Case studies on Valuation

- For Bangalore Branch of SIRC of The Institute of Chartered Accountants of India

Disclaimer: This presentation captures the personal views / approaches / understanding of the presenter and does not necessarily represent the views of any organization. Case studies are based on hypothetical numbers and meant for illustration purposes only.

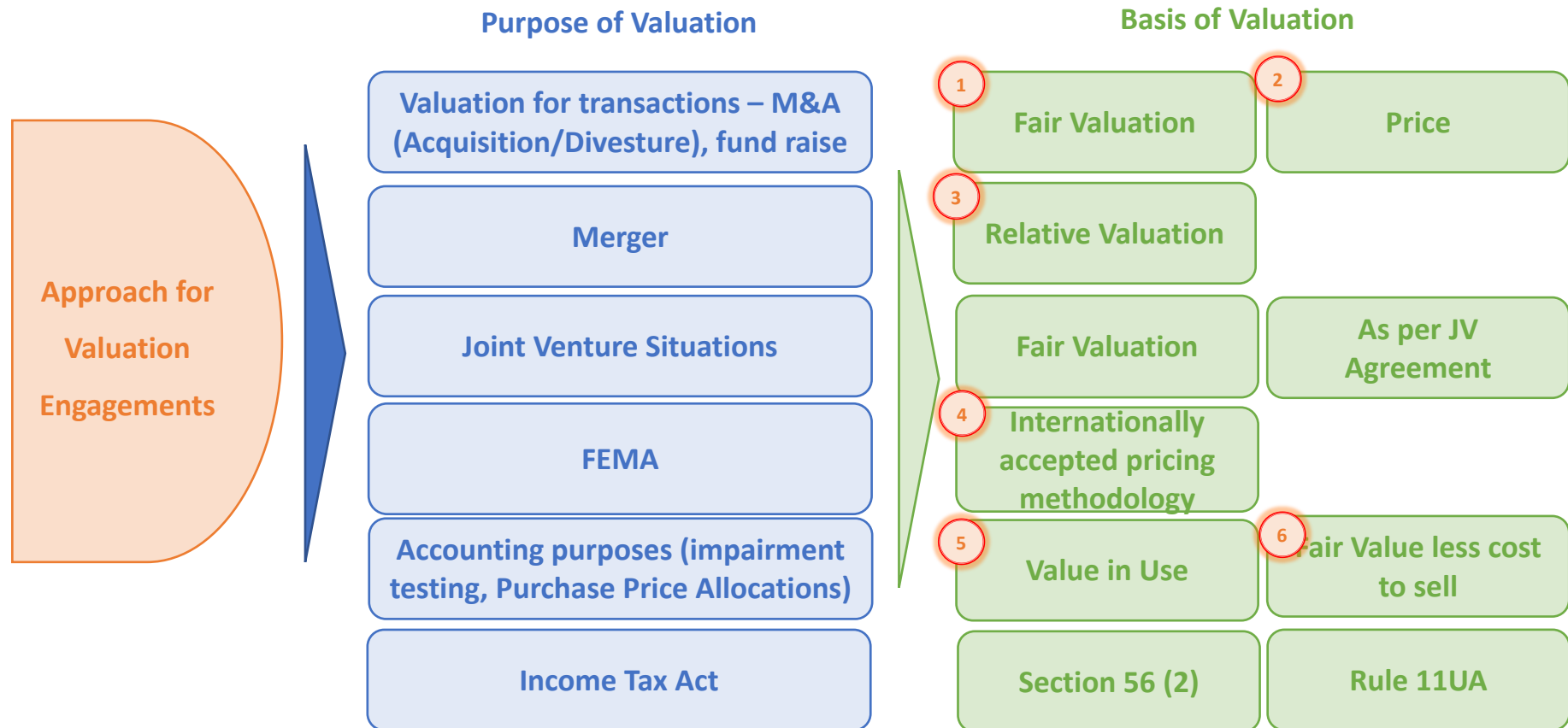# Objective and Scope of ICAI Valuation Standards

Objective

- Standardise the various principles, practices and procedures followed by Registered Valuer and other valuation professionals in valuation of assets, liabilities or a business
- Set out concepts, principles and procedures which are generally accepted internationally having regard to legal framework and practices prevalent in India
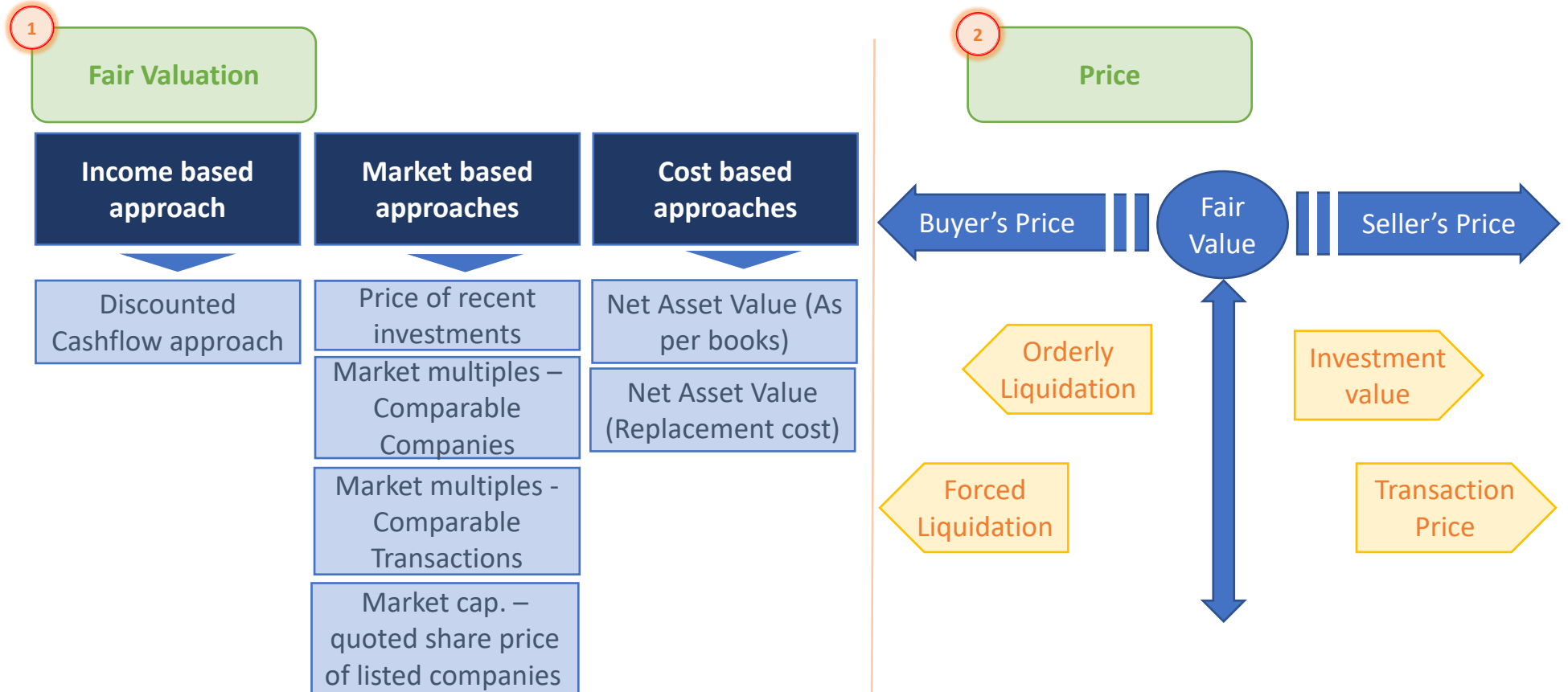
Scope

