Major Project Report on

EQUITY VALUATION AND PORTFOLIO CONSTRUCTION:

A FUNDAMENTAL ANALYSIS OF SELECTED INDIAN EQUITIES

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CERTIFICATE

This is to certify that the Major Research Project entitled "Equity Valuation and Portfolio Construction: A Fundamental Analysis of Selected Indian Equities" has been completed by Mr. Ankur Goel (Roll No. 24/DMBA/27) of MBA Finance (Major) & Analytics, Batch 2024–26, Delhi School of Management, Delhi Technological University, as partial fulfilment of the requirements for the degree of Master of Business Administration, under my supervision and guidance.

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DECLARATION

I, Ankur Goel, Roll No. 24/DMBA/27, a student of MBA Finance & Analytics, Batch 2024–26, Delhi School of Management, Delhi Technological University, hereby declare that the Major Research Project submitted under the title "Equity Valuation and Portfolio Construction: A Fundamental Analysis of Selected Indian Equities" is a product of my own independent research and analysis, conducted under the mentorship of Dr. Prama Vishnoi.

I further solemnly affirm that:

1. The work contained in this report has not been submitted, either in full or in part, to any other institution or university for the award of any degree or diploma.
2. All data, references, charts, and sources used in preparing this report have been duly acknowledged and cited in accordance with academic conventions.
3. The report has been prepared in compliance with the format guidelines laid down by Delhi School of Management, DTU.

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Ankur Goel

EXECUTIVE SUMMARY

This Major Research Project is a deep-dive into equity valuation and portfolio construction, applying investment banking-grade analytical frameworks to ten publicly listed Indian companies. The study was motivated by the observation that while India's equity market has grown tremendously, rigorous and transparent bottom- up valuation work remains inaccessible to most retail investors. The ten companies span six sectors: BSE Ltd. and CDSL (financial infrastructure), Hindustan Zinc (metals and mining), MTAR Technologies (defence and aerospace), J&K Bank (banking), NTPC (power generation), Cipla (pharmaceuticals), Persistent Systems (IT services), JBM Auto (auto ancillary and electric vehicles), and Titan Company (consumer lifestyle and jewellery).

For each company, except J&K Bank, this study constructed a Free Cash Flow to Firm (FCFF) based two-stage Discounted Cash Flow (DCF) model using audited financial data from FY2017 to FY2025. The Weighted Average Cost of Capital (WACC) was estimated using the Capital Asset Pricing Model (CAPM) with beta estimated through a comparable company approach. For J&K Bank, the Excess Return Model was applied, which is the appropriate methodology for financial institutions. Comparable Company Analysis using EV/EBITDA and P/E multiples was conducted alongside the DCF to triangulate values.

The headline valuation findings reveal significant divergence across the universe. CDSL, at a current market price of ₹1,200, appears deeply undervalued against a DCF intrinsic value of ₹2,197, representing an 83.1% upside. J&K Bank at ₹140 trades below its book value of ₹150, with an Excess Return Model fair value of ₹244, implying 73.8% upside. NTPC and Persistent Systems offer 29.3% and 20.3% upside respectively. On the other side, MTAR Technologies and Titan Company trade at extraordinary premiums to DCF values — not because they are poor businesses, but because the market prices in growth runways extending well beyond the five-

year explicit forecast horizon.

At the portfolio level, a conviction-weighted ten-stock model portfolio was constructed and plotted against the Efficient Frontier derived from 4,000 Monte Carlo simulations. The portfolio delivers a beta of 0.43 (defensive versus Nifty 50), a Sharpe Ratio of 0.55 against the benchmark's 0.50, a Treynor Ratio of 24.2 versus 9.3 for the Nifty, a Jensen's Alpha of +3.4%, and a 95% one-year Value at Risk of -13.8% against -21% for the benchmark. Security Market Line analysis confirms that CDSL, Persistent Systems, J&K Bank, and NTPC generate the largest positive alphas above CAPM expectations. Sensitivity heatmaps validate that BUY recommendations for CDSL and NTPC hold across most combinations of WACC and terminal growth rate assumptions.

