

DCF Valuation

Presented by Sneh

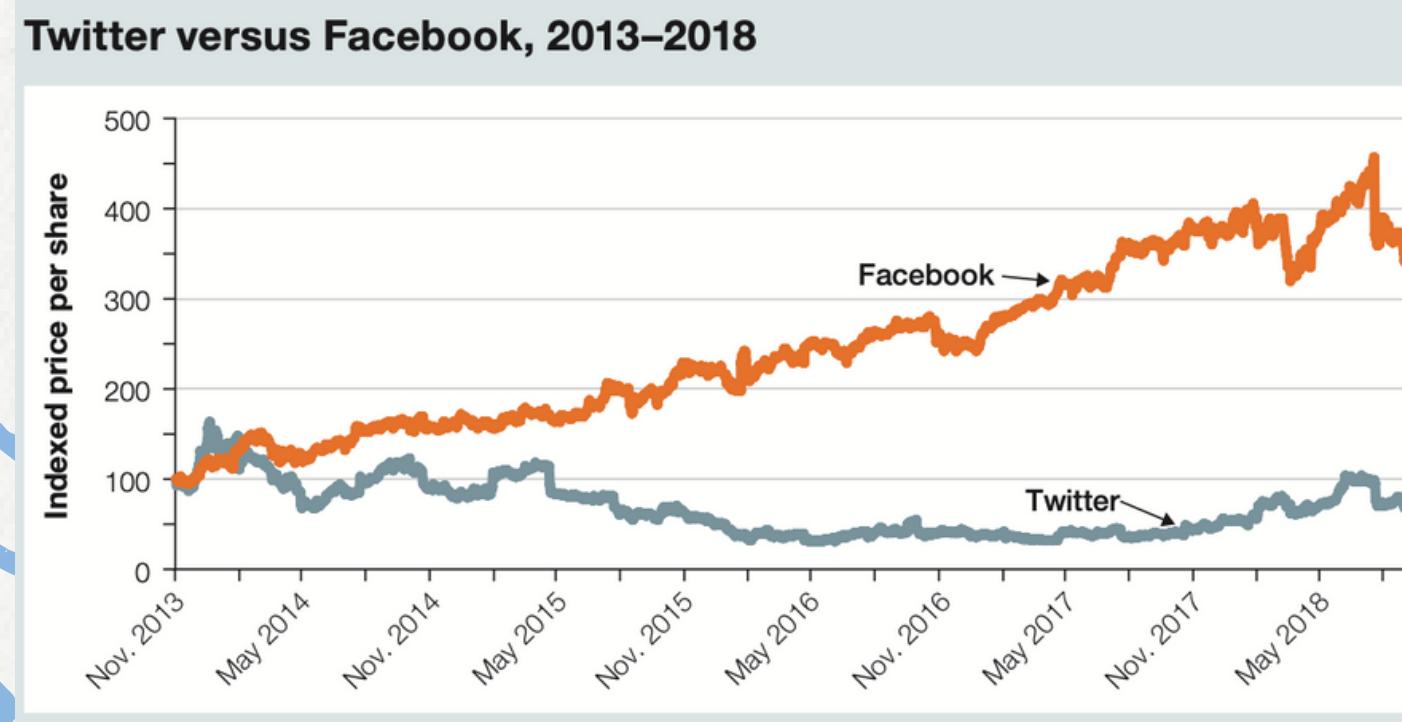
Multiples Valuation

Comparable Company Valuations

Company	Ticker	Market Data				Financials			Valuation		
		Shares		Enterprise		Revenue	EBIDTA	Net Income	EV/Revenue	EV/EBIDTA	P/E
		Share Price	Outstanding	Equity Value	Net Debt						
Tata Motors	TATAMOTORS	535.90	332.14	1,77,993.83	1,34,113.44	2,89,427.70	3,45,966.97	36,543.90	2,689.87	0.84x	7.92x
Ashok Leyland	ASHLTD	146.15	293.61	42,911.10	31,160.93	71,885.71	41,672.60	5,212.89	1,361.66	1.73x	13.79x
Tata Motors -DVR	TATAMTRDDVR	471.25	50.85	23,963.06	1,21,001.62	88,543.86	2,49,794.75	34,997.57	(13,395.10)	0.35x	2.53x
Olectra Greentec	OLECTRA	769.80	8.21	6,320.06	133.70	6,285.06	1,090.76	153.97	66.89	5.76x	40.82x
Force Motors	FORCEM	634.50	1.32	837.54	954.76	3,344.38	5,028.98	373.26	133.74	0.67x	8.96x
High											
75th Percentile											
Average											
Median											
25th Percentile											
Low											

