

**BEWARE
OF**

**FAKE
EQUITY RESEARCH &
VALUATION
SCHOOLS**

**Common Observations on the Valuation Workings
presented in the Valuation Models & Equity
Research Reports prepared by Students as part of
Paid Courses of an Equity Research and Valuation
School (Source: LinkedIn)**

**Please note that these observations are only on
the market inputs, application of valuation
methods and objectivity of certain assumptions
such as reinvestment rates. Not commenting on
the cashflow assumptions (Revenue, EBITDA,
etc.) though they are also meaningless.**

**Focusing only on the Fundamental, Conceptual
and Logical aspects of Valuation.**

Please create awareness and support in improving the quality of education in the field of Valuation and Equity Research.

Thank You

Manish Bohra, CFA

Weighted Average Cost of Capital (Discount Rate Computation)

1. Poor selection of comparable companies. In some cases they are as different as chalk and cheese. Free Screeners have been blindly relied on rather than revalidating the comparability of selected companies.
2. Marginal Tax Rate (for India) of 30% has been considered for WACC in most of the cases. It should have been 25.168%.
3. Target Debt-to-Equity (D/E) has been considered basis the peer average (not even median) when the D/E of underlying peers are quite diverse. This is incorrect. Due to this the subject company's current D/E and target D/E are very different resulting into distorted WACC.
4. Pre-tax cost of debt in many cases is less than the risk free rate. How is that possible? That cannot be the case. The reason is that the pre-tax cost of

debt has been computed as Trailing Twelve Months (TTM) Interest Cost as a % of Total Debt. The same formula has been applied in all models without analysing the numbers.

5. More importantly, why the beta and D/E have been considered/computed basis the peer data when the subject companies are public listed entities and their own beta and D/E are available. At least in the valuation done for the equity research report, the WACC should have been estimated using the subject company's own Beta and its target D/E.

Courses on Valuation and Equity

Research should definitely cover all these aspects. There are basics.

Discounted Cash Flow Valuation

1. Reinvestment Rates, which are net of depreciation, in most of the cases are very high during the explicit forecast period while its impact on future earnings have not been adequately factored in leading to undervaluation in most of the cases.
2. Incorrect computation of terminal value taking into account a very high reinvestment rate, while on the other hand the estimated terminal growth rate is not in line with the reinvestment rate assumption.

The implied EV/EBITDA multiple at the terminal value is very low in many cases and is not in line with the industry multiple expectations.

Incorrect terminal value computation is leading to undervaluation.

3. Marginal Tax Rate (for India) of 30% has been considered for WACC in most of the cases. It should have been 25.168%.
4. No clarity or workings on the inclusion of value of investments and non-operating assets / liabilities, and minority interest adjustments in the equity value estimation.

Surely, this is NOT Valuation.

Relative Valuation (CCM)

1. Relative Valuation in most of the cases is absolute crap.
2. Poor selection of comparable companies leading to poor valuation results.
3. In most of the cases, the multiples (EV/Revenue, EV/EBITDA and Price to Earnings) are quite diverse with wide variation. The valuation has been done basis the median of such a diverse range of multiples resulting into faulty valuation.
4. Valuation has been carried out basis the median peer multiple and by comparing it with the subject company's own trading multiple to conclude on the over-valuation or under-valuation without exploring the reasons for divergence from the so-called flawed median multiple.

No Analysis & Benchmarking

**No Due Diligence on Inputs and Assumptions
whether they are making sense or not**

**Conceptually Incorrect Application of
Valuation Methods**

One Formula for All Situations

**This is Not Valuation. This is Not Equity
Research. This is Very Poor Financial
Modeling.**

**This is only “Fill in the Template”
Exercise.**


What is the Main Reason for this Utter Crap?

**Such Educators or Mentors or Coaches or
International Trainers have either Zero or
Insignificant Professional Work Experience in
Valuation and/or Equity Research.**

**Valuation and Equity Research are practical
domains where most of the learnings happen
on-the-job by doing and practising in a long,
extensive and gruelling professional career.**

**Practical Valuation is tough and complex,
much above the “Fill in the Template”
nonsense.**


Taking example of the Valuation Mentor of this School to explain my point. Below is the summary of his relevant (what really matters) professional work experience.


 Deal Advisory - Corporate Valuation
PwC
Oct 2021 - Apr 2023 · 1 yr 7 mos

PwC and other Big Fours have separate Deal Advisory and Valuation practices. How can he be part of two different teams? Looks fishy? Or Is it mere Projection of Valuation Experience which is lacking in his career?

Designation is missing in this case when given for previous jobs below. Why? Hiding Seniority? May be a Junior level like Associate or Assistant Manager does not help in personal branding as an International Trainer or Valuation Mentor?

For these work experiences, Domains are not mentioned. It is simple. These were not Valuation or Investment Banking / Deal Advisory. So better not to disclose.

 Manager
HSBC
Nov 2018 - Sep 2021 · 2 yrs 11 mos

 Senior Consultant
Protiviti
Jan 2018 - Oct 2018 · 10 mos
Mumbai Area, India

 YES BANK
1 yr 11 mos

- Deputy Manager
Apr 2017 - Jan 2018 · 10 mos
Mumbai, Maharashtra, India

Professional Valuation Experience = ZERO

- Associate
Mar 2016 - Apr 2017 · 1 yr 2 mos
Mumbai

Multiple valuation case studies of different students who attended the paid courses of a particular school have been given below to highlight that the problem is the manner in which the valuation has been taught by the educator rather than errors committed by individual students.

The issues are same across all the valuation models and equity research reports.

Request to please see my markings and comments on the pages extracted from the reports. There are many more such reports. Sadly, these issues are widespread across the board.

Please create awareness and support in improving the quality of education in the field of Valuation and Equity Research.

Thank You

Manish Bohra, CFA

Relevant Valuation Workings
extracted from the
Valuation Model / Equity Research Report
on
Mahindra & Mahindra

Weighted Average Cost of Capital

All figures are in INR unless stated otherwise.

Marginal tax rate should have been 25.168%

Poor data series to estimate average debt/capital which has been considered for Target D/E for WACC.

Peer Comps

Name of the Company	Country	Total Debt	Total Equity	Tax Rate ¹	Debt/Equity	Debt/Capital	Levered Beta ²	Unlevered Beta ³
M & M	India	83,272.9	1,54,674.4		30.00%	53.84%	35.00%	0.90
Maruti Suzuki	India	1,247.3	2,75,225.0		30.00%	0.45%	0.45%	0.73
Tata Motors	India	1,44,354.2	1,80,619.3		30.00%	79.92%	44.42%	1.34
Bajaj Auto	India	124.2	1,28,392.7		30.00%	0.10%	0.10%	0.93
Eicher Motors	India	168.3	92,509.2		30.00%	0.18%	0.18%	1.21
Average					30.00%	26.90%	16.03%	1.02
Median					30.00%	0.45%	0.45%	0.93

Pre-tax cost of debt cannot be less than risk free rate

Cost of Debt

Pre- Tax Cost of Debt	5418/8327	6.51%
Tax Rate		30.00%
Post Tax Cost of Debt		4.56%

Cost of Equity

Risk Free Rate	7.39%
Equity Risk Premium	8.02%
Levered Beta ⁴	0.99
Cost of Equity	15.37%

Capital Structure

	Current	Targeted
Total Debt	83,272.9	35.00%
Market Capitalisation	1,54,674.4	65.00%
Total Capital	2,37,947.3	100%
Debt/Equity	53.84%	19.09%

Levered Beta

Comps Median Unlevered Beta	0.86
Target Debt/Equity	19.09%
Tax Rate	30.00%
Levered Beta	0.99

Weighted Average Cost of Capital

Cost of Equity	15.37%
Equity Weight	83.97%
Cost of Debt	4.56%
Debt Weight	16.03%
WACC	13.64%

Notes:

1. Tax Rate considered as Marginal Rate for the country.
2. Levered beta is based on 5 years monthly data.
3. Unlevered beta = Levered beta / (1 + (1 - Tax Rate) * Debt/Equity)
4. Levered beta = Unlevered beta * (1 + (1 - Tax Rate) * Debt/Equity)

Poor benchmarking of Target D/E basis peer average as highlighted above leading to distorted WACC. Also significant difference between current and target D/E

# Calculation of Reinvestment Rate	Mar-18	Mar-19	Mar-20	Mar-21	Mar-22
Net Capex	5,791.0	7,198.0	6,794.0	4,625.0	5,920.0
Change in Working Capital		10,539.0	7,640	(5,692.0)	136.0
EBIT	9,946.2	11,215.7	6,791	8,108.9	11,175
Marginal Tax Rate	0.25	0.25	0.25	0.25	0.25
EBIT(1-Tax)	7,459.6	8,411.8	5,093.3	6,081.7	8,381.5
Reinvestment		17,737.0	14,434.0	-1,067.0	6,056.0
Reinvestment Rate		210.86%	283%	-17.54%	72.25%

Future reinvestment rates have been assumed basis the historical rates. It does not make any sense. Poor forecasting without any analysis.