- Registered Valuer registered with the Registering Authority under Section 247 of the Companies Act 2013 and Rules made thereunder for carrying out valuation of assets belonging to a class or classes of assets
- Valuer also includes a valuer undertaking valuation engagement under other Statutes like Income Tax, SEBI, FEMA, RBI etc

'Basis of Valuation' is normally determined by the purpose

Purpose of Valuation

Approach for Valuation Engagements

- Valuation for transactions – M&A (Acquisition/Divesture), fund raise
- Merger
- Joint Venture Situations
- FEMA
- Accounting purposes (impairment testing, Purchase Price Allocations)
- Income Tax Act

Basis of Valuation

1. Fair Valuation
2. Price
3. Relative Valuation
- Fair Valuation | As per JV Agreement
4. Internationally accepted pricing methodology
5. Value in Use | 6. Fair Value less cost to sell
- Section 56 (2) | Rule 11UA

'Basis of valuation' – Fair valuation Vs Price

①

Fair Valuation

Income based approach	Market based approaches	Cost based approaches
Discounted Cashflow approach	Price of recent investments	Net Asset Value (As per books)
	Market multiples – Comparable Companies	Net Asset Value (Replacement cost)
	Market multiples - Comparable Transactions	
	Market cap. – quoted share price of listed companies	

②

Price

Buyer's Price ← **Fair Value** → Seller's Price

Orderly Liquidation

Investment value

Forced Liquidation

Transaction Price

'Basis of Valuation' – Regulatory and accounting requirements

3 Relative Valuation

Relative values are usually derived by using similar valuation approaches, methodologies and weightages. Use of differing methodologies or approaches may be justified in some circumstances, e.g., merger of a listed company and an unlisted company where market price method would be relevant only for the listed company

4 Internationally accepted pricing methodology

No specific definition so fair value is adopted

5 Value in Use

Valuation if the asset continues to operate in the current state – i.e. this basis estimates valuation without considering any incremental capex in the Management Business Plan / Free Cashflows

6 Fair Value less cost to sell

Fair valuation less estimated cost to sell the Business

Valuation methodologies for intangible assets / financial instruments

7 **Relief from Royalty**

A method in which the value of the asset is estimated based on the present value of royalty payments saved by owning the asset instead of taking it on lease It is generally adopted for valuing intangible assets that are subject to licensing, such as trademarks, patents, brands, etc.

8 **Multi period Excess Earnings**

- *MEEM* is generally used for valuing most significant intangible asset out of group of intangible assets being valued
- Intangible assets which have a finite life can only be used to value using MEEM
- The value is equal to the present value of the incremental after-tax cash flows ('excess earnings') attributable to the intangible asset to be valued over its remaining useful life

9 **With and Without**

Intangible asset to be valued is equal to the present value of the difference between the projected cash flows over the remaining useful life of the asset under the following two scenarios:
>> With intangible asset
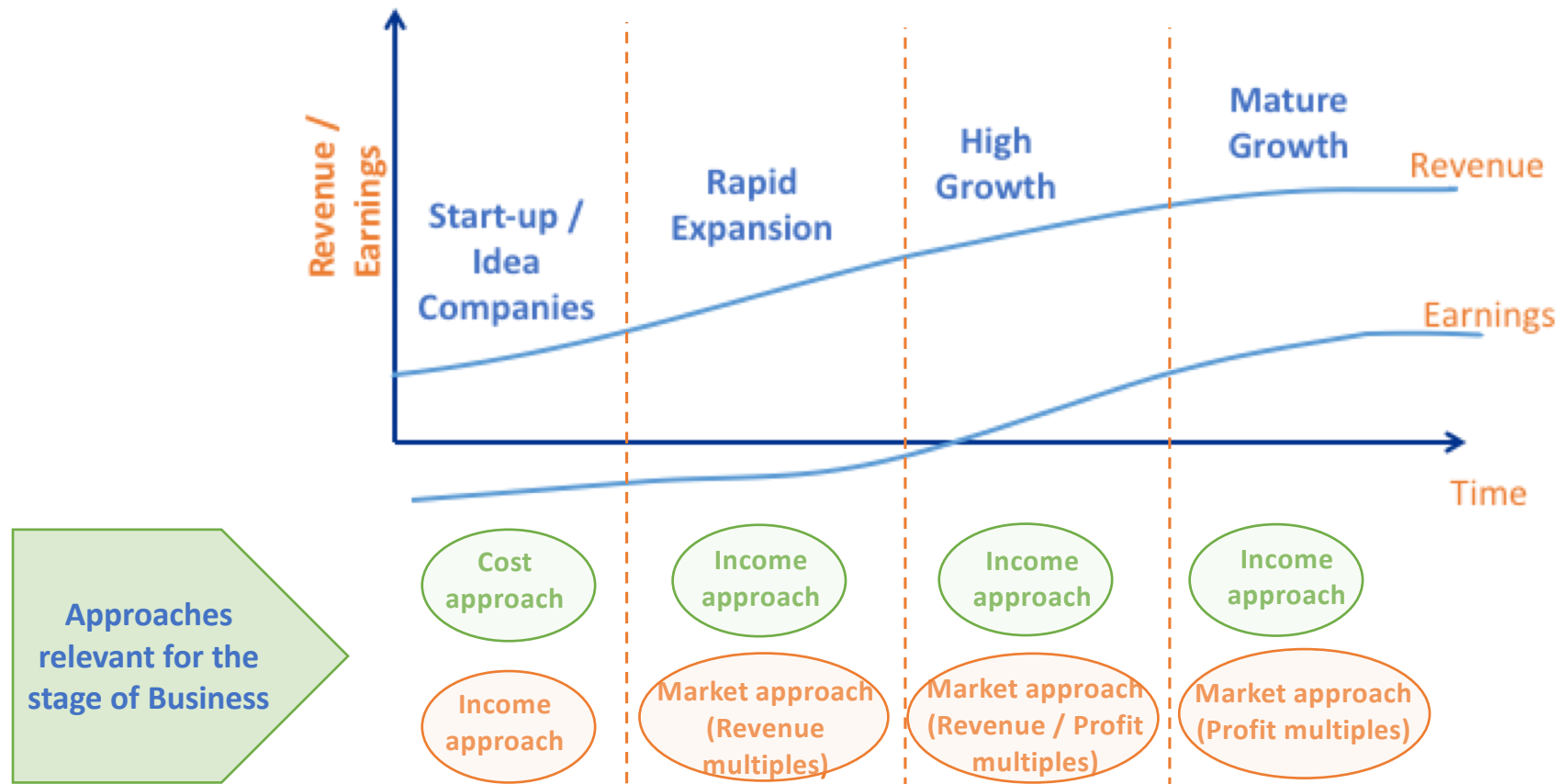>> Except intangible asset