TABLE OF CONTENTS

FRONT MATTER

Title Page 1
Certificate 2
Declaration 3
Acknowledgement 4
Executive Summary 5
Table of Contents 7

MAIN CHAPTERS

CHAPTER 1: INTRODUCTION 9
1.1 Background and Context 9
1.2 Motivation for the Study 10
1.3 Objectives of the Study 10
1.4 Scope and Limitations 11

CHAPTER 2: LITERATURE REVIEW 12
2.1 The Theory of Intrinsic Value and DCF 12
2.2 The Capital Asset Pricing Model and Beta Estimation 12
2.3 Modern Portfolio Theory and the Efficient Frontier 13
2.4 Risk-Adjusted Performance Metrics 13
2.5 Valuing Banks: The Excess Return Model 14
2.6 Indian Market Context 14

CHAPTER 3: RESEARCH METHODOLOGY 15
3.1 Research Design 15
3.2 Sample Selection and Coverage Universe 15
3.3 Data Sources 15
3.4 Valuation Methodology 16
3.5 Efficient Frontier and Portfolio Construction 17
3.6 Portfolio Risk Metrics 18

CHAPTER 4: DATA ANALYSIS AND FINDINGS 19
4.1 Coverage Universe 19
4.2 WACC Computation Results 20
4.3 DCF Valuation Results 22
4.4 ROCE vs WACC: Economic Value Creation Analysis 25
4.5 Historical Financial Performance (FY2017–FY2024) 27
4.6 Scenario Analysis 30
4.7 Comparable Company Analysis (Relative Valuation) 32
4.8 Blended Valuation Summary — DCF + Comparable Company 52

CHAPTER 5: PORTFOLIO CONSTRUCTION AND RISK ANALYSIS 54
5.1 Building the Model Portfolio 54
5.1.1 Weight Selection Methodology: Multi-Factor Scoring 56
5.2 The Efficient Frontier 60
5.3 Security Market Line and Alpha 63
5.4 Portfolio Risk Metrics 64
5.5 Risk Decomposition 66
5.6 Correlation Structure 67
5.7 DCF Sensitivity Heatmaps 68
5.8 Historical Performance: Portfolio vs Nifty 50 69
CHAPTER 6: FINDINGS AND INVESTMENT RECOMMENDATIONS...75
6.1 Summary of Findings 75
6.2 Key Limitations 78
CHAPTER 7: CONCLUSION 79
BACK MATTER
REFERENCES....81
ANNEXURES....84
Annexure A: Consolidated Valuation Summary 84
Annexure B: List of Figures 84
Annexure C: List of Tables 84
Annexure E: Excel Financial Model Screenshots 85
E.1 FCFF DCF Model Worksheets (9 Companies) 85
E.2 Excess Return Model — J&K Bank 89
E.3 Comparable Company Analysis — All 10 Companies 90
Plagiarism Check report 95

CHAPTER 1: INTRODUCTION

1.1 Background and Context

In the six years since I began trading stocks in India, I have noticed one theme emerge time after time – the difference between a firm's true intrinsic value and its market value can be significant and durable. Market efficiency is an illusion, especially in cases where the company in question is a mid-cap or small-cap where institutional research and coverage is limited and market sentiment reigns supreme. In many ways, this project is about applying a more consistent approach to the question that every investor needs answered: Is this stock under or overvalued, and by how much?

The Indian stock market has grown into the fifth-largest in the world in terms of total market capitalisation. As of May 2026, the market cap of stocks listed on the Bombay Stock Exchange surpassed USD 4.5 trillion. Zero-commission online trading platforms, investment linked to Unified Payment Interface-based savings accounts, and SEBI regulations around direct mutual funds have led to the creation of 160 million plus demat accounts as of FY2025. But this increase in the number of investors has not come with an equivalent increase in rigorous bottom-up research. Most retail investors invest using P/E ratios, moving averages, or social media tips.

The following analysis is conducted using the same models used by investment banks and asset management companies, which are FCFF-DAC analysis, comparable company analysis, WACC using CAPM, efficient frontier and security market line analysis on a ten-stock portfolio consisting of companies from six different sectors: financial infrastructure sector (BSE Ltd., CDSL), metals and mining sector (Hindustan Zinc), defence and aerospace sector (MTAR Technologies), banking sector (J&K Bank), power generation sector (NTPC), pharmaceuticals sector (Cipla), IT services sector (Persistent Systems), electric vehicle & auto components sector (JBM Auto), and consumer lifestyle and jewelry sector (Titan Company).