4 Year Average
4 Year Median

137.24%
141.56%

# Calculation of Growth Rate	Mar-18	Mar-19	Mar-20	Mar-21	Mar-22
Reinvestment		210.86%	283.39%	-17.54%	72.25%
ROIC		12.83%	7.09%	9.92%	12.91%
Intrinsic Growth		27.05%	20.09%	-1.74%	9.33%

4 Year Average
4 Year Median

13.68%
14.71%

Calculation of PV of FCFF	Mar-22A	Mar-23F	Mar-24F	Mar-25F	Mar-26F	Mar-27F
EBIT	13,704.13	15,720.26	18,033.00	20,685.99	23,729.28	27,220.30
Tax Rate	25.00%	25.00%	25.00%	25.00%	25.00%	25.00%
EBIT (1-T)	10,278.10	11,790.20	13,524.75	15,514.49	17,796.96	20,415.22
Less: Reinvestment	141.56%	127.54%	113.53%	99.51%	85.50%	85.50%
Free Cash Flow to Firm (FCFF)	(₹4,271.2)	(₹3,247.3)	-1,829.65	75.39	2,580.56	2,960.21
Mid Year Convention		0.50	1.5	2.5	3.5	4.5
Discounting Factor		0.938	0.826	0.726	0.639	0.563
PV of FCFF		(₹3,046.2)	-1,510.38	54.76	1,649.64	1,665.23

Expected Growth	14.71%
WACC	13.64%
Terminal Growth	5.38%

Very high reinvestment rates (net of depreciation) during explicit period.

Calculation of Terminal Value

FCFF (n+1)	3,395.71
WACC	13.64%
Terminal Growth Rate	5.38%
Terminal Value	41,122.92

Sensitivity Analysis

	12.00%	13.64%	16.00%	18.00%	20.00%
3.00%	36688.1	30727.4	24746.3	21122.6	18332.8
4.00%	41404.4	34038.0	26923.1	22739.6	19581.2
5.38%	50252.7	39923.1	30600.1	25391.9	21584.5
6.00%	55553.1	43259.3	32587.6	26782.1	22613.1
7.00%	66872.2	49953.0	36355.6	29354.6	24478.9

Calculation of Equity Value Per Share

PV of FCFF	-1,186.95
PV of Terminal Value	41,122.92
Value of Operating Assets	39,935.97
Add: Cash	11,118.00
Less: Debt	53,995.00
Value of Equity	(₹2,941.0)
No. of Shares	124.19
Equity Value Per Share	-23.68
Share Price	1245
Discount/Premium	-53.57x

Terminal Value has been estimated basis very high reinvestment rate (last forecast year) without ensuring its alignment with terminal growth rate. Leading to a very depressed equity value as compared to current share price.

Implied EV/EBITDA multiple at the terminal value is less than 2.0x.

Negative Equity Value?

Wide variation in multiples (very diverse). No benchmarking has been done.

Valuation has been done basis the median multiple.
Conclusion has been made about over-valuation or under-valuation by comparing the subject company's own multiple and median peer multiple without analysing the reasons for divergence in multiples.

Amount in crores

Comparable Company Valuations

Company	Ticker	Market Data				Financials			Valuation			
		Share Price	Shares Outstanding	Equity Value	Net Debt	Enterprise Value	Revenue	EBITDA	Net Income	EV/Revenue	EV/EBITDA	P/E
M & M		1,245	124.35	1,54,872	72,155	2,27,027	1,14,837	17,473	10,084	2.0x	13.0x	14.1x
Maruti Suzuki		9,112	30.21	2,75,260	1,206	2,76,466	1,17,571	13,336	8,211	2.4x	20.7x	33.5x
Tata Motors		504	332.14	1,67,282	1,03,685	2,70,967	3,18,474	27,557	-3,798	0.9x	9.8x	-44.0x
Bajaj Auto		4,529	28.30	1,28,166	-566	1,27,600	36,455	8,167	6,060	3.5x	15.6x	21.1x
Eicher Motors		3,382	27.35	92,495	-2,554	89,941	13,831	2,677	2,619	6.5x	33.6x	35.3x
TVS Motor Co.		1,230	47.51	58,435	11,432	69,867	31,974	4,165	1,309	2.2x	16.8x	44.6x
High										6.5x	33.6x	44.6x
75th Percentile										3.5x	20.7x	35.3x
Average										3.1x	19.3x	18.1x
Median										2.4x	16.8x	33.5x
25th Percentile										2.2x	15.6x	21.1x
Low										0.9x	9.8x	-44.0x

Mahindra & Mahindra Comparable Valuations

	EV/Revenue	EV/EBITDA	P/E
Implied Enterprise Value	2,76,465.6	2,23,725.1	3,78,944.9
Net Debt	1,205.7	1,03,685.0	1,03,685.0
Implied Market Value	2,75,259.9	1,20,040.1	2,75,259.9
Shares Outstanding	30.21	332.14	332.14
Implied Value Per Share	9,111.6	361.4	828.7

Source: The Valuation School, Screener.in

Overvalued Undervalued Overvalued

Relevant Valuation Workings
extracted from the
Valuation Model / Equity Research Report
on
Tata Motors

Weighted Average Cost of Capital

All figures are in INR unless stated otherwise.

Peer Comps

Name of the Company	Country	Total Debt	Total Equity	Tax Rate ¹	Debt/ Equity	Debt/ Capital	Levered Beta ²	Unlevered Beta ³
Tata Motors	India	1,44,354.2	1,72,594.1		30.00%	83.64%	45.55%	1.34
Maruti Suzuki	India	1,247.3	2,58,179.3		30.00%	0.48%	0.48%	0.73
M & M	India	83,272.9	1,52,145.2		30.00%	4.73%	35.37%	0.90
Eicher Motors	India	168.3	89,243.8		30.00%	0.19%	0.19%	1.21
Olectra Greentec	India	83.8	5,339.8		30.00%	1.57%	1.55%	0.93
Average					30.00%	28.12%	16.63%	1.02
Median					30.00%	1.57%	1.55%	0.93

Marginal tax rate should have been 25.168%

Poor data series to estimate average debt/capital which has been considered for Target D/E for WACC.

Cost of Debt

Pre- Tax Cost of Debt	69/710	9.72%
Tax Rate		30.00%
Post Tax Cost of Debt		6.80%

Cost of Equity

Risk Free Rate	7.39%
Equity Risk Premium	8.02%
Levered Beta ^A	0.99
Cost of Equity	15.31%

Estimated Levered Beta of 0.99 vs Tata Motors' own trading levered beta of 1.34?

Capital Structure

	Current	Targeted
Total Debt	1,44,354.2	16.63%
Market Capitalisation	1,72,594.1	83.37%
Total Capital	3,16,948.3	100%
Debt/Equity	83.64%	19.94%

Poor benchmarking of Target D/E basis peer average as highlighted above leading to distorted WACC. Also significant difference between current and target D/E

Levered Beta

Comps Median Unilevered Beta	0.85
Target Debt/Equity	19.94%
Tax Rate	30.00%
Levered Beta	0.99

Weighted Average Cost of Capital

Cost of Equity	15.31%
Equity Weight	83.37%
Cost of Debt	6.80%
Debt Weight	16.63%
WACC	13.89%

Calculation of ROIC	Mar-18	Mar-19	Mar-20	Mar-21	Mar-22
Intangible Assets	77,870.0	80,480.0	91,157.0	1,14,809.0	1,14,323.0
Other fixed assets	7,497.0	8,049.0	9,380.0	10,686.0	10,728.0
Gross Block	2,13,210.0	2,32,516.0	2,70,580.0	3,13,692.0	3,24,096.0
Accumulated Depreciation	91,795.0	1,21,283.0	1,43,471.0	1,74,985.0	1,85,241.0
# Net Block	1,21,415.0	1,11,233.0	1,27,109.0	1,38,707.0	1,38,855.0

# Invested Capital	89,444.0	86,573.0	1,02,157.0	1,06,574.0	1,14,981.0
EBIT	9,904.1	1,073.7	(3,438.4)	8,740.7	(115.6)

# ROIC	11.07%	1.24%	-3.37%	8.20%	-0.10%
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# Calculation of Reinvestment Rate	Mar-18	Mar-19	Mar-20	Mar-21	Mar-22
Net Capex	(35,049.0)	(35,237.0)	(29,531.0)	(19,854.0)	(14,938.0)
Change in Working Capital		7,311.0	(292.0)	(7,181.0)	8,259.0
EBIT	9,904.1	1,073.7	(3,438.4)	8,740.7	(115.6)
Marginal Tax Rate	0.25	0.25	0.25	0.25	0.25
EBIT(1-Tax)	7,428.1	805.3	-2,578.8	6,555.5	-86.7
Reinvestment		-27,926.0	-29,823.0	-27,035.0	-6,679.0

Reinvestment Rate		-3467.88%	1156%	-412.40%	7703.58%
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Future reinvestment rates have been assumed basis the historical rates. It does not make any sense. Poor forecasting without any analysis.