10 **Option pricing models**

Mainly used for valuing financial instruments Blackscholes and Binomial model are standard models for this valuation
Six key inputs:
1. Current price of asset to be valued
2. Exercise price
3. Life of the option
4. Expected volatility in the price of the asset
5. Expected dividend yield
6. Risk free interest rate

Fair Valuation is the mostly the underlying 'Basis of Valuation'…

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the valuation date

Fair Valuation

Choice of Valuation Methodologies in a given situation…

Revenue / Earnings

Start-up / Idea Companies

Rapid Expansion

High Growth

Mature Growth

Revenue

Earnings

Time

Approaches relevant for the stage of Business

| Cost approach	Income approach	Income approach	Income approach
Income approach	Market approach (Revenue multiples)	Market approach (Revenue / Profit multiples)	Market approach (Profit multiples)

Disclaimer: This presentation captures the personal views / approaches / understanding of the presenter and does not necessarily represent the views of any organization.

Income Approach
– An illustration

Income Approach requires a lot more deeper insights to shortlist the key valuation parameters

A Company background

B Management Business Plan

C Free Cashflows

D Discount rate

E Business cycle / Key sensitivities

① FCFF **Vs** FCFE

②

Extrapolation

Forecast Period
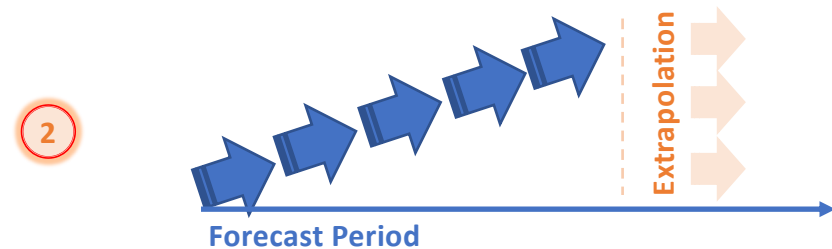
③ Terminal Value

- Gordon growth
  - Vs
- Variable growth
  - Vs
- Exit multiple
  - Vs
- Salvage /Liquidation value

Income Approach – An illustration 1

Business	: Auto Company
Life	: Explicit forecast for 5 years
Terminal Value	: Gordon Growth Model
DCF Type	: FCFF

Case study 1: Automotive company (Profit & Loss Statement)

Projected Profitability Statement

INR Mn.	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Number of months	12	12	12	12	12	12	12	12
Revenue	171.6	185.3	203.8	228.3	262.5	294.0	323.4	349.3
Expenses	157.8	168.6	183.4	203.2	231.0	258.7	284.6	307.4
EBITDA	**13.7**	**16.7**	**20.4**	**25.1**	**31.5**	**35.3**	**38.8**	**41.9**
EBITDA margin	8.0%	9.0%	10.0%	11.0%	12.0%	12.0%	12.0%	12.0%

Projected Profitability Statement - Key assumptions

INR Mn.	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Revenue								
YoY growth		8.0%	10.0%	12.0%	15.0%	12.0%	10.0%	8.0%
EBITDA margin	8.0%	9.0%	10.0%	11.0%	12.0%	12.0%	12.0%	12.0%

Case study 1: Automotive company (Balance Sheet)

INR Mn.	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Number of months	12	12	12					
Fixed Assets	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Working Capital	100.0	110.0	120.0	134.4	154.6	173.1	190.4	205.7
Cash / Bank Balance	60.0	58.5	59.8	60.22	59.69	63.60	71.40	83.60
Total	*180.0*	*188.5*	*199.8*	*214.6*	*234.2*	*256.7*	*281.8*	*309.2*
Share capital	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Reserves & Surplus	155.0	163.5	174.8	189.62	209.25	231.71	256.81	284.25
Subtotal	*160.0*	*168.5*	*179.8*	*194.6*	*214.2*	*236.7*	*261.8*	*289.2*
Borrowings	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total	*180.0*	*188.5*	*199.8*	*214.6*	*234.2*	*256.7*	*281.8*	*309.2*

Projected Balance Sheet - Key assumptions

INR Mn.	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
WC number of days	213	217	215	215	215	215	215	215
Capex *	4	4	4	4	4	4	4	4

(Assumption: Capex – Depreciation)

Case study 1: Automotive company (Discounted Cashflow)

Discounted Cashflow

INR Mn.	2018-19	2019-20	2020-21	2021-22	2022-23	TV
Number of months	12	12	12	12	12	
EBITDA	25.1	31.5	35.3	38.8	41.9	
Tax on EBIT	6.3	7.9	8.8	9.7	10.5	
Increase in WC	14.4	20.2	18.5	17.3	15.2	
Capex	4.0	4.0	4.0	4.0	4.0	
FCFF	*0.4*	*(0.5)*	*3.9*	*7.8*	*12.2*	*12.8*
Disc factor	*0.89*	*0.80*	*0.72*	*0.64*	*0.57*	*0.57*
	0.4	(0.4)	2.8	5.0	7.0	7.3

Explicit value	14.7		
Terminal value	107.3	Income tax rate	25%
Enterprise Value	**122.1**		
Less: Debt	20.0	Terminal growth rate	5%
Add: Cash	59.8		
Equity Value	**161.9**	Discount rate	11.8%

Case study 1: Automotive company (Discounted Cashflow – Key sensitivities)

Terminal growth rate and WACC

161.9	3.0%	4.0%	5.0%	6.0%	7.0%
9.8%	170.9	192.0	221.9	267.3	344.9
10.8%	151.1	166.3	186.6	215.4	259.2
11.8%	135.9	147.2	161.9	181.5	209.2
12.8%	123.9	132.6	143.5	157.6	176.6
13.8%	114.2	121.0	129.4	139.9	153.6