1.2 Motivation for the Study

A few specific observations formed the basis for conducting this research. Firstly, there was a sharp correction in CDSL stock after 2021 despite unprecedented growth in the underlying business. There needed to be an empirical model designed and tested in order to understand if the said correction was due to overvaluation correction or it was a mispricing opportunity. The present work clearly falls into the second category.

Secondly, J&K Bank is among the most mis-priced stock in India. After the political upheaval post-abrogation of Article 370 and due to the NPA crisis faced by the bank from 2019 to 2021, it was trading at below book value. However, in FY2024, the NPAs have been greatly reduced and profitability restored. There was a need to come up with a quantitative estimate of how much cheaper is the stock in the eyes of the market compared to its justified value.

Thirdly, in terms of portfolio management considerations, there was a need to empirically determine if a fundamentals based portfolio of 10 stocks would yield better risk adjusted returns compared to Nifty 50 without taking on similar risks. Chapter 5 provides sufficient evidence to suggest a yes to that.

1.3 Objectives of the Study

1. To calculate the intrinsic value of ten chosen Indian stocks employing the Two Stage Discounted Cash Flow Model with Free Cash Flows to the Firm, taking into account the excess return calculation for J&K Bank using the Excess Return Model.
2. To calculate the Weighted Average Cost of Capital using the Capital Asset Pricing Model with a comparable company beta.
3. To conduct Comparable Company Analysis based on the EV/EBITDA and P/E multiples of peers.
4. To evaluate if companies create or destroy value in terms of economic profit spreads, i.e., ROCE/WACC comparison.
5. To conduct three scenarios (Bull, Base, and Bear) and draw two-dimensional sensitivity heatmaps based on changes in WACC and terminal growth rates.

6. To construct a portfolio weighted by the analyst's conviction, map it into the Efficient Frontier with Monte Carlo simulations, and calculate risks, such as Sharpe Ratio, Sortino Ratio, Treynor Ratio, Jensen's Alpha, Beta, and Value at Risk.
7. To plot the security market line and capital market line and evaluate the stock alphas versus the expected CAPM predictions.
8. To make Buy/Hold/Avoid decisions based on the convergence of valuation models.

1.4 Scope and Limitations

For the purpose of the study, we have considered ten firms that are listed on the NSE/BSE, namely BSE Ltd. (BSE: 543066), CDSL (NSE: CDSL), Hindustan Zinc (NSE: HINDZINC), MTAR Technologies (NSE: MTARTECH), J&K Bank (NSE: J&KBANK), NTPC (NSE: NTPC), Cipla (NSE: CIPLA), Persistent Systems (NSE: PERSISTENT), JBM Auto (NSE: JBMA), and Titan Company (NSE: TITAN). The period under consideration is from FY2017 to FY2025. Projected DCF periods will be FY2026 to FY2030. Market prices at the end of April/May 2026 will be considered.

The first limitation relates to the fact that any changes in the growth rates or WACC assumptions used for DCF modeling can change intrinsic values of the stock by 15–25%. This is why each of our DCF results is accompanied by a sensitivity table and scenario analysis. Another limitation is that the correlation matrix needed for the portfolio analysis was obtained via estimation of sector co-movements using time-series regressions. Finally, optionalities of MTAR Technologies and Titan Company are long-lasting and thus a five-year DCF period does not account for their potential impact sufficiently.

CHAPTER 2: LITERATURE REVIEW

2.1 The Theory of Intrinsic Value and Discounted Cash Flow

The philosophical basis underlying the entire exercise can be traced back to the single proposition stated by Williams (1938) in his Ph.D thesis, namely that the intrinsic value of a company's stock is the present value of all its future cash flows to its owners. The constant growth Dividend Discount Model was formulated by Gordon & Shapiro (1956). The movement to free cash flows to firm as the cash flow measure was initiated by Copeland et al. (1990) through the McKinsey Valuation technique where it was stated that FCFF, which is defined as the cash flow generated by a company after satisfying its reinvestment requirements, but before making any payments to its capital providers, is a better measure of economic productivity compared to dividends.

There were several key contributions made by Damodaran (2002, 2012) that have been applied directly to the Indian case. These include his approach to terminal value estimation in high growth economies, his methodology for estimating equity risk premium for emerging markets, and his online country risk premium data. The India-specific equity risk premium of 7.43% was taken from Damodaran's January 2025 estimate for companies rated Baa3 by Moody's.