4 Year Average	1244.94%
4 Year Median	372.04%

# Calculation of Growth Rate	Mar-18	Mar-19	Mar-20	Mar-21	Mar-22
Reinvestment		-3467.88%	1156.48%	-412.40%	7703.58%
ROIC		1.24%	-3.37%	8.20%	-0.10%
Intrinsic Growth		-43.01%	-38.92%	-33.82%	-7.75%

4 Year Average	-30.88%
4 Year Median	-36.37%

	Mar-22A	Mar-23F	Mar-24F	Mar-25F	Mar-26F	Mar-27F
Calculation of PV of FCFF						
EBIT	2,101.68	2,866.06	3,908.45	5,329.95	7,268.45	9,911.99
Tax Rate	25.00%	25.00%	25.00%	25.00%	25.00%	25.00%
EBIT (1-T)	1,576.26	2,149.55	2,931.34	3,997.46	5,451.34	7,433.99
Less: Reinvestment	372.04%	291.95%	211.86%	131.77%	51.68%	51.68%
Free Cash Flow to Firm (FCFF)	-4,288.08	-4,126.07	-3,279.01	-1,270.01	2,634.09	3,592.10
Mid Year Convention		0.50	1.5	2.5	3.5	4.5
Discounting Factor		0.937	0.823	0.722	0.634	0.557
PV of FCFF		-3,866.25	-2,697.76	-917.43	1,670.73	2,000.47

Expected Growth	36.37%
WACC	13.89%
Terminal Growth	5.38%

Very high reinvestment rates (net of depreciation) during explicit period and future EBIT growth has been extraordinary

Calculation of Terminal Value

FCFF (n+1)	4,898.55
WACC	13.89%
Terminal Growth Rate	5.38%
Terminal Value	57,549.46

Sensitivity Analysis

	12.00%	13.89%	16.00%	18.00%	20.00%
3.00%	50735.2	41172.0	33758.2	28642.4	24721.8
4.00%	57538.8	45720.2	36898.3	30975.0	26522.8
5.38%	70303.1	53752.2	42202.7	34801.1	29412.6
6.00%	77949.4	58275.4	45062.5	36806.6	30896.5
7.00%	94277.9	67286.4	50505.4	40517.6	33588.0

Calculation of Equity Value Per Share

PV of FCFF	-3,810.25
PV of Terminal Value	57,549.46
Value of Operating Assets	53,739.20
Add: Cash	40,669.00
Less: Debt	1,15,137.00
Value of Equity	-20,728.80
No. of Shares	358.64
Equity Value Per Share	-57.80
Share Price	482
Discount/Premium	-9.34x

Terminal Value has been estimated basis very high reinvestment rate (last forecast year) without ensuring its alignment with terminal growth rate. Leading to a very depressed equity value as compared to current share price.

Negative Equity Value?

Wide variation in multiples (very diverse). No benchmarking has been done.

Valuation has been done basis the median multiple. Conclusion has been made about over-valuation or under-valuation by comparing the subject company's own multiple and median peer multiple without analysing the reasons for divergence in multiples.

Amount in crores

Comparable Company Valuations

Company	Ticker	Market Data				Financials			Valuation			
		Share Price	Shares Outstanding	Equity Value	Net Debt	Enterprise Value	Revenue	EBITDA	Net Income	EV/Revenue	EV/EBITDA	P/E
Tata Motors		482	332.14	1,59,959	1,03,685	2,63,644	3,18,474	31,047	-3,798	0.8x	8.5x	-42.1x
SML ISUZU		954	1.45	1,384	259	1,642	1,581	43	-18	1.0x	38.0x	-75.3x
Force Motors		1,298	1.32	1,713	919	2,632	4,420	240	-37	0.6x	11.0x	-46.2x
Olectra Greentec		650	8.21	5,340	-115	5,224	986	138	57	5.3x	37.9x	93.4x
Tata Motors-DVR		246	50.85	12,504	74,209	86,713	2,49,795	34,933	-13,395	0.3x	2.5x	-0.9x
Ashok Leyland		142	293.61	41,751	24,794	66,545	38,397	31,047	717	1.7x	2.1x	58.2x
High										5.3x	38.0x	93.4x
75th Percentile										1.6x	31.1x	43.5x
Average										1.6x	16.7x	-2.1x
Median										0.9x	9.7x	-21.5x
25th Percentile										0.7x	4.0x	-45.2x
Low										0.3x	2.1x	-75.3x

Tata Motors Comparable Valuations

	EV/Revenue	EV/EBITDA	P/E
Implied Enterprise Value	2,97,269.6	3,01,806.4	1,85,437.0
Net Debt	1,03,685.0	1,03,685.0	1,03,685.0
Implied Market Value	1,93,584.6	1,98,121.4	81,752.1
Shares Outstanding	332.14	332.14	332.14
Implied Value Per Share	582.8	596.5	246.1

Source: The Valuation School, Screener.in

Undervalued Undervalued Overvalued

Relevant Valuation Workings
extracted from the
Valuation Model / Equity Research Report
on
Asian Paints

Weighted Average Cost of Capital

All figures are in INR unless stated otherwise

Marginal tax rate should have been 25.168%

Peer Companies

Name	Country	Total Debt	Total Equity	Tax Rate ¹	Debt/Equity	Debt/Capital	Levered Beta ²	Unlevered Beta ³
Asian Paints	India	1,865.6	2,69,222.9	30.00%	0.69%	0.69%	0.93	0.92
Berger Paints	India	1,633.9	55,919.9	30.00%	2.92%	2.84%	0.89	0.87
Kansai Nerolac	India	314.3	20,637.9	30.00%	1.52%	1.50%	0.88	0.87
Akzo Nobel	India	73.3	10,476.1	30.00%	0.70%	0.69%	0.38	0.38
Indigo Paints	India	11.9	5,092.9	30.00%	0.23%	0.23%	0.69	0.69
Average				30.00%	1.21%	1.19%	0.75	0.75
Median				30.00%	0.70%	0.69%	0.88	0.87

Pre-tax cost of debt cannot be less than risk free rate

Cost of Debt

Pre-Tax Cost of Debt	6.86%
Tax Rate	30.00%
Post-tax Cost of Debt	4.80%

Cost of Equity

Risk Free Rate	7.23%
Equity Risk Premium	8.18%
Levered Beta ⁴	1.88
Cost of Equity	22.63%

Estimated Levered Beta of 1.88 vs Asian Paints' own trading levered beta of 0.93?