EBITDA and Working capital

161.9	10.0%	11.0%	12.0%	13.0%	14.0%
194.9	121.6	150.9	180.1	209.4	238.6
204.9	112.5	141.7	171.0	200.2	229.5
214.9	103.4	132.6	161.9	191.1	220.4
224.9	94.2	123.5	152.7	182.0	211.2
234.9	85.1	114.4	143.6	172.9	202.1

Discounted Cashflow - Implied multiples

		INR Mn.	EV/EBITDA
EBITDA	2017-18	20.4	6.0
EBITDA	2018-19	25.1	4.9

*

Case study 1: Automotive company (Discounted Cashflow – Discount rate)

Cost of Equity (Ke)	
Rf	8.0%
Rm	14.0%
Rp (Rm-Rf)	6.0%
Beta	0.9
Alpha	2.0%
Ke	15.4%

Cost of Debt (Kd)	
Pre-tax Kd	11.0%
Tax rate	25.0%
Post-tax Kd	8.3%

D/E	1:1
Debt to Total Capital	0.5
Equity to Total Capital	0.5

WACC	11.8%

Discount Rate : is the return expected by a market participant from a particular investment and shall reflect not only the time value of money but also the risk inherent in the asset being valued as well as the risk inherent in achieving the future cash flows

Rf – Risk free rate of return – Long term G-Sec rate

Rm – Market return – Long term market return – normally measured as long term return on market indices like SENSEX

Rp – Risk premium = Market return – Risk free rate of return

Beta – is a measure of a stock's volatility in relation to the market

Alpha – Company specific premium

Kd – Cost of Debt – Long term sustainable cost of debt (normally consider company's current weighted cost of debt)

D/E – Debt Equity ratio – Industry mean/median D/E

Income Approach – An illustration 2

Business	: Pharma Company
Life	: Scale up stage reaching stabilization by 2029-30
Terminal Value	: Exit multiple based valuation
DCF Type	: FCFF

Case study 2: Pharma company (Profit & Loss Statement)

Projected Profitability Statement

INR Mn.	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
Capacity utilization %	25%	26%	28%	30%	32%	35%	38%	41%	44%	48%	52%	56%	61%	67%	74%
Number of months	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
Revenue	171.6	185.3	203.8	220.1	237.7	256.7	277.3	299.5	323.4	349.3	377.2	407.4	448.1	493.0	305.0
Expenses	168.1	177.9	193.6	209.1	224.6	241.3	259.3	278.5	299.2	321.3	345.2	370.7	405.6	441.2	268.4
EBITDA	**3.4**	**7.4**	**10.2**	**11.0**	**13.1**	**15.4**	**18.0**	**21.0**	**24.3**	**27.9**	**32.1**	**36.7**	**42.6**	**51.8**	**36.6**
EBITDA margin	2.0%	4.0%	5.0%	5.0%	5.5%	6.0%	6.5%	7.0%	7.5%	8.0%	8.5%	9.0%	9.5%	10.5%	12.0%

Projected Profitability Statement - Key assumptions

INR Mn.	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2021-22	2021-22	2021-22	2021-22	2021-22	2021-22	2021-22	2022-23
Revenue															
YoY growth		5.0%	6.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	10.0%	10.0%	10.0%
EBITDA margin	2.0%	4.0%	5.0%	5.0%	5.5%	6.0%	6.5%	7.0%	7.5%	8.0%	8.5%	9.0%	9.5%	10.5%	12.0%

Disclaimer: This presentation captures the personal views / approaches / understanding of the presenter and does not necessarily represent the views of any organization.

Case study 2: Pharma company (Balance Sheet)

Projected Balance Sheet

INR Mn.	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
Capacity utilization %	25%	26%	28%	30%	32%	35%	38%	41%	44%	48%	52%	56%	61%	67%	74%
Number of months	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
Fixed Assets	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Working Capital	100.0	110.0	120.0	129.6	140.0	151.2	163.3	176.3	190.4	205.7	222.1	239.9	263.9	290.3	179.6
Cash / Bank Balance	60.0	51.6	45.2	39.85	35.29	31.65	29.07	27.73	27.82	29.54	33.14	38.87	42.81	51.24	185.37
Total	*180.0*	*181.6*	*185.2*	*189.5*	*195.3*	*202.8*	*212.3*	*224.1*	*238.2*	*255.2*	*275.2*	*298.7*	*326.7*	*361.5*	*385.0*
Share capital	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Reserves & Surplus	155.0	156.6	160.2	164.45	170.26	177.81	187.33	199.05	213.24	230.20	250.25	273.75	301.68	336.50	359.95
Subtotal	*160.0*	*161.6*	*165.2*	*169.5*	*175.3*	*182.8*	*192.3*	*204.1*	*218.2*	*235.2*	*255.2*	*278.7*	*306.7*	*341.5*	*365.0*
Borrowings	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total	*180.0*	*181.6*	*185.2*	*189.5*	*195.3*	*202.8*	*212.3*	*224.1*	*238.2*	*255.2*	*275.2*	*298.7*	*326.7*	*361.5*	*385.0*

Projected Balance Sheet - Key assumptions

INR Mn.	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2021-22	2021-22	2021-22	2021-22	2021-22	2021-22	2021-22	2022-23
WC number of days	213	217	215	215	215	215	215	215	215	215	215	215	215	215	215
Capex *	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4

(Assumption: Capex – Depreciation)

Case study 2: Pharma company (Discounted Cashflow)

Discounted Cashflow

INR Mn.	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	TV
Capacity utilization %	30%	32%	35%	38%	41%	44%	48%	52%	56%	61%	67%	74%	
Number of months	12	12	12	12	12	12	12	12	12	12	12	12	
EBITDA	11.0	13.1	15.4	18.0	21.0	24.3	27.9	32.1	36.7	42.6	51.8	36.6	
Tax on EBIT	2.8	3.3	3.9	4.5	5.2	6.1	7.0	8.0	9.2	10.6	12.9	9.2	
Increase in WC	9.6	10.4	11.2	12.1	13.1	14.1	15.2	16.5	17.8	24.0	26.4	(110.7)	
Capex	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
FCFF	(5.3)	(4.6)	(3.6)	(2.6)	(1.3)	0.1	1.7	3.6	5.7	3.9	8.4	134.1	366.0
Disc factor	0.88	0.78	0.69	0.61	0.54	0.48	0.42	0.38	0.33	0.29	0.26	0.23	0.23
	(4.7)	(3.6)	(2.5)	(1.6)	(0.7)	0.0	0.7	1.4	1.9	1.2	2.2	30.9	84.3