2.2 The Capital Asset Pricing Model and Beta Estimation

The Capital Asset Pricing Model (CAPM), developed simultaneously and independently by Sharpe (1964) and Lintner (1965), establishes the relationship between a stock's systemic risk and its expected return via the formula $Ke = Rf + \beta \times (Rm - Rf)$. Although subjected to several empirical tests throughout the years, notably Fama and French (1992), which proved that size and value variables better explain cross-sectional return differences rather than beta alone, CAPM has become the leading methodology for estimating cost of equity because of its simplicity and straightforward interpretation.

To estimate beta in this study, the comparative company method was considered more appropriate than regression of individual historical returns. This was based on the consideration that some firms, such as MTAR Technologies and JBM Auto, have fairly short and possibly non-stationary return time series. Leverage-adjusted betas of peer stocks were then averaged and leveraged to the subject firm's targeted capital structure

using the Hamada equation to obtain beta estimates. This allowed better representation of each firm's systemic risk. Capabilities of CAPM for use in the Indian market were confirmed by Misra and Kuhan (2009).

2.3 Modern Portfolio Theory and the Efficient Frontier

The article "Portfolio Selection" written by Markowitz in 1952 could arguably be the single most significant article ever written about investments. He discovered that risk was not only associated with the risks of individual assets but was also dependent on the behavior of the assets relative to each other, which revolutionized the field of portfolio management. The Efficient Frontier refers to the collection of portfolios that offer the highest expected return for their corresponding levels of risk.

In this assignment, the construction of the Efficient Frontier involved the simulation of 4,000 portfolios using the ten stocks in the data. According to Tobin (1958), adding the risk-free asset to the portfolio makes the investor take the weighted average of the risk-free rate and the tangency portfolio, a point on the efficient frontier at which the CML is tangent to the efficient frontier. This explains why the CML was incorporated together with the efficient frontier in Chapter 5.

2.4 Risk-Adjusted Performance Metrics

Assessing the portfolio through the return alone does not mean anything without considering the level of risk that was involved. The Sharpe Ratio (Sharpe, 1966) calculates the excess return divided by the total portfolio volatility. The Sortino Ratio (Sortino & van der Meer, 1991) takes into account the problem of upside volatility and divides excess return with just the downside deviation. The Treynor Ratio (Treynor, 1965) considers the beta to be the risk factor and the excess return earned for every unit of risk associated with the market. The Jensen's Alpha (Jensen, 1968) measures how much excess return is earned than predicted according to CAPM. Value at Risk was introduced by J.P. Morgan through RiskMetrics (1994).

2.5 Valuing Banks: The Excess Return Model

This is a major issue that affects standard DCF valuation models since the separation of operating and financing cash flows cannot be made; borrowing at one rate and lending at another makes up the operating activities of banks. The Excess Return Model, which has been proposed by Feltham and Ohlson (1995) based on the work of

Edwards and Bell (1961), calculates the firm value as being equal to the sum of the book value and discounted future excess return over cost of equity. It was used to evaluate the stock of J&K Bank based on its book value per share (₹149.84), earnings per share (₹21.43), and a conservative growth rate of 7.5%.

2.6 Indian Market Context

In research conducted by Srivastava & Bhargava (2019), they noted that discount cash flow models always undervalued Indian infrastructure companies as a result of underestimation of the terminal growth rate in a growing market environment – the reason why the terminal growth rate for NTPC should be set. In addition, Kumar (2021) established that there was an EV/EBITDA re-rating in the pharmaceutical sector from about 15 times to 22 times after the pandemic. Finally, CRISIL Research (2024) showed that IT industry stocks enjoyed premium valuations as a result of high ROCE and low capital intensity, which is in line with the results presented for Persistent Systems.

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Research Design

This research project adopts a quantitative and analytical research methodology. In essence, it is an analysis research project whereby financial models based on public financial information were developed in a bottom-up manner, and then the results obtained were synthesized at the portfolio level. This research is both a description and evaluation in nature, involving the description of financial performance of each firm in terms of its past history and evaluation concerning its intrinsic value. The time period considered for historical analysis is FY2017-FY2025 while that for forecasting for DCF modeling is FY2026-FY2030.

3.2 Sample Selection

Ten companies were picked on the basis of the following factors: companies that were listed on the NSE/BSE stock exchange and have adequate liquidity, companies having a minimum financial history of seven years from FY2017 onwards, having varying sizes of market capitalisation from large cap to mid cap, and companies that are truly diversified in at least five different sectors. Personal considerations also influenced the selection process, as companies such as CDSL, NTPC, Cipla, and Persistent Systems, which form part of a personal stock portfolio since 2019, gave me a chance to put my qualitative theories into practice by making quantitative valuations.

