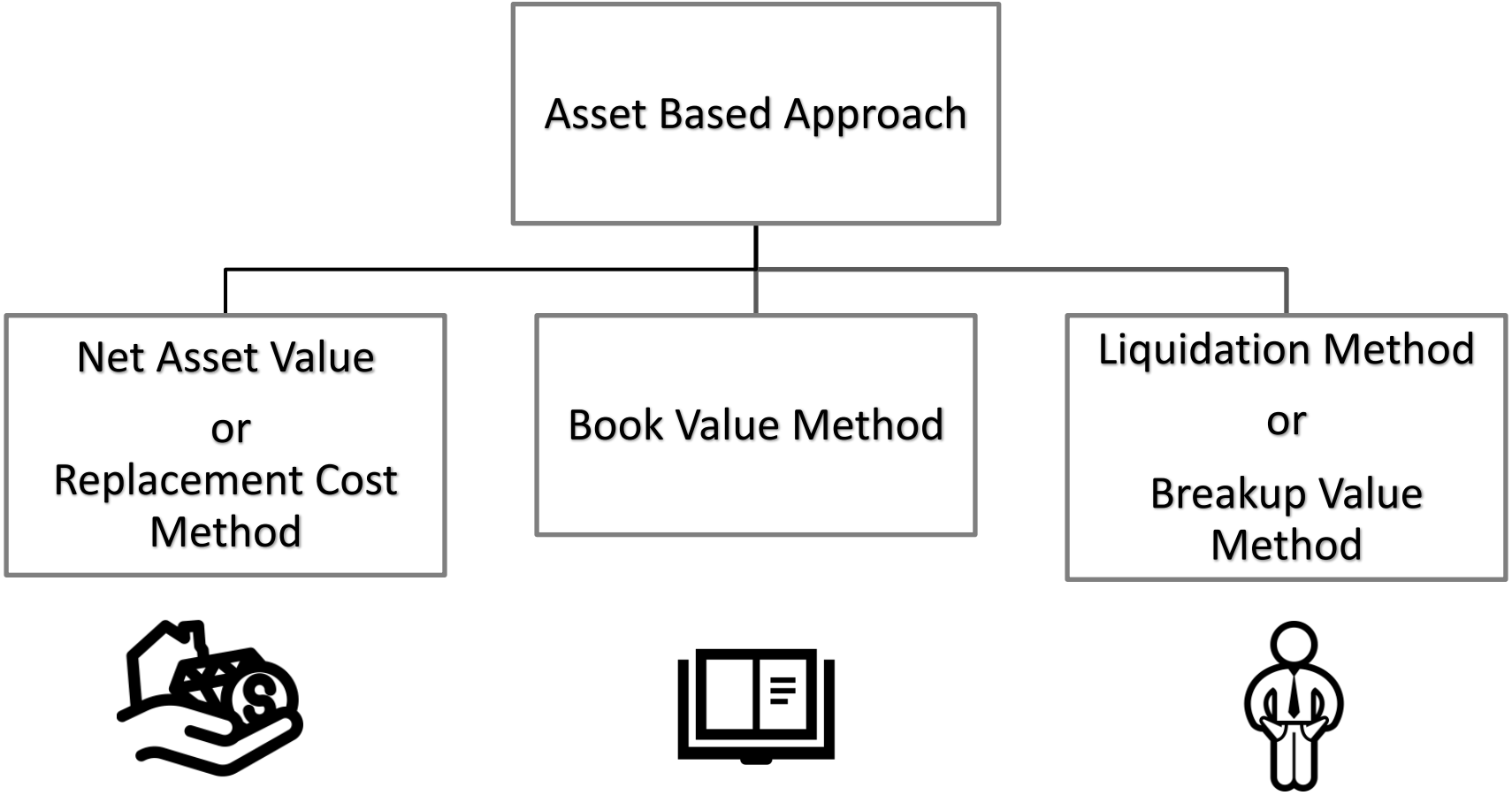
Sources For CCM & CTM

- Following is a list of sources which can be used to find data for CCM and CTM.