Explicit value	25.1		
Terminal value	84.3	Income tax rate	25%
Enterprise Value	**109.4**		
Less: Debt	20.0		
Add: Cash	45.2	TV (EBITDA multple of 2029-30)	10
Equity Value	**134.6**		
		Discount rate	13.0%

Case study 2: Pharma company (Discounted Cashflow – Key sensitivities)

For illustration purposes only. Figures are hypothetical numbers

Terminal Exit Multiple and WACC

134.6	9.0	9.5	10.0	10.5	11.0
11.0%	152.5	157.7	163.0	168.2	173.4
12.0%	138.6	143.3	148.0	152.7	157.3
13.0%	126.2	130.4	134.6	138.8	143.1
14.0%	115.2	119.0	122.7	126.5	130.3
15.0%	105.3	108.7	112.2	115.6	119.0

Discounted Cashflow - Implied multiples

		INR Mn.	EV/EBITDA
EBITDA	2017-18	10.2	10.7
EBITDA	2018-19	11.0	9.9

EBITDA and Working capital

134.6	3.0%	4.0%	5.0%	6.0%	7.0%
194.9	98.4	119.0	139.5	160.1	180.6
204.9	96.0	116.5	137.1	157.6	178.2
214.9	93.5	114.1	134.6	155.2	175.7
224.9	91.1	111.6	132.2	152.7	173.3
234.9	88.7	109.2	129.7	150.3	170.8

*

Case study 2: Pharma company (Discounted Cashflow – Discount rate)

Cost of Equity (Ke)	
Rf	8.0%
Rm	14.0%
Rp (Rm-Rf)	6.0%
Beta	0.9
Alpha	2.0%
Ke	15.4%

Cost of Debt (Kd)	
Pre-tax Kd	11.0%
Tax rate	25.0%
Post-tax Kd	8.3%

D/E	0.5:1
Debt to Total Capital	0.33
Equity to Total Capital	0.67

WACC	13.0%

Discount Rate : is the return expected by a market participant from a particular investment and shall reflect not only the time value of money but also the risk inherent in the asset being valued as well as the risk inherent in achieving the future cash flows

Rf – Risk free rate of return – Long term G-Sec rate

Rm – Market return – Long term market return – normally measured as long term return on market indices like SENSEX

Rp – Risk premium = Market return – Risk free rate of return

Beta – is a measure of a stock's volatility in relation to the market

Alpha – Company specific premium

Kd – Cost of Debt – Long term sustainable cost of debt (normally consider company's current weighted cost of debt)

D/E – Debt Equity ratio – Industry mean/median D/E

Income Approach – An illustration 3

Business   : Power Generation Company
Life   : Finite life
Terminal Value.   : Net book value (assuming it is reflective of
                    realizable salvage / liquidation value)
DCF Type   : FCFE

Case study 3: Power Generation Company (Profit & Loss Statement)

INR Mn.	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
Life in number of years	25														
Age in number of years	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Number of months	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
Revenue	171.6	185.3	203.8	209.9	216.2	222.7	229.4	236.3	243.4	250.7	258.2	265.9	273.9	282.1	236.3
Expenses	145.8	157.5	173.2	178.4	183.8	189.3	195.0	200.8	206.8	213.1	219.4	226.0	232.8	239.8	200.8
EBITDA	**25.7**	**27.8**	**30.6**	**31.5**	**32.4**	**33.4**	**34.4**	**35.4**	**36.5**	**37.6**	**38.7**	**39.9**	**41.1**	**42.3**	**35.4**
EBITDA margin	*15.0%*	*15.0%*	*15.0%*	*15.0%*	*15.0%*	*15.0%*	*15.0%*	*15.0%*	*15.0%*	*15.0%*	*15.0%*	*15.0%*	*15.0%*	*15.0%*	*15.0%*
Depreciation	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
EBIT	**21.7**	**23.8**	**26.6**	**27.5**	**28.4**	**29.4**	**30.4**	**31.4**	**32.5**	**33.6**	**34.7**	**35.9**	**37.1**	**38.3**	**31.4**
EBIT margin	*12.7%*	*12.8%*	*13.0%*	*13.1%*	*13.1%*	*13.2%*	*13.3%*	*13.3%*	*13.4%*	*13.4%*	*13.5%*	*13.5%*	*13.5%*	*13.6%*	*13.3%*
Interest	11.0	10.5	9.6	8.7	7.8	6.9	6.0	5.0	4.1	3.2	2.3	1.4	0.5	-	-
PBT	**10.7**	**13.2**	**16.9**	**18.8**	**20.6**	**22.5**	**24.4**	**26.4**	**28.4**	**30.4**	**32.4**	**34.5**	**36.6**	**38.3**	**31.4**
PBT margin	*6.3%*	*7.2%*	*8.3%*	*8.9%*	*9.5%*	*10.1%*	*10.7%*	*11.2%*	*11.7%*	*12.1%*	*12.6%*	*13.0%*	*13.4%*	*13.6%*	*13.3%*
Income Tax	2.7	3.3	4.2	4.7	5.2	5.6	6.1	6.6	7.1	7.6	8.1	8.6	9.2	9.6	7.9
PAT	**8.0**	**9.9**	**12.7**	**14.1**	**15.5**	**16.9**	**18.3**	**19.8**	**21.3**	**22.8**	**24.3**	**25.9**	**27.5**	**28.7**	**23.6**
PAT margin	*4.7%*	*5.4%*	*6.2%*	*6.7%*	*7.2%*	*7.6%*	*8.0%*	*8.4%*	*8.7%*	*9.1%*	*9.4%*	*9.7%*	*10.0%*	*10.2%*	*10.0%*

INR Mn.	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2021-22	2021-22	2021-22	2021-22	2021-22	2021-22	2021-22	2022-23
Revenue															
YoY growth		3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
EBITDA margin	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%

Case study 3: Power Generation Company (Balance Sheet)