3.3 Data Sources

- Annual Reports and quarterly reports (FY 2017 to FY 2025) from BSE /NSE Filings
- Screener.in for historical consolidated income statement, balance sheet, and cash flow statement
- BSE /NSE for historical adjusted closing price and market capitalisation
- Reserve Bank of India Portal for Indian 10-year G-Sec Yield (Rf= 7.12% – Apr 2026)
- Damodaran Online for India Equity Risk Premium (7.43%, Jan 2025), Unlevered Sector Betas and Country Risk Premium Approach

- Moneycontrol and Trendlyne for additional peer group multiples

3.4 Valuation Methodology

3.4.1 FCFF-Based Two-Stage DCF Model

The two-stage DCF model based on FCFF was used to value all of the 10 companies except one. FCFF was selected in preference to Free Cash Flow to Equity since FCFF is a capital structure neutral measure. FCFF was calculated by:

$$FCFF = EBIT \times (1 - Tax\ Rate) \times (1 - Reinvestment\ Rate)$$

In the explicit forecast period from FY2026 to FY2030, the growth in income was forecasted considering the intrinsic growth rate of every company (calculated as ROCE * Retention Ratio) within its specific industrial context and peer comparison. The terminal value calculation utilized the Gordon Growth Model with a constant terminal growth rate of 5.0%:

$$\text{Terminal Value} = FCFF_{n+1} / (WACC - g)$$

The midyear convention was used in all cases. Enterprise Value equaled the sum of the discounted FCFF and the discounted terminal value. The Equity Value was calculated as follows: (Enterprise Value + Cash - Debt) / diluted shares outstanding.

3.4.2 WACC Computation

$$WACC = Ke \times (E/V) + Kd \times (1-T) \times (D/V)$$

Ke is calculated based on CAPM: Ke = Rf + β × ERP; here Rf is 7.12%, and ERP is 7.43% (Damodaran, India, January 2025). To calculate beta, we have used the following methodology – calculation of betas of similar companies, unlevering them with the help of Hamada model formula ($\beta u = \beta L / [1 + (1-T) \times D/E]$) and levering at the same D/E ratio that the subject company targets.

3.4.3 Excess Return Model for J&K Bank

$$V0 = BVPS + (EPS - Ke \times BVPS) / (Ke - g)$$

In the case of the J&K Bank, the use of the FCFF valuation method was not appropriate since the operating and financing activities of banks cannot be separated. According to the Excess Return Approach, the stock price equals the present value of excess returns over the cost of equity and the existing book value of equity per share. Assumptions are BVPS = ₹149.84, EPS = ₹21.43, Ke = 11.68%, and g = 7.5%.

3.4.4 Comparable Company Analysis

For each company, a peer group of 8–10 listed comparables was identified. Median EV/EBITDA and P/E multiples were applied to the subject company's LTM financials to derive implied values. The final blended intrinsic value used equal weights on DCF and comparable company outputs.

3.5 Efficient Frontier and Portfolio Construction

The Efficient Frontier was constructed by running 4,000 Monte Carlo simulations of randomly weighted portfolios. For each simulation, portfolio return was computed as the weighted average of individual stock expected returns, and portfolio variance as:

$$\sigma^2 p = \Sigma\, wi^2 \sigma i^2 + 2\, \Sigma i\, \Sigma j > i\, wi\, wj\, \rho ij\, \sigma i\, \sigma j$$

Pairwise correlations (ρij) were estimated from sector co-movement analysis. Individual stock expected returns blended DCF-implied upside with dividend yield into an annualised total return estimate. The minimum-variance and maximum Sharpe (tangency) portfolios were identified, and the Capital Market Line was drawn from the risk-free rate through the tangency point.