Capital Structure

		Current	Target
Total Debt	1,865.6	0.69%	1.19%
Market Capitalization	2,69,222.9	99.31%	98.81%
Total Capitalization	2,71,088.4	100.00%	100.00%
Debt / Equity		0.69%	1.21%

Levered Beta

Comps Median Unlevered Beta	0.87
Target Debt/Equity	1.21%
Tax Rate	30.00%
Levered Beta	1.88

1. Tax Rate considered as Marginal Tax Rate for the country
2. Levered Beta is based on 5 year monthly data
3. Unlevered Beta = Levered Beta / (1 + (1 - Tax Rate) x Debt/Equity)
3. Levered Beta = Unlevered Beta / (1 + (1 - Tax Rate) x Debt/Equity)

Weighted Average Cost of Capital

Cost of Equity	22.63%
Equity Weight	98.81%
Cost of Debt	4.80%
Debt Weight	1.19%

WACC → 22.42%

Ridiculously High WACC due to Beta

Calculation of PV of FCFF	Mar-22A	Mar-23F	Mar-24F	Mar-25F	Mar-26F	Mar-27F
EBIT	4,228.89	5,106.38	6,165.96	7,445.40	8,990.32	10,855.81
Tax Rate	25.00%	25.00%	25.00%	25.00%	25.00%	25.00%
EBIT(1-T)	3,171.67	3,829.79	4,624.47	5,584.05	6,742.74	8,141.85
Less: Reinvestment Rate	47.82%	48.15%	48.48%	48.81%	49.14%	49.14%
Free Cash Flow to Firm (FCFF)	1,655.13	1,985.88	2,382.64	2,858.54	3,429.36	4,140.95
Mid Year Convention		0.5	1.5	2.5	3.5	4.5
Discounting Factor		0.904	0.738	0.603	0.493	0.402
PV of FCFF		1,794.87	1,759.14	1,724.04	1,689.58	1,666.58

Expected Growth	20.75%
Terminal Growth	5.38%
WACC	22.42%

Calculation of Terminal Value

FCFF (n+1)	5,000.19
WACC	22.42%
Terminal Growth Rate	5.38%
Terminal Value	29,350.58

Terminal Value has been estimated basis very high reinvestment rate (last forecast year) without ensuring its alignment with terminal growth rate. Leading to a very depressed equity value as compared to current share price.

Implied EV/EBITDA multiple at the terminal value is less than 2.5x.

Calculation of Equity Value Per Share

PV of FCFF	8,634.21
PV of Terminal Value	11,812.54
Value of Operating Assets	20,446.75
Add: Cash	864.33
Less: Debt	776.00
Value of Equity	20,535.08
No of Shares	95.82
Equity Value Per Share	214.31
Share Price	2810
Discount/Premium	13.11x



Calculation of Pre-Tax Cost of Debt

Total Debt	1,865.6
Interest ^{TTM}	128.0
Pre-Tax Cost of Debt	6.86%

Very poor way of estimating pre-tax cost of debt without any analysis. One formula for all situations.

Relevant Valuation Workings
extracted from the
Valuation Model / Equity Research Report
on
Balkrishna Industries

Marginal tax rate should have been 25.168%

Poor data series to estimate average debt/capital which has been considered for Target D/E for WACC.

Weighted Average Cost of Capital

All figures in USD thousands unless stated
Peers Company

Name	Region	Debt	Equity	Average Tax Rate ¹	Debt/Equity	Debt/Capital	Levered Beta ²	Unlevered Beta ³
MRF	India	₹ 3,117.79	₹ 36,148.80	30%	9%	8%	0.68	0.74
Apollo Tyres	India	₹ 7,152.11	₹ 19,900.89	30%	36%	26%	1.22	1.47
Ceat	India	₹ 2,392.54	₹ 5,596.67	30%	43%	30%	0.66	0.96
JK Tyre & Ind	India	₹ 5,420.09	₹ 3,628.21	30%	149%	60%	1.02	2.07
Balkrishna Industry	India	₹ 3,173.00	₹ 38,940.85	30%	8%	8%	1.20	1.26

Pre-tax cost of debt cannot be less than risk free rate

Cost of Debt	
Pre-Tax Cost of Debt	0.72%
Tax Rate	30.00%
After-Tax Cost of Debt	0.51%

Average	30%	49%	26%	0.96	1.30
Median	30%	36%	26%	1.02	1.26

Estimated Levered Beta of 1.58 vs subject company's own trading levered beta of 1.20?

Cost of Equity	
Risk Free Rate	7.39%
Equity Risk Premium	15.41%
Levered Beta ⁴	1.58
Cost of Equity	20.04%

Capital Structure			
(Amt in CR)		Current	Target
Total Debt	₹ 3,173.00	8%	26%
Market Capitalization	₹ 38,940.85	92%	74%
Total Capitalization	₹ 42,113.85	100%	100%
Debt / Equity		8%	36%

Levered Beta	
Comps median unlevered beta	
Target Debt/Equity	
Tax Rate	
Levered Beta	
Weighted Average Cost of Capital	

Tax Rate is a 5-Year Average.
Levered beta is based on 5-year monthly data.
Unlevered Beta = Levered Beta / (1 + (1 - Tax Rate) x Debt-to-Equity)
Levered Beta = Unlevered Beta x (1 + (1 - Tax rate) x (Debt-to-Equity))

Poor benchmarking of Target D/E basis peer average as highlighted above leading to distorted WACC. Also significant difference between current and target D/E

	Cost	Weight
Debt Capital	1%	26%
Equity Capital	20%	74%
Weighted Average Cost of Capital	14.9%	

Calculation of Free Cash Flow of Firm

Particulars	Mar-22A	Mar-23F	Mar-24F	Mar-25F	Mar-26F
EBIT	1,992.00	2590.86	3369.75	4382.80	5700.40
Tax Rate	25%	25%	25%	25%	25%
PAT	1,494.00	1943.14	2527.31	3287.10	4275.30
Reinvestment Rate	102.00%	114.50%	127.00%	139.50%	51.68%
Free Cash Flow to Firm	-29.88	-281.76	-682.37	-1298.40	2065.83
Mid Year Convention		0.5	1.5	2.5	3.5
Discounting Factor		0.933	0.812	0.707	0.615
PV of FCFF		-262.86	-554.09	-917.64	1270.74

Expected Growth Rate	30%
Terminal Growth Rate	5.80%
WACC	14.9%

Very high reinvestment rates (net of depreciation) during explicit period.

Calculation of Terminal Value

FCFF(n+1)	2686.88
WACC	14.9%
Terminal Growth	5.80%
Terminal Value	29546.81

Sensitivity Analysis

	12.0%	13.0%	14.9%	16.0%
4%	920.998121	802.25484	636.6679	564.7683
5%	1073.66806	920.99812	715.8961	629.5373
5.8%	1231.26283	1039.7414	791.8159	690.4965
7%	1562.21185	1277.228	934.5258	802.2548

Calculation of Equity Value

PV of FCFF	-463.84
Terminal Value	18175.02
Value of Operating Asset	17711.18

Add: Cash	51.71
Less: Debt	2443.00

Total Equity Value	15319.89
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Total Number of Shares	19.33
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Equity Value Per Share	792.47
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Current Market Price Sha	1970
Premium/Discount	149%
(in times)	2.5X

Terminal Value has been estimated basis very high reinvestment rate (last forecast year) without ensuring its alignment with terminal growth rate. Leading to a very depressed equity value as compared to current share price.

Amt in Crore

Comparable Company Valuation

Company	Ticker	Market Data				Financials				Valuation			
		Share Price	Shares Outstanding	Equity Value	Net Debt	Enterprise value	Revenue	Ebitda	Neticome	EV/Revenue	EV/EBITDA	P/E	
Balkrishna Inds		2,062	19.33	39,857	3,121	42,979	9,817	2,418	1,172	4.4x	17.8x	34.0x	
MRF		87,231	0.42	36,637	2,937	39,574	22,472	2,371	594	1.8x	16.7x	61.7x	
Apollo Tyres		335	63.51	21,266	6,071	27,338	23,899	2,709	791	1.1x	10.1x	26.9x	
CEAT		1,395	4.05	5,649	2,356	8,005	11,032	764	75	0.7x	10.5x	74.9x	
JK Tyre & Indust		166	24.62	4,082	5,244	9,326	14,324	1,110	190	0.7x	8.4x	21.5x	
Goodyear India		1,079	2.31	2,491	-378	2,114	2,873	195	107	0.7x	10.8x	23.4x	
TVS Srichakra		2,780	0.77	2,141	692	2,833	2,972	176	63	1.0x	16.1x	33.7x	
Dolfin Rubbers		128	1.00	128	11	139	84	6	3	1.7x	24.2x	46.2x	
Birla Tyres		4	14.26	63	1,152	1,215	1	-14	-487	980.0x	-84.4x	-0.1x	
Krypton Industri		21	1.47	30	10	41	36	9	5	1.1x	4.5x	6.5x	
Innovative Tyres		2	1.80	4	37	42	52	-49	-59	0.8x	-0.9x	-0.1x	
High										980.0x	24.2x	74.9x	
75 percentile										1.7x	16.4x	40.1x	
Average										90.4x	3.1x	29.9x	
Median										1.1x	10.5x	26.9x	
25 Percentile										0.8x	6.5x	14.0x	
Low										0.7x	-84.4x	-0.1x	
Comparable Company Valuation													
Implied Enterprise Value										11,083	25,339	34,655	
Net Debt										3,121	3,121	3,121	
Implied Equity Value										7,962	22,218	31,534	
Shares Outstanding										19	19	19	
Implied Share Value										412	1,149	1,631	

Wide variation in multiples (very diverse). No benchmarking has been done.
 Valuation has been done basis the median multiple.
 Conclusion has been made about over-valuation or under-valuation by comparing the subject company's own multiple and median peer multiple without analysing the reasons for divergence in multiples.