INR Mn.	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
Life in number of years	25														
Age in number of years	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Number of months	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
Fixed Assets	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Working Capital	100.0	110.0	120.0	123.6	127.3	131.1	135.1	139.1	143.3	147.6	152.0	156.6	161.3	166.1	139.1
Cash / Bank Balance	60.0	51.6	46.0	48.1	51.6	56.3	62.4	69.8	78.6	88.7	100.3	113.3	127.7	151.6	202.2
Total	*260.0*	*261.6*	*266.0*	*271.7*	*278.9*	*287.4*	*297.4*	*308.9*	*321.9*	*336.3*	*352.3*	*369.9*	*389.0*	*417.7*	*441.3*
Share capital	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Reserves & Surplus	155.0	164.9	177.6	191.7	207.2	224.1	242.4	262.2	283.5	306.3	330.6	356.5	384.0	412.7	436.3
Subtotal	*160.0*	*169.9*	*182.6*	*196.7*	*212.2*	*229.1*	*247.4*	*267.2*	*288.5*	*311.3*	*335.6*	*361.5*	*389.0*	*417.7*	*441.3*
Borrowings	100.0	91.7	83.3	75.0	66.7	58.3	50.0	41.7	33.3	25.0	16.7	8.3	-	-	-
Total	*260.0*	*261.6*	*266.0*	*271.7*	*278.9*	*287.4*	*297.4*	*308.9*	*321.9*	*336.3*	*352.3*	*369.9*	*389.0*	*417.7*	*441.3*

Projected Balance Sheet - Key assumptions

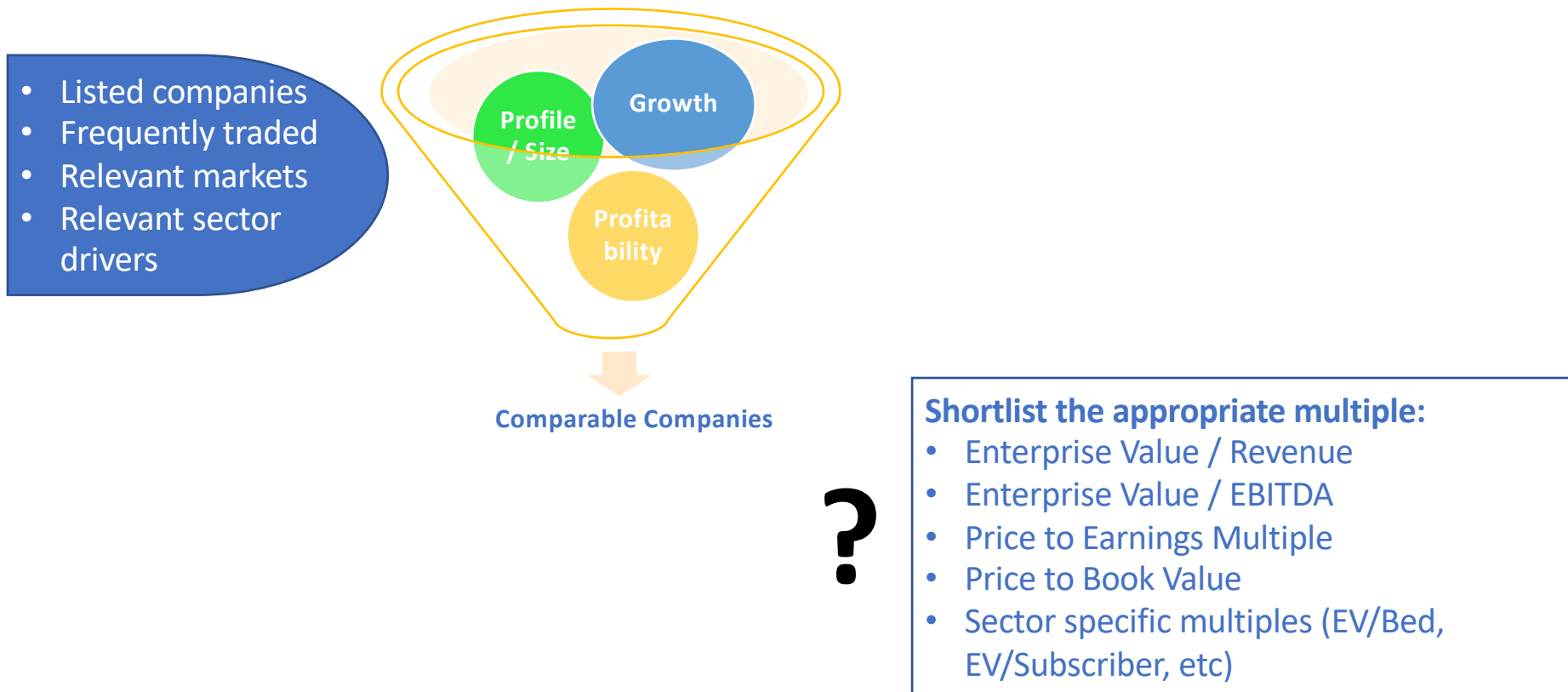| INR Mn.	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2021-22	2021-22	2021-22	2021-22	2021-22	2021-22	2021-22	2022-23
WC number of days	213	217	215	215	215	215	215	215	215	215	215	215	215	215	215
Capex (Assumption: Capex = Depreciation)	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Debt repayments	-	8	8	8	8	8	8	8	8	8	8	8	8	-	-

Disclaimer: This presentation captures the personal views / approaches / understanding of the presenter and does not necessarily represent the views of any organization.

(Assumption: Capex – Depreciation)

Case study 3: Power Generation Company (Discounted Cashflow)

Discounted Cashflow

INR Mn.	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	TV
Life in number of years	25												
Age in number of years	14	15	16	17	18	19	20	21	22	23	24	25	
Number of months	12	12	12	12	12	12	12	12	12	12	12	12	
PAT	14.1	15.5	16.9	18.3	19.8	21.3	22.8	24.3	25.9	27.5	28.7	23.6	
Add: Depreciation	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Increase in WC	3.6	3.7	3.8	3.9	4.1	4.2	4.3	4.4	4.6	4.7	4.8	(27.0)	
Capex	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Debt repayments	8	8	8	8	8	8	8	8	8	8	-	-	
FCFE	**2.2**	**3.4**	**4.7**	**6.1**	**7.4**	**8.8**	**10.2**	**11.6**	**13.0**	**14.4**	**23.9**	**50.6**	**441.3**
Disc factor	0.87	0.75	0.65	0.56	0.49	0.42	0.37	0.32	0.28	0.24	0.21	0.18	0.18
	1.9	2.6	3.1	3.4	3.6	3.7	3.7	3.7	3.6	3.4	4.9	9.1	79.1

Explicit value	46.7		
Terminal value	79.1	Income tax rate	25%
Add: Cash	46.0		
Equity Value	**171.8**	TV as % of Networh of 2029-30	100%
		Discount rate	15.4%

*

Case study 3: Power Generation Company (Discounted Cashflow – Key sensitivities)

Terminal growth rate and WACC

171.8	90.0%	95.00%	100.0%	105.00%	110.0%
13.4%	187.3	192.2	197.1	201.9	206.8
14.4%	175.0	179.4	183.8	188.2	192.6
15.4%	163.9	167.9	171.8	175.8	179.7
16.4%	154.0	157.5	161.1	164.7	168.2
17.4%	145.0	148.2	151.4	154.7	157.9