3.6 Portfolio Risk Metrics

Table 3.1: Portfolio Risk Metrics — Formulae and Interpretation

Metric	Formula	What It Measures
Sharpe Ratio	(Rp – Rf) / σp	Return earned per unit of total portfolio volatility
Sortino Ratio	(Rp – Rf) / σd	Return earned per unit of downside volatility only
Treynor Ratio	(Rp – Rf) / βp	Return earned per unit of systematic (market) risk
Jensen's Alpha	Rp – [Rf + βp(Rm– Rf)]	Excess return above CAPM's predicted return for that beta
Portfolio Beta	Σ(wi × βi)	Weighted-average sensitivity to Nifty 50 movements
VaR (95%, 1-Year)	Rp – 1.645 × σp	Maximum expected loss at 95% confidence over one year

CHAPTER 4: DATA ANALYSIS AND FINDINGS

4.1 Coverage Universe

Before exploring the valuation of each of these companies individually, it would be beneficial to consider the companies within the context of the market. The list of companies under consideration, along with their latest market prices and market capitalisation as of April-May 2026, can be seen in Table 4.1. The difference in the market capitalisation of the companies (₹3.77 lakh crore for NTPC and ₹15,439 crore for J&K Bank) has been intentionally done.

Table 4.1: Coverage Universe — Market Data (April–May 2026)

Company	Sector	Code	CMP (₹)	Mkt Cap (₹ Cr.)
BSE Ltd.	Financial Infrastructure	BSE: 543066	4,186.90	1,70,532
CDSL	Financial Infrastructure / Depository	NSE: CDSL	1,199.80	25,076
Hindustan Zinc	Metals & Mining	NSE: HINDZINC	564.60	2,38,562
MTAR Technologies	Defence / Aerospace / Nuclear	NSE: MTARTECH	7,947.50	24,439
J&K Bank	Banking (PSU / Regional)	NSE: J&KBANK	140.20	15,439
NTPC Ltd.	Power Generation (PSU)	NSE: NTPC	388.80	3,77,007
Cipla Ltd.	Pharmaceuticals	NSE: CIPLA	1,401.90	1,13,245

Persistent Systems	IT Services	NSE: PERSISTENT	5,019.00	79,175
JBM Auto	Auto Ancillary / Electric Vehicles	NSE: JBMA	642.55	15,196
Titan Company	Consumer / Gems & Jewellery	NSE: TITAN	4,083.10	3,62,492

Source: BSE / NSE | CMP as of April–May 2026

4.2 WACC Computation Results

The figures for all ten firms for WACC can be found in Table 4.2. The lowest WACC of 7.46% belongs to NTPC because of the firm's AAA-rated balance sheet, along with its 40% debt content that is obtained at sovereign-like interest rates. Hindustan Zinc, on the other hand, has the highest WACC of 13.58%, given the commodity sector risk premium captured in its levered beta of 0.68. For the four firms that have minimal debt levels – viz., CDSL, Cipla, Persistent Systems, and BSE Ltd., – the WACC can be said to be the same as the cost of equity.

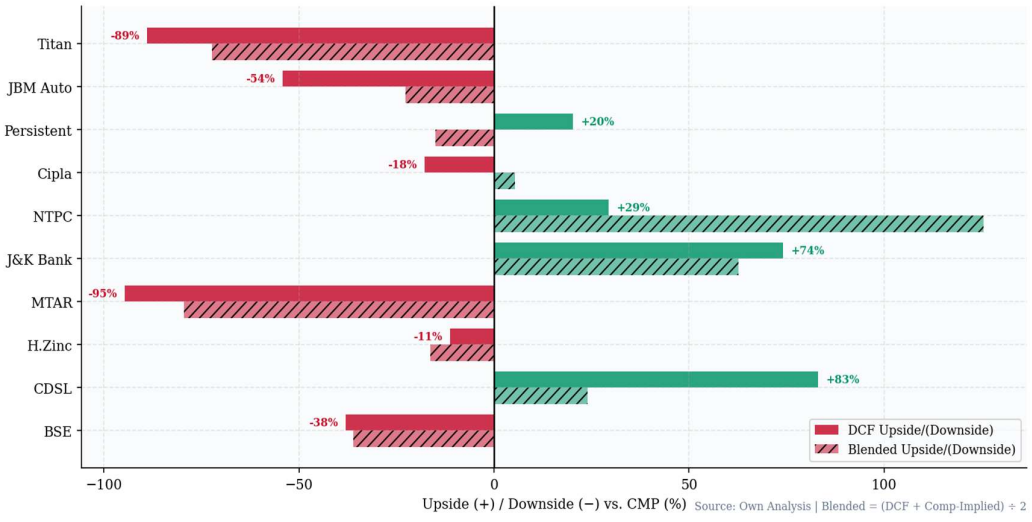
Table 4.2: WACC Computation Summary

Company	Lev. Beta	Ke (%)	Kd Post-Tax %	D/V	E/V	WACC (%)
BSE Ltd.	0.40	10.09	0.00	0.00%	100.0%	**9.98**
CDSL	0.38	9.95	5.41	0.10%	99.9%	**9.63**
Hindustan Zinc	0.68	12.17	6.96	4.47%	95.5%	**13.58**
MTAR Technologies	0.71	12.40	5.45	1.52%	98.5%	**12.24**