Overvalued Overvalued Overvalued

Relevant Valuation Workings
extracted from the
Valuation Model / Equity Research Report
on
ITC Limited

Weighted Average Cost Of Capital

All Figures are Stated In INR Unless Stated Otherwise

Marginal tax rate should have been 25.168%

Poor data series to estimate average debt/capital which has been considered for Target D/E for WACC.

Peer Comps

Name Of The Company	Country	Total Debt	Total Equity	Tax Rate ¹	Debt/Equity	Debt/Capital	Leveraged Beta ²	Unleveraged Beta ³
ITC	India	306.04	552583.3	30%	0.06%	0.06%	0.83	0.83
IWPC	India	79.18	204.4	30%	38.74%	27.92%	0.38	0.65
VST Industries	India	0	5659.92	30%	0.00%	0.00%	0.62	0.62
NTC Industries	India	6.6	115.49	30%	5.71%	5.41%	0.30	0.34
Golden Tobacco	India	2.33	87.24	30%	2.67%	2.60%	0.84	0.86
Average				30%	9%	7%	0.60	0.66
Median				30%	3%	3%	0.62	0.65

Poor Selection of Comps for diversified ITC

Ridiculous Pre-tax cost of debt of 25.41%

Cost Of Debt

Pre-Tax Cost Of Debt	25.41%
Tax Rate	30.00%
post Tax Cost Of Debt	17.79%

Cost Of Equity

Risk Free Rate	7.19%
Equity Risk Premium	9.62%
Levered Beta ⁴	0.68
Cost Of Equity	13.68%

Capital Structure

	Current	Target
Total Debt	306.0	7.20%
Market Capitalisation	552583.3	92.80%
Total Capital	552889.3	100.00%
Debt / Equity	0.06%	7.75%

Levered Beta

Comps Median Unlevered Beta	0.62
Target Debt / Equity	7.20%
Tax Rate	30.00%
Levered Beta	0.68

#

Notes

- 1. Tax Rate Considered as Marginal Tax Rate for the Country*
- 2. Leveraged Beta is Based on 2 Year Weekly Data*
- 3. Unlevered Beta = Levered Beta / (1 + (1 - Tax Rate) * Debt / Equity)*
- 4. Levered Beta = Unlevered Beta * (1 + (1 - Tax Rate) * Debt / Equity)*

Weighted Average Cost Of Capital

Cost Of Equity	13.68%
Equity Weight	92.80%
Cost Of Debt	17.79%
Debt Weight	7.20%
<hr style="border-top: 1px dashed black;"/>	
WACC	13.98%

Discounted CashFlow Valuation - ITC LTD

# PV Of FCFF	Mar-23 A	Mar-24 E	Mar-25 E	Mar-26 E	Mar-27 E
EBIT	26491.79	27536.784	28622.99875	29752.06	30925.659
Tax Rate	30.00%	30.00%	30.00%	30.00%	30.00%
NOPAT	18544.253	19275.749	20036.09912	20826.442	21647.961
Less: Reinvestment Rate	10.30%	10.30%	10.30%	10.30%	10.30%
Free Cash Flow To Firm	16634.36964	17290.483	17972.47529	18681.368	19418.221
Mid Year Convention		0.5	1.5	2.5	3.5
Discounting Factor		0.937	0.822	0.721	0.633
PV Of FCFF		16195.790	14770.422	13470.499	12284.980

Expected Growth Rate	3.94%
Terminal Growth Rate	6.25%
Terminal Growth Discounting Factor	0.63
WACC	13.98%

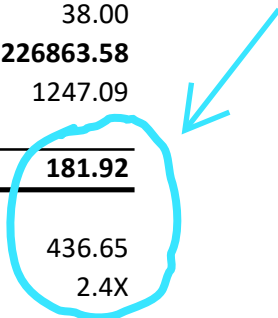
Calculation Of Terminal value

FCFF(n+1)	20184.19
WACC	13.98%
Terminal Growth Rate	6.25%
Terminal Value	261280.529

Calculation Of Equity Value Per Share

PV of FCFF	56721.690
PV of Terminal Value	165299.70
Value Of Operating Assets	222021.39
Add: Cash	4880.19
Less: Debt	38.00
Equity Value	226863.58
No. Of Shares	1247.09
Equity Value Per Share	181.92
Share Price	436.65
Discount/Premium	2.4X

Poor assumptions leading to depressed equity value.



Relevant Valuation Workings
extracted from the
Valuation Model / Equity Research Report
on
Titan Company Limited

TITAN COMPANY LTD.



Weighted Average Cost of Capital

(All the values are in INR- Crores unless stated otherwise)

Marginal tax rate should have been 25.168%

Peer Companies

Name of Company	Country	Total Debt	Total Equity	Debt/Equity	Debt/Capital	Tax Rate ¹	Levered Beta ²	Unlevered Beta ³
Titan Company	India	9367.00	270646.05	3.46%	3.35%	30.00%	1.19	1.16
Kalyan Jewellers	India	4295.49	22722.97	18.90%	15.90%	30.00%	0.81	0.72
Rajesh Exports	India	724.01	14916.53	4.85%	4.63%	30.00%	0.65	0.63
Vaibhav Global	India	193.32	6525.13	2.96%	2.88%	30.00%	1.24	1.21
Thangamayil Jew.	India	568.36	3486.69	16.30%	14.02%	30.00%	0.72	0.65
Average				9.30%	8.15%	30.00%	0.92	0.87
Median				4.85%	4.63%	30.00%	0.81	0.72

Pre-tax cost of debt cannot be less than risk free rate

Cost of Debt

Pre Tax Cost of Debt	3.67%
Tax Rate	30.00%
Post Tax Cost of Debt	2.57%

Cost of Equity

Risk Free Rate	40.25%
Enterprise Risk Free Rate	(23.45%)
Levered Beta ⁴	0.76
Cost of Equity	22.41%

Ridiculous Assumptions

Capital Structure

		Current	Target
Total Debt	9367.00	3.35%	8.15%
Market Capitalization	270646.05	96.65%	91.85%
Total Capital	280013.05	100.00%	100.00%
Debt/ Equity		3.46%	8.88%

Levered Beta

Median Comps Unlevered Beta	0.72
Tax Rate	30.00%
Target Debt to Equity Ratio	8.88%
Levered Beta	0.76

Weighted Average Cost of Capital

Cost of Debt	2.57%
Debt Weight	8.15%
Cost of Equity	22.41%
Equity Weight	91.85%
WACC	20.80%

Ridiculously High WACC

TITAN COMPANY LTD.



Calculation of PV of FCFF	2023A	2024F	2025F	2026F	2027F
EBIT	₹ 4,441.00	₹ 4,907.75	₹ 5,423.55	₹ 5,993.57	₹ 6,623.49
Tax Rate	30.00%	30.00%	30.00%	30.00%	30.00%
EBIT(1-T)	₹ 3,108.70	₹ 3,435.42	₹ 3,796.49	₹ 4,195.50	₹ 4,636.45
Less: Reinvestment Rate	98.45%	81.40%	68.61%	59.02%	30.25%
Free Cash Flow to Firm (FCFF)	₹ 48.05	₹ 638.88	₹ 1,191.53	₹ 1,719.16	₹ 3,233.92
Mid Year Convention		0.5	1.5	2.5	3.5
Discounting Factor		0.910	0.753	0.624	0.516
PV of FCFF		₹ 581.29	₹ 897.49	₹ 1,071.98	₹ 1,669.36

Very high reinvestment rates (net of depreciation) during explicit period.