CapIQ	S&P Capital IQ	https://www.capitaliq.com
VCC Edge	VCC EDGE	https://www.vccedge.com/
Crunchbase	crunchbase	https://www.crunchbase.com/
Tracxn	Tracxn	https://tracxn.com/
Capitaline	CAPITALINE DATABASES	https://www.capitaline.com/
moneycontrol	moneycontrol	https://www.moneycontrol.com/

Asset Based Approach

Asset Based Approach



What are Asset Based Approaches ?

- **Net Asset Value Method or Replacement Cost Method :**
  - Value of the company **on basis of assets.**
  - After adjusting for **mark up or mark down.**
  - Does not capture any future cash generating capability.
  - Cost to acquire or reproduce it in the current market.
- **Book Value Method :**
  - Total assets minus total liabilities to determiner owner's equity.
  - Excludes any **off - balance sheet items**.
- **Liquidation Method :**
  - Realizable on sale of the enterprise.
  - '**Distress sale**' or an '**orderly sale**'.

Pros and Cons of Asset Based Approach

Pros :-

- Provides **conservative estimate** of company's value.
- Useful for valuing **distressed companies**.

Cons :-

- May not accurately reflect the **market value**, as it focuses solely on value of assets.
- Doesn't consider company's **future earning potential**.

Conditions Where NAV is Preferable

Criteria

- does not meet "**going concern**" criteria
- assets base dominate **earnings capability**
- **loss making**
- **volatile earnings/cash history**

Examples

VIDEOCON

IL&FS

ZEELEARN

BAJAJ HOLDINGS & INVESTMENT LTD

MAHARASHTRA SCOOTERS LTD.

TATA INVESTMENT CORPORATION

JET AIRWAYS

The Sirpur Paper Mills Ltd.

PCJ Jeweller for generations PC Jeweller

TATA STEEL

bajaj SUGAR

The India Cements Ltd

Situations Where NAV is Used

- **Insolvency proceedings**, valuation under IBBI.
- NAV for a going concern business should be lower than its DCF value.
- Company is about to **start operations**.
- Company is **shutting operations** and closing down.

Different Perspectives of Asset Based Approach

Particulars	NAV	Book Value	Liquidation
❖ Going Concern Assumption	Yes	Yes	No
❖ Hypothetical value for the same company	100 Cr.	80 Cr.	60 Cr.

Example for NAV

INR in Million

S.No.	Particulars	Book Value	Fair value
A	**Value of Assets**		
	Non current assets		
	Property, plant and equipments		
	Land and Building	153.0	302.0
	Plant & Machinery	247.0	312.0
	Other Fixed Assets	0.3	0.3
	Investments	779.8	1,250.0
	Deferred Tax Assets	1.0	1.0
	Current assets		
	Trade receivables	19.0	19.0
	Cash and cash equivalents	1.6	1.6
	Other current assets	0.1	0.1
	Total assets (A)	**1,201.8**	**1,886.0**
B	**Value of liabilities**		
	Current liabilities		
	Borrowings	38.7	38.7
	Other financial liabilities	21.9	21.9
	Current tax liabilities	6.5	6.5
	Total Liabilties (B)	**67.2**	**67.2**
C	**Networth [(C)=(A)-(B)]**	**1,134.6**	
	NAV attributable to equity shareholders [(C)=(A)-(B)]		**1,818.8**

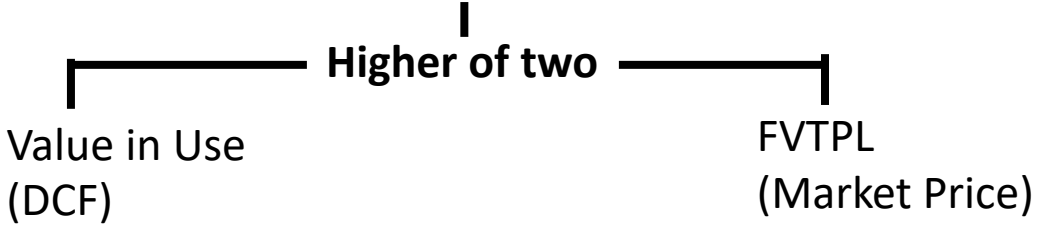
Valuation approaches under different laws

Approaches to Valuation in Different Statutes

Ind AS refers to valuation in 3 instances:

- **Fair value for Business Combination / Purchase Price Allocation**.
  For these cases Ind AS suggests to use
  - Level 1 (Market Price)
  - Level 2 (CCM / CTM)
  - Level 3 DCF

  in that order
- **Impairment testing** – Lower of Recoverable amount and Carrying value.