Tata Motors Comparable Valuation	EV/Revenue	EV/EBIDTA	P/E
Implied Enterprise Value	289427.7	327433.3576	2,18,881.51
Net Debt	1,34,113.44	1,34,113.44	1,34,113.44
Implied Market Value	1,55,314.26	1,93,319.92	84,768.07
Shares Outstanding	358.35	358.35	358.35
Implied Value per Share	433.41	539.47	236.55

Multiples Valuation



Twitter's 2013–2015 IPO serves as an example of the multiples method's flexibility and potential dangers.

While Twitter lacked traditional financial metrics like profits or EBITDA, its valuable user base attracted investors seeking comparable social media models.

By comparing Twitter's user worth to Facebook's (\$98 per user) and LinkedIn's (\$93 per user), investors made faulty assumptions due to varying engagement levels, demographics, and monetization potential between the platforms.

This highlights the subjectivity and risks inherent in the multiples method, where inaccurate comparisons and assumptions can lead to significant misvaluations.

DCF Valuation

This method calculates the value of the company by discounting their future projected free cashflows to their present values.

Step 1 – Project Future Cash Flows

Step 2 – Apply WACC (Weighted Average Cost of Capital) i.e discount the FCFF to its PV

Step 3 – Calculate the terminal values

This is the value of the whole business, but we need to find the equity valuation. So, now find the equity value from this enterprise value

Step 4 – Add back cash and subtract the debt and we get the equity value

Step 5 – Divide the equity value from the number of outstanding shares and obtain the equity share price

$$EV = \text{Debt} + \text{Equity} - \text{Cash}$$

Forecasting Free Cash Flows

Calculation of PV of FCFF	Mar-21A	Mar-22A	Mar-23F	Mar-24F	Mar-25F	Mar-26F	Mar-27F
EBIT	8740.72	-115.60	11787.25	15895.64	21435.98	28907.38	38982.89
Tax Rate	25.00%	25.00%	25.00%	25.00%	25.00%	25.00%	25.00%
EBIT(1-Tax Rate)	6555.54	-86.70	8840.44	11921.73	16076.98	21680.53	29237.17
Less: Reinvestment Rate	-503.85%	-392.74%	-303.86%	-232.75%	-175.86%	-130.36%	51.68%
Free Cash Flow to Firm	39585.55	-427.21	35702.86	39669.64	44350.71	49942.34	14127.40
Mid year convention			0.5	1.5	2.5	3.5	4.5
Discounting Factor			0.93	0.81	0.70	0.61	0.53
PV of FCFF		33281.45	32133.34	31217.39	30546.63	7508.53	