Expected Growth	10.51%
Terminal Growth	6.10%
WACC	20.80%

Calculation of Terminal Value	
FCFF (n+1)	₹ 3,573.81
Terminal Growth	6.10%
WACC	20.80%
Terminal Value	₹ 24,318.73

	Scenario Analysis - Value of Operating Assets				
	2.00%	3.00%	5.00%	6.10%	9.00%
10.00%	₹ 27,280.20	₹ 30,574.49	₹ 41,116.24	₹ 51,522.85	₹ 1,88,700.77
14.00%	₹ 19,593.50	₹ 20,991.08	₹ 24,717.96	₹ 27,572.10	₹ 41,116.24
19.00%	₹ 15,071.92	₹ 15,750.15	₹ 17,397.30	₹ 18,520.94	₹ 22,668.18
20.80%	₹ 14,032.91	₹ 14,584.20	₹ 15,896.10	₹ 16,769.82	₹ 19,854.07
25.00%	₹ 12,241.01	₹ 12,605.60	₹ 13,444.15	₹ 13,980.99	₹ 15,750.15

Calculation of Equity Value Per Share	
PV of FCFF	₹ 4,220.11
PV of Terminal Value	₹ 12,553.38
Value of Operating Assets	₹ 16,773.50
Add: Cash	₹ 1,343.00
Less: Debt	₹ 7,494.00
Equity Value	10622.4956
No. of Equity Shares	88.78
Equity Value Per Share	₹ 119.65

	Scenario Analysis - Equity Value Per Share				
	5.00%	6.00%	6.05%	6.10%	8.00%
10.00%	₹ 393.85	₹ 497.75	₹ 504.32	₹ 511.07	₹ 1,017.24
14.00%	₹ 209.14	₹ 238.00	₹ 239.63	₹ 241.29	₹ 324.58
19.00%	₹ 126.68	₹ 138.10	₹ 138.71	₹ 139.33	₹ 167.16
20.80%	₹ 109.77	₹ 118.65	₹ 119.13	₹ 119.61	₹ 140.59
25.00%	₹ 82.15	₹ 87.62	₹ 87.91	₹ 88.20	₹ 100.48

Current Stock Price	₹ 3,049.00
Premium/Discount	25.48x

Terminal Value has been estimated basis very high reinvestment rate (last forecast year) without ensuring its alignment with terminal growth rate. Leading to a very depressed equity value as compared to current share price.

Implied EV/EBITDA multiple at the terminal value is less than 3.0x.

TITAN COMPANY LTD.



(All amount ar in INR- crs)

Comparable Company Valuation

Poor selection of comps for CCM / Relative Valuation

Company	Ticke	Market Data				Financials			Valuations			
		Share Price	Shares Outstanding	Equity Value	Net Debt	Enterprise Value	Revenue	EBITDA	Net Income	EV/ Revenue	EV/EBITDA	P/E
Titan Company		₹ 3,079.40	88.78	₹ 2,73,389.13	₹ 8,024.00	₹ 2,81,408.87	₹ 43,029.00	₹ 5,187.26	₹ 3,240.00	6.54x	54.25x	86.85x
Kalyan Jewellers		₹ 227.85	103.01	₹ 23,470.83	₹ 3,313.61	₹ 26,783.37	₹ 15,114.55	₹ 1,214.67	₹ 467.72	1.77x	22.05x	57.26x
Rajesh Exports		₹ 487.35	29.53	₹ 14,391.45	(₹ 1,372.34)	₹ 13,017.15	₹ 3,75,881.02	₹ 1,619.05	₹ 1,469.90	0.03x	8.04x	8.86x
Vaibhav Global		₹ 442.05	16.53	₹ 7,307.09	(₹ 45.90)	₹ 7,261.09	₹ 2,720.90	₹ 248.84	₹ 115.13	2.67x	29.18x	63.07x
Thangamayil Jew.		₹ 1,257.90	2.74	₹ 3,446.65	₹ 491.97	₹ 3,943.54	₹ 3,289.60	₹ 212.59	₹ 119.36	1.20x	18.55x	33.04x
Senco Gold		₹ 404.55	7.77	₹ 3,143.35	₹ 747.33	₹ 3,889.19	₹ 4,077.40	₹ 347.87	₹ 158.48	0.95x	11.18x	24.54x
Goldiam Intl.		₹ 126.05	10.90	₹ 1,373.95	(₹ 103.31)	₹ 1,270.32	₹ 518.05	₹ 116.76	₹ 81.13	2.45x	10.88x	15.66x
PC Jeweller		₹ 26.75	46.54	₹ 1,244.95	₹ 3,694.32	₹ 4,939.28	₹ 1,992.94	₹ 212.53	(₹ 449.25)	2.48x	23.24x	-10.99x
Asian Star Co.		₹ 755.00	1.60	₹ 1,208.00	₹ 309.59	₹ 1,518.35	₹ 4,137.73	₹ 141.90	₹ 84.92	0.37x	10.70x	17.88x
D. P. Abhushan		₹ 433.50	2.23	₹ 966.71	₹ 105.46	₹ 1,070.21	₹ 2,013.27	₹ 81.63	₹ 48.02	0.53x	13.11x	22.29x

High										6.54x	54.25x	86.85x
75th Percentile										2.47x	22.94x	51.21x
Mean										1.90x	20.12x	31.85x
Median										1.49x	15.83x	23.41x
25th Percentile										0.95x	11.18x	17.88x
Low										0.03x	8.04x	-10.99x

Wide variation in multiples (very diverse). No benchmarking has been done.

Valuation has been done basis the median multiple. Conclusion has been made about over-valuation or under-valuation by comparing the subject company's own multiple and median peer multiple without analysing the reasons for divergence in multiples.

Titan Company Comparable Valuation

Implemented Enterprise Value		₹ 63,915.62	₹ 82,114.33	₹ 83,884.27
Net Debt		₹ 8,024.00	₹ 8,024.00	₹ 8,024.00
Implemented Equity Value		₹ 55,891.62	₹ 74,090.33	₹ 75,860.27
Shares Outstanding		88.78	88.78	88.78
Implied Value Per Share		₹ 629.55	₹ 834.54	₹ 854.47

(Source: Screener.in , The Valuation School)

Overvalued Overvalued Overvalued

Relevant Valuation Workings
extracted from the
Financial Modeling and Valuation Report
on
Adani Enterprises Limited

Weighted Average Cost Of Capital

All figure are in INR unless stated o

Marginal tax rate should have been 25.168%

Very Poor Selection of Comps. They are as different as chalk and cheese.

Comparable Companies Beta

Peer Comps

Name of the comp	Country	Total Debt	Total equity	Tax Rate ¹	Debt/Equity	Debt/ Capital	Levered Beta ²	Unlevered Beta ³
Adani Enterp.	india	53,200.5	343,091.4	30.00%	161.00%	13.42%	0.76	0.36
Aegis Logistics	india	1,923.9	15,005.7	30.00%	54.00%	11.36%	0.72	0.52
Redington	india	3,320.8	15,357.4	30.00%	48.00%	17.78%	1.00	0.75
MMTC	india	202.5	6,565.5	30.00%	14.00%	2.99%	1.04	0.95
Redtape	india	80.7	6,368.9	30.00%	17.00%	1.25%	0.33	0.29
Average				30.00%	58.80%	9.36%	0.77	0.57
Median				30.00%	48.00%	11.36%	0.76	0.52

Cost Of Debt

Pre-Tax Cost of Debt	7.77%
Tax Rate	30.00%
Post Tax Cost of Debt	5.44%

Cost of Equity

Risk Free Rate	7.19%
Equity Risk Premium	8.25%
Levered Beta ⁴	0.66
Cost of Equity	12.66%

Capital Structure

	Current	Target
Total Debt	53,200.5 13.42%	9.36%
Market Capitalization	343,091.4 86.58%	90.64%
Total Capital	396,291.8 100.00%	100.00%
Debt / Equity	15.51%	10.33%

Levered Beta

Comps Median Unlevered Beta	0.52
Target Debt/Equity	10.33%
Tax Rate	30.00%
Levered Beta	0.66

Notes:

- 1) Tax rate considered as marginal tax rate for the country
- 2) Levered beta is based on 5 year monthly data
- 3) Unlevered beta = levered beta / (1 + (1 - tax rate) * debt/equity)
- 4) Levered beta = Unlevered beta * (1 + (1 - tax rate) * debt/equity)

Weighted Average Cost of Capital

Cost of Equity	12.66%
Equity Weight	90.64%
Cost of Debt	5.44%
Debt Weight	9.36%

WACC 11.99%

THE VALUATION SCHOOL

Calculation of PV of FCFF	Mar-22A	Mar-23E	Mar-24E	Mar-25E	Mar-26E	Mar-27E
EBIT	7,483.88	7,778.74	8,085.23	8,403.79	8,734.89	9,079.05
Tax Rate	25.00%	25.00%	25.00%	25.00%	25.00%	25.00%
EBIT(1-T)	5,612.91	5,834.06	6,063.92	6,302.84	6,551.17	6,809.29
Less: Reinvestment Rate	21.89%	32.18%	42.48%	52.77%	63.07%	63.07%
Free Cash Flow To Firm (FCFF)	4,384.38	3,956.48	3,488.04	2,976.55	2,419.35	2,514.67
Mid Year Convention		0.5	1.5	2.5	3.5	4.5
Discounting Factor		0.945	0.844	0.754	0.673	0.601
PV of FCFF		3,738.75	2,943.30	2,242.86	1,627.88	1,510.92

Expected Growth	3.94%
Terminal Growth	5.38%
WACC	11.99%

Calculation of Terminal Value	
FCFF (n+1)	2,613.75
WACC	11.99%
Terminal Growth Rate	5.38%
Terminal Value	21,806.27

Very high reinvestment rates (net of depreciation) during explicit period.