- **ESOPs** – where Ind AS states use of **option pricing models**

Approaches to Valuation in Different Statutes

Particulars	DCF	CCM	NAV	Market price	Remarks
Income Tax					
56(2)(viib)	✓	✓	✓	✓	Adjusted NAV as per Income Tax rules
56(2)(x), 50CA	✗	✗	✓	✓	
FEMA					
Internationally accepted approaches	✓	✓	✓	✓	Use approach using case specific information
SEBI	✓	✓	✓	✓	Reason is needed for non selection of any specific method

Practical examples of Valuation approaches

General Multiples of Top 10 companies

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Source : CapIQ

Approaches Used in Top 5 Merger / Demerger

Merger & Demerger	DCF	CCM	NAV	Market price
HDFC & HDFC Bank	✗	✓	✗	✓
LTI & Mindtree	✓	✓	✗	✓
PVR & INOX	✓	✓	✗	✓
Zee & Sony	✓	✓	✗	✓
Piramal enterprises ltd and Piramal Pharma ltd	✗	✓	✓	✗

Snapshot of Valuation Report

- At the time of merger of LTI and Mindtree, to arrive at a share exchange ratio valuer has used the following methods –

Valuation Approach	Mindtree (A)		LTI (B)	
	Value per Share of Mindtree (INR)	Weight	Value per Share of LTI (INR)	Weight
Cost/Asset Approach	NA	NA	NA	NA
Income Approach – DCF Method (i)	3,427	33.33%	4,847	33.33%
Market Approach				
Market Price method (ii)	3,638	33.33%	4,935	33.33%
Multiples method (iii)	3,667	33.33%	4,926	33.33%
Relative Value per Share (Weighted Average of (i),(ii) and (iii)	**3,577**		**4,903**	
Fair Equity Share Exchange Ratio (A/B) (Rounded)	0.73			

- *Source – Mindtree ltd*

Difference in values derived from various methods and market price

TCNS Clothing company		
Method	**Value**	**Difference**
Market price	491	1.7%
NAV	NA	-
CCM	**483**	0.0%
CTM	502	3.9%
DCF	NA	-

ICICI Securities		
Method	**Value**	**Difference**
DCF	690	12.6%
CCM	728	18.8%
Market price	**613**	0.0%
CTM	NA	-
NAV	95	-84.5%

HDFC		
Method	**Value**	**Difference**
DCF	NA	-
CCM	2,718	1.4%
Market price	**2,680**	0.0%
CTM	NA	-
NAV	NA	-

Inox Wind Energy		
Method	**Value**	**Difference**
DCF	NA	-
CCM	NA	-
Market price	**1818**	0.0%
CTM	NA	-
NAV	2,206	21.3%

Inox Leisure		
Method	**Value**	**Difference**
DCF	596	14.0%
CCM	489	-6.5%
Market price	**523**	0.0%
CTM	NA	-
NAV	NA	-

Bhushan Steel		
Method	**Value**	**Difference**
CCM	NA	-
DCF	37	14.7%
Market price	**33**	0.0%
CTM	NA	-
NAV	NA	-

Mindtree		
Method	**Value**	**Difference**
DCF	4,064	27.2%
CCM	3,489	9.2%
Market price	**3,195**	0.0%
CTM	NA	-
NAV	NA	-

IDFC		
Method	**Value**	**Difference**
DCF	NA	-
CCM	NA	-
Market price	**109**	0.0%
CTM	NA	-
NAV	127	16.5%

Food for Thought

Different Approaches		Used In
• Calibration	→	• Startup Valuation
• Multi-Period Excess Earnings Method (MPEEM)	→	• Intangible Valuation
• Back solve	→	• Multiple Convertible Instruments
• Black-Scholes Model	→	• Option Valuation
• Monte Carlo	→	• Contingent Payoffs
• Probability-Weighted Expected Return Method	→	• Startup Valuation

Thank You!