Discounted Cashflow - Implied multiples

		(INR Mn.)	PE Multiple
PAT	2017-18	12.7	13.5
PAT	2018-19	14.1	12.2

EBITDA and Working capital

171.8	13.0%	14.0%	15.0%	16.0%	17.0%
194.9	146.7	160.0	173.3	186.6	199.9
204.9	146.0	159.3	172.6	185.9	199.2
214.9	145.2	158.5	171.8	185.1	198.5
224.9	144.5	157.8	171.1	184.4	197.7
234.9	143.7	157.0	170.4	183.7	197.0

*

Case study 3: Power Generation Company (Discounted Cashflow – Discount rate)

Discount Rate : *is the return expected by a market participant from a particular investment and shall reflect not only the time value of money but also the risk inherent in the asset being valued as well as the risk inherent in achieving the future cash flows*

Cost of Equity (Ke)	
Rf	8.0%
Rm	14.0%
Rp (Rm-Rf)	6.0%
Beta	0.9
Alpha	2.0%
Ke	15.4%

Rf – Risk free rate of return – Long term G-Sec rate

Rm – Market return – Long term market return – normally measured as long term return on market indices like SENSEX

Rp – Risk premium = Market return – Risk free rate of return

Beta – is a measure of a stock's volatility in relation to the market

Alpha – Company specific premium

Market Approach – An illustration

Comparable Companies Method

Market Approach presents a market observable check on Valuation

- Listed companies
- Frequently traded
- Relevant markets
- Relevant sector drivers

Profile / Size

Growth

Profitability

Comparable Companies

?

Shortlist the appropriate multiple:
- Enterprise Value / Revenue
- Enterprise Value / EBITDA
- Price to Earnings Multiple
- Price to Book Value
- Sector specific multiples (EV/Bed, EV/Subscriber, etc)

Case Study : Different multiples used in valuation

Valuation parameter		Revenue	EBITDA	EBIT	PAT
Value of Valuation paramater	INR Mn	1,000.0	115.0	100.0	50.0
Comparable Company Multiple	Multiple	1.2	11.1	12.2	15.0
Enterprise Valuation	*INR Mn*	*1,208.3*	*1,277.8*	*1,222.2*	*750.0*
Less: Debt	INR Mn	500.0	500.0	500.0	
Add Cash	INR Mn	100.0	100.0	100.0	100.0
Equity Valuation	*INR Mn*	*808.3*	*877.8*	*822.2*	*850.0*

Case Study : Multiples computed for Comparable Companies

Name of the Company	Year end	Market Capital	Debt	Cash	Enterprise Value	Revenue	EBITDA	EBIT	PAT	EV / Revenue	EV / EBITDA	EV / EBIT	P/E
Company 1	31-Mar-18	1500	500	100	1900	1500	220	165	120	1.3	8.6	11.5	12.5
Company 2	31-Mar-18	1000	200	100	1100	1000	80	90	60	1.1	13.8	12.2	16.7
Company 3	31-Mar-18	1350	200	100	1450	1200	120	120	90	1.2	12.1	12.1	15.0
Company 4	31-Mar-18	1000	100	100	1000	800	90	72	56	1.3	11.1	13.9	17.9
Company 5	31-Mar-18	1800	1500	500	2800	2500	300	200	200	1.1	9.3	14.0	9.0
									Mean	1.2	11.0	12.7	14.2
									Median	1.2	11.1	12.2	15.0

Market Approach – An illustration

Comparable Transactions Method

Comparable Transactions provide a market precedent check for Valuation
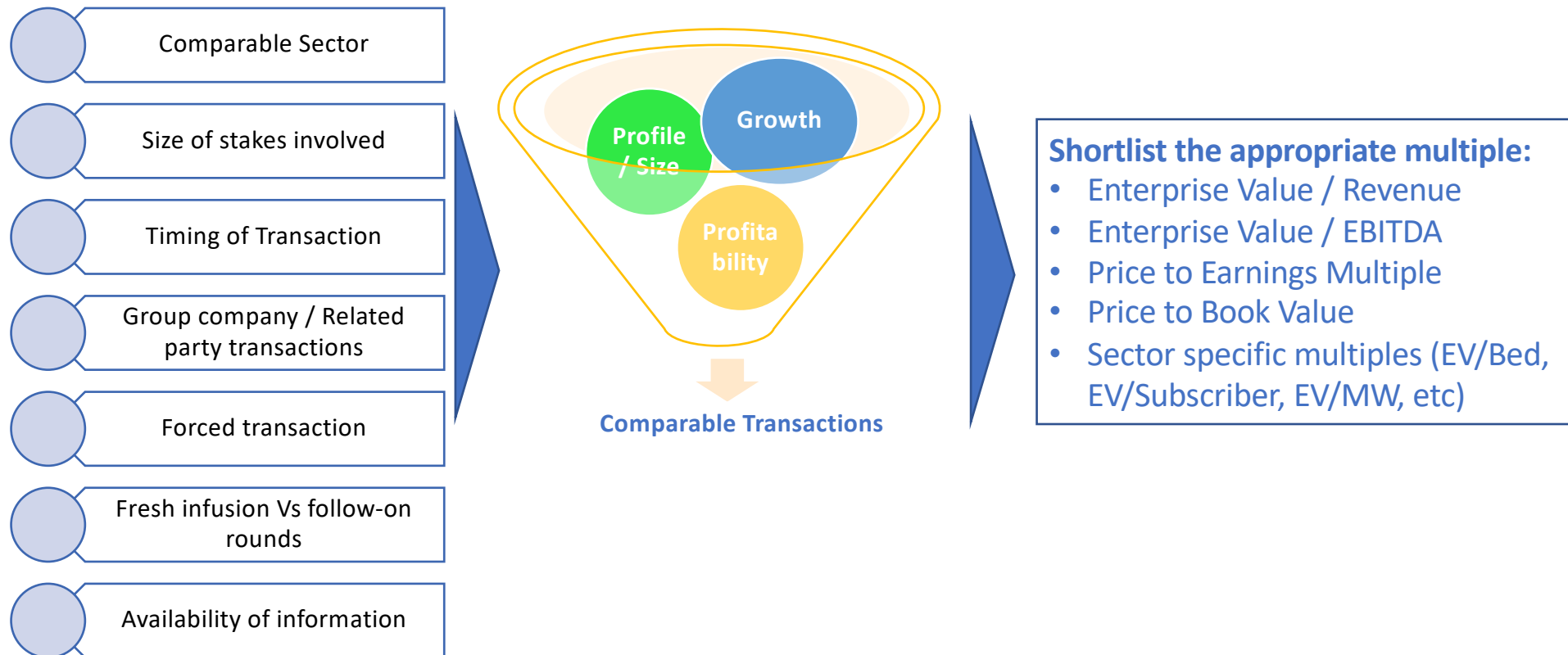
- Comparable Sector
- Size of stakes involved
- Timing of Transaction
- Group company / Related party transactions
- Forced transaction
- Fresh infusion Vs follow-on rounds
- Availability of information