	Sensitivity Analysis			
	10.99%	11.99%	12.99%	13.99%
3.38%	26,353.5	25,161.7	24,153.4	23,289.2
4.38%	26,353.5	25,161.7	24,153.4	23,289.2
5.38%	26,353.5	25,161.7	24,153.4	23,289.2
6.38%	26,353.5	25,161.7	24,153.3	23,289.2
7.38%	26,353.5	25,161.7	24,153.3	23,289.2

Calculation of Equity Per Share	
PV of FCFF	12,063.71
PV of Terminal Value	13,102.11
Value of Operating Assets	25,165.83
Add: Cash	5,373.69
Less: Debt	41,023.00
Value of Equity	-10,483.48
No of Shares	114.05
Equity Value Per Share	-91.92

Terminal Value has been estimated basis very high reinvestment rate (last forecast year) without ensuring its alignment with terminal growth rate. Leading to a very depressed equity value as compared to current share price.

Implied EV/EBITDA multiple at the terminal value is less than 2.0x.

Share Price	2,507.70
Discount/Premium	-27.28x

Negative Equity Value?

Poor selection of comps for CCM / Relative Valuation

Comparable Company Valuation

Company	Ticker	Market Data				Financials			Valuation			
		Share Price	Share Outstanding	Equity Value	Net Debt	Enterprise Value	Revenue	EBITDA	Net Income	EV/Revenue	EV/EBITDA	P/E
Adani Enterp.		2,496	114.00	284,516	-47,827	332,342	121,572	30	332,312	2.7x	10957.5x	0.9x
Aegis Logistics		369	35.10	12,962	-659	13,621	8,492	15	13,606	1.6x	921.6x	1.0x
Redington		157	78.16	12,240	-1,370	13,610	83,761	6	13,604	0.2x	2257.1x	0.9x
Redtape		464	13.82	6,414	-55	6,468	1,468	26	6,443	4.4x	250.9x	1.0x
MMTC		42	150.00	6,225	1,143	5,082	3,528	11	5,071	1.4x	474.9x	1.2x
Rain Industries		157	33.63	5,288	-7,702	12,990	20,915	4	12,985	0.6x	2979.3x	0.4x
High										4.4x	10957.5x	1.2x
75th percentile										2.5x	2798.8x	1.0x
Average										1.8x	2973.6x	0.9x
Median										1.5x	1589.3x	0.9x
25th percentile										0.8x	586.6x	0.9x
Low										0.2x	250.9x	0.4x

Ridiculous EV/EBITDA and P/E Multiples. No benchmarking has been done. Valuation has been done basis the median multiple. The students have no idea what they are doing.

Adani Enterprises Comparable Valuation

	EV/Revenue	EV/EBITDA	P/E
Implied Enterprise Value	185,047	48,204	259,960
Net Debt	-47,827	-47,827	-47,827
Implied Market Value	232,874	96,031	307,787
Share Outstanding	114.00	114.00	114.00
Implied Value Per Share	2,042.75	842.38	2,699.88

Source: The valuation school, Screener.in

Overvaluted Overvaluted Undervaluted

Relevant Valuation Workings
extracted from the
Valuation Model / Equity Research Report
on
Asian Paints

Weighted Average Cost of Capital

All figures are in INR. Unless Stated

Marginal tax rate should have been 25.168%

Return on Markets

Peer Comps

Name of the comp	Ticker	Country	Total Debt	Total Equity	Tax Rate ¹	Debt/Equity	Debt/Capital	Levered Beta ²	Unlevered Beta ³
Asian Paints		India	1865.6	278315.6	30.00%	0.67%	0.67%	0.93	0.92
Berger Paints		India	1633.9	58910.4	30.00%	2.77%	2.70%	0.90	0.88
Kansai Nerolac		India	314.3	20791.6	30.00%	1.51%	1.49%	0.88	0.87
Akzo Nobel		India	73.3	10075.2	30.00%	0.73%	0.72%	0.38	0.38
Indigo Paints		India	11.9	5404.8	30.00%	0.22%	0.22%	0.67	0.67

Year	Annual
2000	-14.65%
2001	-16.18%
2002	3.25%
2003	71.90%
2004	10.68%
2005	36.34%
2006	39.83%
2007	54.77%
2008	-51.79%
2009	75.76%
2010	17.95%
2011	-24.62%
2012	27.70%
2013	6.76%
2014	31.39%
2015	-4.06%
2016	3.01%
2017	28.65%
2018	3.15%
2019	12.02%
2020	14.17%
2021	24.12%
2022	4.32%

Pre-tax cost of debt cannot be less than risk free rate

Average	30.00%	1.18%	1.16%	0.75	0.74
Median	30.00%	0.73%	0.72%	0.88	0.87

Cost of Debt

Pre-tax Cost of Debt	6.86%
Tax Rate	30.00%
Post Tax Cost of Debt	4.80%

Cost of Equity

Risk Free Rate	7.23%
Equity Risk Premium	8.18%
Levered Beta ⁴	0.88
Cost of Equity	14.42%

Capital Structure

		Current	Target
Total Debt	1865.6	0.67%	1.16%
Market Capitalization	278315.6	99.33%	98.84%
Total Capital	280181.1	100.00%	100.00%
Debt/Equity		0.67%	1.17%

Levered Beta

Comps Median Unlevered Beta	0.87
Target Debt/Equity	1.17%
Tax Rate	30.00%
Levered Beta	0.88

Weighted Average Cost of Capital

Cost of Equity	14.42%
Equity Weight	98.84%
Cost of Debt	4.80%
Debt Weight	1.16%
WAAC	14.31%

Average Return	15.41%
Dividend Yield	1.44% ¹
Total Market Return	15.41%

Notes:

1. Tax rate considered as marginal tax rate for the country
2. levered beta is based on 5 years monthly data
3. Unlevered Beta = Levered beta / (1 + (1 - tax rate) * Debt/Equity)
4. levered Beta = Unlevered beta * (1 + (1 - tax rate) * Debt/Equity)

DCF Calculation

Calculation of PV of FCFF	Mar-22A	Mar-23E	Mar-24E	Mar-25E	Mar-26E	Mar-27E
EBIT	4,228.89	5,106.38	6,165.96	7,445.40	8,990.32	10,855.81
Tax Rate	25.00%	25.00%	25.00%	25.00%	25.00%	25.00%
EBIT(1-T)	3,171.67	3,829.79	4,624.47	5,584.05	6,742.74	8,141.85
Reinvestment Rate	47.82%	48.15%	48.48%	48.81%	49.14%	49.14%
Free Cash Flow to Firm (FCFF)	1,655.13	1,985.88	2,382.64	2,858.54	3,429.36	4,140.95
Mid Year Convection		0.5	1.5	2.5	3.5	4.5
Discounting Factor		0.935	0.818	0.716	0.626	0.548
PV of FCFF		1,857.42	1,949.53	2,046.12	2,147.40	2,268.37

Expected Growth	20.75%
Terminal Growth	5.38%
WAAC	14.31%

Sensitivity Analysis

	12.00%	13.00%	14.31%	15.00%
3.00%	55557.71	50001.94	44210.38	41668.28
4.00%	62502.42	55557.71	48498.49	45456.31
5.38%	75531.63	65619.34	55993.21	51977.07
6.00%	83336.56	71431.34	60170.80	55557.71

Calculation of Terminal Value

FCFF(n+1)	5,000.19
WACC	14.31%
Terminal Growth Rate	5.38%
Terminal Value	55,990.84

Calculation of Equity Value Per Share

PV of FCFF	10,268.83
PV of Terminal Value	30,671.25
Value of Operating Assets	40,940.08
Add: Cash	864.33
Less: Debt	776
Value of Equity	41,028.41
No. of Shares	95.99
Equity Value Per Share	427.43
Share Price	2891.1
Discount/Premium	6.76X

Very high reinvestment rates (net of depreciation) during explicit period.