Discounting factor = WACC

Free Cash Flow Equation

EBIT

- taxes

= EBIAT

+ depreciation and amortization

± changes in working capital

- capital expenditures

Free cash flow

Calculation of Reinvestment Rate

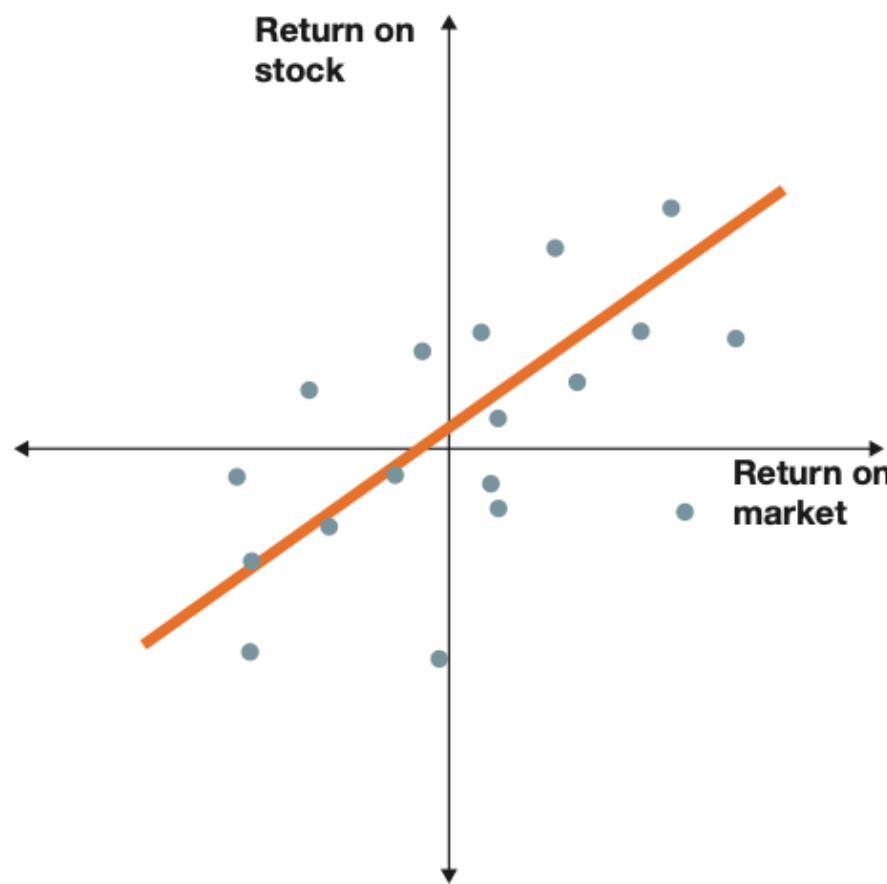
	Mar-18	Mar-19	Mar-20	Mar-21	Mar-22
Net Capex	35,049.00	35,237.00	29,531.00	19,854.00	14,938.00
Change in Working Capital		7311.00	(292.00)	(7181.00)	8259.00
EBIT	9904.09	1073.7	-3438.36	8740.72	-115.6
Tax Rate	30%	30%	30%	30%	30%
EBIT(1-T)	6932.863	751.59	-2406.852	6118.504	-80.92
Reinvestment		42,548.00	29,239.00	12,673.00	23,197.00
Reinvestment Rate		5661.07%	-1214.82%	207.13%	-28666.58%
				4 year Average	-6003.30%
				4 Year Median	-503.85%

Calculation of Growth Rate

	Mar-18	Mar-19	Mar-20	Mar-21	Mar-22
Reinvestment Rate		5661.07%	-1214.82%	207.13%	-28666.58%
ROIC		1.24%	-3.37%	8.20%	-0.10%
Intrinsic Growth		70.21%	40.89%	16.99%	28.82%
				4 Year Average	39.23%
				4 Year Median	34.85%

Beta & CAPM

Beta is risk measure. It measures the volatility of security compared to that of market. Ratio of covariance of security and variance of market.



Capital Asset Pricing Model

$$r_e = r_{\text{risk-free}} + \text{beta} \times \text{market risk premium}$$

where r_e = cost of equity and $r_{\text{risk-free}}$ = risk-free rate

$$\text{ATCD} = (\text{RFRR} + \text{CS}) \times (1 - \text{Tax Rate})$$

where:

ATCD = After-tax cost of debt

RFRR = Risk-free rate of return

CS = Credit spread

WACC

Calculation for the weighted average cost of capital

Percent debt	35%
Percent equity	65%
Tax rate	30%
Cost of debt	7%
Risk-free rate	4%
Market risk premium	6%
Beta	1.1
Cost of equity	10.6% ← Cost of equity = risk-free rate + beta × market risk premium
WACC	8.61% ← WACC = tax-adjusted cost of debt × debt share of capital + cost of equity × equity share of capital

Weighted Average Cost of Capital

$$\text{WACC} = \left(\frac{D}{D+E} \right) r_D (1 - t) + \left(\frac{E}{D+E} \right) r_E$$

r_D = cost of debt

r_E = cost of equity

D = market value of the firm's debt

E = market value of the firm's equity

$D + E$ = total market value of the firm's
financing (equity and debt)

t = corporate tax rate

Terminal Value

2 types of growth model

Perpetuity Formula

$$\frac{\text{Cash flow}_1}{\text{discount rate}}$$

Calculation of Terminal Value

FCFF(n+1)

WACC

Terminal Growth

19051.43

15.08%

6.32%

Terminal Value

217470.76

Growing Perpetuity Formula

$$\frac{\text{Cash flow}_1}{\text{discount rate} - \text{growth rate}}$$

Share Price

Calculation of Equity Value

PV of FCF	134687.34
PV of Terminal Value	115582.95
Value of Operating Assets	250270.29
Add : Cash	40669.19
Less: Debt	134114.00
Value of Equity	156825.48
No of Shares	358.35
Equity Value per Share	437.63

Current Share Price	509.5
Discount/Premium	1.16x

Thank you !