Profile / Size

Growth

Profita bility

Comparable Transactions

Shortlist the appropriate multiple:
- Enterprise Value / Revenue
- Enterprise Value / EBITDA
- Price to Earnings Multiple
- Price to Book Value
- Sector specific multiples (EV/Bed, EV/Subscriber, EV/MW, etc)

Case Study : Comparable Transactions valuation using different multiples

Valuation parameter		Revenue	EBITDA	EBIT	PAT
Value of Valuation paramater	INR Mn	1000.0	120.0	100.0	50.0
Comparable Transaction Multiple	Multiple	1.3	10.6	12.7	22.5
Enterprise Valuation	*INR Mn*	*1266.7*	*1266.7*	*1266.7*	*1125.0*
Less: Debt	INR Mn	500.0	500.0	500.0	
Add Cash	INR Mn	100.0	100.0	100.0	100.0
Equity Valuation	*INR Mn*	*866.7*	*866.7*	*866.7*	*1225.0*

Case Study : Computation of multiples for Comparable Transactions

For illustration purposes only. Figures are hypothetical numbers

Name of the Investor	Name of the Investee	Business Profile	Stakes involved	Timing of transaction	Transaction Equity Value	Transaction Enterprise Value	Revenue	EBITDA	EBIT	PAT	EV / Revenue	EV / EBITDA	EV / EBIT	P/E
Company 1	Investee 1		55%	01-Mar-18	1500	1900	1500	180	150	75	1.3	10.6	12.7	20.0
Company 2	Investee 2		100%	01-Jan-18	1000	1100	700	84	70	35	1.6	13.1	15.7	28.6
Company 3	Investee 3		75%	01-Nov-17	1350	1450	1200	144	120	60	1.2	10.1	12.1	22.5
Company 4	Investee 4		80%	01-Sep-17	1000	1000	800	96	80	40	1.3	10.4	12.5	25.0
Company 5	Investee 5		90%	01-Apr-17	1800	2800	2000	240	200	100	1.4	11.7	14.0	18.0
										Mean	1.3	11.2	13.4	22.8
										Median	1.3	10.6	12.7	22.5

Shortlist the appropriate multiple:
- Typical timeframe is 1 to 3 years
- Subject to availability of data
- DLOM, DLOC, Control premium
- Corroborative analysis considering premium/discounts embedded in the transaction valuation for which the data is not available

Cost Approach
– An illustration

Cost Approaches are normally sanity checkpoint in many situations unless company is in a Startup phase or liquidation scenario

Book Value / Historical Cost

Cost incurred by the Business till date to bring the asset to the current state

Replacement Cost

Replacement Cost Method refers to valuing an asset based on the cost that a market participant shall have to incur to recreate an asset with substantially the same utility (comparable utility) as that of the asset to be valued, adjusted for obsolescence

Reproduction Cost

Reproduction Cost Method refers to the cost that a market participant shall have to incur to recreate a replica of the asset to be valued, adjusted for obsolescence

Case Study : Valuation under different Cost Approaches

INR Mn	Book value	Reproduction cost	Replacement cost
Fixed Assets			
Tangible Assets	1000	1500	1250
Intangible Assets	500	400	450
CWIP	100	100	100
sub-total	*1600*	*2000*	*1800*
Net Working Capital			
Inventories	500	550	550
Receivables	1000	1000	1000
Loans & Advances	500	400	400
Payables	800	800	800
Provisions	100	100	100
sub-total	*2900*	*2850*	*2850*
Cash and Bank balances	150	150	150
Borrowings			
LT Bank Borrowings	1500	1500	1500
ST Bank Borrowings	500	500	500
Other Borrowings	500	500	500
sub-total	*2500*	*2500*	*2500*
Net Book Value	2150	2500	2300

INR Mn	Book value	Reproduction cost	Replacement cost
Networth			
Equity Share Capital	1000	1000	1000
Reserves & Surplus	1150	1500	1300
sub-total	*2150*	*2500*	*2300*

Disclaimer: This presentation captures the personal views / approaches / understanding of the presenter and does not necessarily represent the views of any organization.

Valuation Conclusion – An illustration

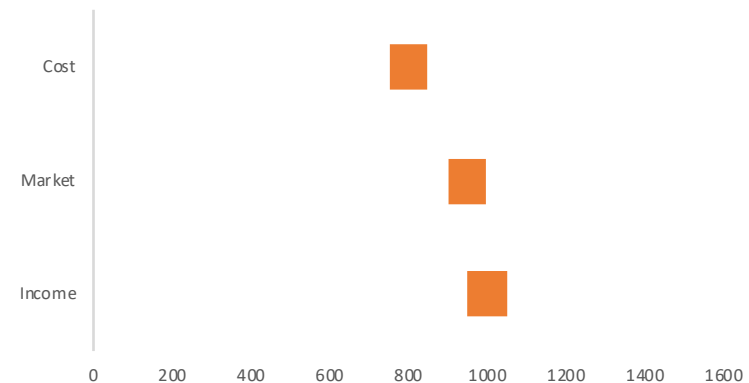# Valuation conclusion is highly subjective and based on Valuer's judgement

Weighted Average

INR Mn	Equity Valua	Wt	
Income	1000	40%	400
Market	950	40%	380
Cost	800	20%	160
Equity Value			**940**

Range Analysis

Valuation of ABC Ltd

Different Valuer's can still arrive at different Valuation Conclusions for the same Business based on their deeper understanding of the business, sector, valuation drivers and findings in the specific engagement besides experiences on similar other valuation………………………

Valuation conclusion is highly subjective and based on Valuer's judgement

- Surplus Assets

- Contingent Liabilities

- Debt-Like Adjustments

- Participant specific value

- Multi-Geo presence

- Multi-business conglomerate

- Captive businesses

Valuation Engagement and Reporting – Key Contents

Valuation Report

- Engagement contract
- Scope of work, key Limitations, responsibilities, confidentialities
- Objective
- Valuation Date
- Management Business Plan
- Valuation analysis, key assumptions &Valuation conclusion
- Management Representation

In my personal view, Valuation is not an
"Art" or a "Science" but more of an "Applied
Science" ……………

Thank you

Vikas Suresh Kumar
+91 9840213110

Disclaimer: This presentation captures the personal views / approaches / understanding of the presenter and does not necessarily represent the views of any organization.