Terminal Value has been estimated basis very high reinvestment rate (last forecast year) without ensuring its alignment with terminal growth rate. Leading to a very depressed equity value as compared to current share price.

Amount in Crores

Comparable Company Valuation

Company	Ticker	Market Data				Financials			Valuation			
		Share Price	Shares Outstanding	Equity Value	Net Debt	Enterprise Value	Revenue	EBITDA	Net Income	EV/Revenue	EV/EBITDA	P/E
Asian Paints		2885	95.92	276734	1,001.2	277735	33594	6383	3811	8.24	43.36	72.62
Berger Paints		589	97.14	57249	1,320.9	58570	10312	1547	895	5.55	37.01	63.99
Kansai Nerolac		378	53.89	20343	208.3	20552	7346	735	391	2.77	27.69	51.98
Akzo Nobel		2313	4.55	10526	(-384.3)	10141	3718	520	314	2.83	20.22	33.49
Indigo Paints		1158	4.76	5513	(-87.8)	5425	1036	176	118	5.32	31.30	46.78
High										8.2x	43.4x	72.6x
75 Percentile										5.6x	37.0x	64.0x
Average										4.9x	31.9x	53.8x
Median										5.3x	31.3x	52.0x
25 Percentile										2.8x	27.7x	46.8x
Low										2.8x	20.2x	33.5x
Cipla Comparable Valuation										EV/Revenue	EV/EBITDA	P/E
Implied Enterprise Value										178725.6	199752.1	199080.9
Net Debt										1001	1001	1001
Implied Market Value										177724	198751	198080
Shares Outstanding										95.92	95.92	95.92
Implied Value Per Share										1852.8	2072.0	2065.1
										Overvalued	Overvalued	Overvalued

Wide variation in multiples (very diverse). No benchmarking has been done.
 Valuation has been done basis the median multiple.
 Conclusion has been made about over-valuation or under-valuation by comparing the subject company's own multiple and median peer multiple without analysing the reasons for divergence in multiples.

Source : The Valuation School, Screener.in

Relevant Valuation Workings
extracted from the
Valuation Model / Equity Research Report
on
Tata Motors

Poor data series to estimate average debt/capital which has been considered for Target D/E for WACC.

Weighted Average Cost Of Capital
All figure are in INR unless stated

Marginal tax rate should have been 25.168%

Peer Comps

Name of the comp	Country	Total Debt	Total equity	Tax Rate 1	Comparable Companies Beta			
					Debt/Equity	Debt/Capital	Levered Beta 2	Unlevered Beta 3
Tata Motors	india	134,113.4	224,882.6	30.00%	59.64%	37.36%	1.14	0.81
Hero Motocorp	india	567.5	58,494.1	30.00%	0.97%	0.96%	0.81	0.81
TVS Motor Co.	india	22,375.6	63,729.9	30.00%	35.11%	25.99%	0.89	0.71
Eicher Motors	india	288.4	91,635.9	30.00%	0.31%	0.31%	1.19	1.19
Bajaj Auto	india	124.2	130,600.4	30.00%	0.10%	0.10%	0.67	0.67
Average				30.00%	1.08%	1.06%	1.00	0.84
Median				30.00%	1.13%	1.11%	1.00	0.81

Cost Of Debt

Pre-Tax Cost of Debt	7.77%
Tax Rate	30.00%
Post Tax Cost of Debt	5.44%

Cost of Equity

Risk Free Rate	7.21%
Equity Risk Premium	8.23%
Levered Beta 4	1.05
Cost of Equity	15.82%

Capital Structure

	Current	Target
Total Debt	134,113.4	37.36%
Market Capitalization	224,882.6	62.64%
Total Capital	358,996.0	100.00%

Levered Beta

Comps Median Unlevered Beta	0.81
Target Debt/Equity	1.07%
Tax Rate	30%
Levered Beta	1.05

Debt / Equity

Notes:

- 1) Tax rate considered as
- 2) Levered beta is based on
- 3) Unlevered beta = levered
- 4) Levered beta = Unlevered

Poor benchmarking of Target D/E basis peer average as highlighted above leading to distorted WACC. Also significant difference between current and target D/E

Weighted Average Cost of Capital

Cost of Equity	15.82%
Equity Weight	98.94%
Cost of Debt	5.44%
Debt Weight	1.06%
WACC	15.71%

Calculation of PV of FCFF	Mar-22A	Mar-23E	Mar-24E	Mar-25E	Mar-26E	Mar-27E
EBIT	2,101.68	2,226.31	2,358.33	2,498.18	2,646.32	2,803.25
Tax Rate	25.00%	25.00%	25.00%	25.00%	25.00%	25.00%
EBIT(1-T)	1,576.26	1,669.73	1,768.75	1,873.63	1,984.74	2,102.44
Less: Reinvestment Rate	-0.19%	12.78%	25.75%	38.71%	51.68%	51.68%
Free Cash Flow To Firm (FCFF)	1,579.21	1,456.34	1,313.36	1,148.29	959.03	1,015.90
Mid Year Convention		0.5	1.5	2.5	3.5	4.5
Discounting Factor		0.930	0.803	0.694	0.600	0.519
PV of FCFF		1,353.90	1,055.23	797.37	575.55	526.92

Expected Growth	5.93%
Terminal Growth	5.38%
WACC	15.71%

Calculation of Terminal Value	
FCFF (n+1)	1,076.14
WACC	15.71%
Terminal Growth Rate	5.38%
Terminal Value	6,851.62

Sensitivity Analysis		14.51%	15.71%	16.71%	17.71%
3.38%	8,155.7	7,861.9	7,649.3	7,460.6	
4.38%	8,155.7	7,861.9	7,649.3	7,460.6	
5.38%	8,155.7	7,861.9	7,649.2	7,460.6	
6.38%	8,155.7	7,861.9	7,649.2	7,460.6	
7.38%	8,155.7	7,861.9	7,649.2	7,460.6	

Calculation of Equity Per Share	
PV of FCFF	4,308.96
PV of Terminal Value	3,553.76
Value of Operating Assets	7,862.73
Add: Cash	40,669.19
Less: Debt	139,677.00
Value of Equity	-91,145.08
No of Shares	357.83
Equity Value Per Share	-254.72

Share Price	616
Discount/Premium	-2.42x

Terminal Value has been estimated basis very high reinvestment rate (last forecast year) without ensuring its alignment with terminal growth rate. Leading to a very depressed equity value as compared to current share price.

Implied EV/EBITDA multiple at the terminal value is less than 2.0x.

Negative Equity Value?

Comparable Company Valuation

Company	Ticker	Market Data				Financials			Valuation			
		Share Price	Share Outstanding	Equity Value	Net Debt	Enterprise Value	Revenue	EBITDA	Net Income	EV/Revenue	EV/EBITDA	P/E
Ashok Leyland		186	293.61	54,729	28,974	83,703	42,894	1,173,525	1,924	2.0x	0.1x	28.4x
Tata Motors-DVR		400	50.85	20,345	74,209	94,554	249,795	256,242	-13,395	0.4x	0.4x	-1.5x
Olectra Greentec		1,193	8.21	9,793	-34	9,759	1,026	607,963	68	9.5x	0.0x	143.4x
Force Motors		3,378	1.32	4,459	813	5,272	5,546	53,916	219	1.0x	0.1x	20.4x
SML ISUZU		1,313	1.45	1,904	259	2,163	1,953	40,066	49	1.1x	0.1x	38.6x
High										9.5x	0.4x	143.4x
75th percentile										1.7x	0.1x	36.1x
Average										2.5x	0.1x	41.3x
Median										1.0x	0.1x	24.4x
25th percentile										0.8x	0.1x	19.1x
Low										0.4x	0.0x	-1.5x

Wide variation in multiples (very diverse). No benchmarking has been done.
 Valuation has been done basis the median multiple.
 Conclusion has been made about over-valuation or under-valuation by comparing the subject company's own multiple and median peer multiple without analysing the reasons for divergence in multiples.

Tata Motors Comparable Valuation

	EV/Revenue	EV/EBITDA	P/E
Implied Enterprise Value	387,178	183,222	364,116
Net Debt	97,098	97,098	97,098
Implied Market Value	290,080	86,124	267,019
Share Outstanding	332.15	332.15	332.15
Implied Value Per Share	873.34	259.29	803.91

Source: The valuation school, Screener.in

Undervalued Overvalued Undervalued