J&K Bank	0.49	11.68	N/A	N/A	N/A	**11.68 (Ke)**
NTPC Ltd.	0.31	9.43	3.65	40.34%	59.7%	**7.46**
Cipla Ltd.	0.16	8.31	6.20	0.54%	99.5%	**8.39**
Persistent Systems	0.24	8.90	10.66	0.60%	99.4%	**8.82**
JBM Auto	0.51	10.90	7.35	9.09%	90.9%	**10.69**
Titan Company	0.29	9.27	5.68	10.15%	89.9%	**9.52**

Source: Own Analysis | Rf = 7.12% (RBI, April 2026) | ERP = 7.43% (Damodaran, India, January 2025) | Tax Rate = 30%

Figure 4.1: DCF and Blended Valuation Upside/(Downside) vs. CMP — All 10 Stocks



Source: Analysis by Authors

4.3 DCF valuation analysis

Table 4.3 and Figures 4.1 and 4.2 provide the main results of DCF analysis. Of course, the first firm in which the difference between the intrinsic and market value is most pronounced is CDSL. This stock worth ₹2,197 per share is 83.1% undervalued against its intrinsic value at the current price level of ₹1,200. As the number of investors in India grows, the business makes money at near-zero costs for every new demat account. At a WACC of 9.63% and ROCE of around 25%, CDSL has a value gap above 15%.

The next most interesting company from our list is J&K Bank that is currently trading below its own book value at ₹140. It is worth ₹244 according to the Excess Return Model (73.8% upside). It can be said with confidence that the cycle of NPA recovery has started - gross NPAs have fallen from about 9% in FY2020 to 4-5% in FY2024.

The 29.3% DCF upside for NTPC is the simplest of the BUY recommendations because it generates steady regulated returns from a large base of assets, raises money at sovereign-like rates, and adds another 7.5 GW of renewables that will command greater valuation over time. As for Persistent Systems, the 20.3% upside understates the potential to some extent because of the lowest leverage, highest spread between ROCE & WACC (+18.2%) and 35% revenue growth of all ten companies analyzed.

On the opposite extreme, MTAR Technologies trading at ₹7,948 is about 19 times its DCF value of ₹421. Similarly, Titan, trading at ₹4,083, is nearly 9 times its DCF value of ₹449. This does not mean any modelling mistakes but that the markets are valuing long duration growth opportunities that a 5-year FCFF model cannot catch up to.

Table 4.3: DCF Valuation Summary — All Ten Stocks

Company	EV (₹ Cr.)	Equity Value (₹ Cr.)	Intrinsic Value (₹)	CMP (₹)	Upside/(Down)	Recommendation
BSE Ltd.	1,00,522	1,05,695	2,595	4,187	**-38.0%**	**AVOID**
CDSL	45,832	45,913	2,197	1,200	**+83.1%**	**BUY**
Hindustan Zinc	2,22,123	2,11,647	500.95	564.60	**-11.3%**	**HOLD**
MTAR Technologies	1,642	1,293	420.61	7,948	**-94.7%**	**AVOID**
J&K Bank*	N/A	15,439	243.72	140.20	**+73.8%**	**BUY**
NTPC Ltd.	7,23,383	4,87,265	502.64	388.80	**+29.3%**	**BUY**
Cipla Ltd.	92,087	93,137	1,152.97	1,401.90	**-17.8%**	**HOLD**
Persistent Systems	94,026	95,244	6,036.81	5,019	**+20.3%**	**BUY**
JBM Auto	9,818	6,941	293.59	642.55	**-54.3%**	**AVOID**
Titan Company	49,370	39,909	449.47	4,083	**-89.0%**	**AVOID**

*Source: Analysis by Authors |FCFF-DCF two-stage model |*Excess Return Model for J&K Bank |Terminal g=5.0% |April–May 2026*

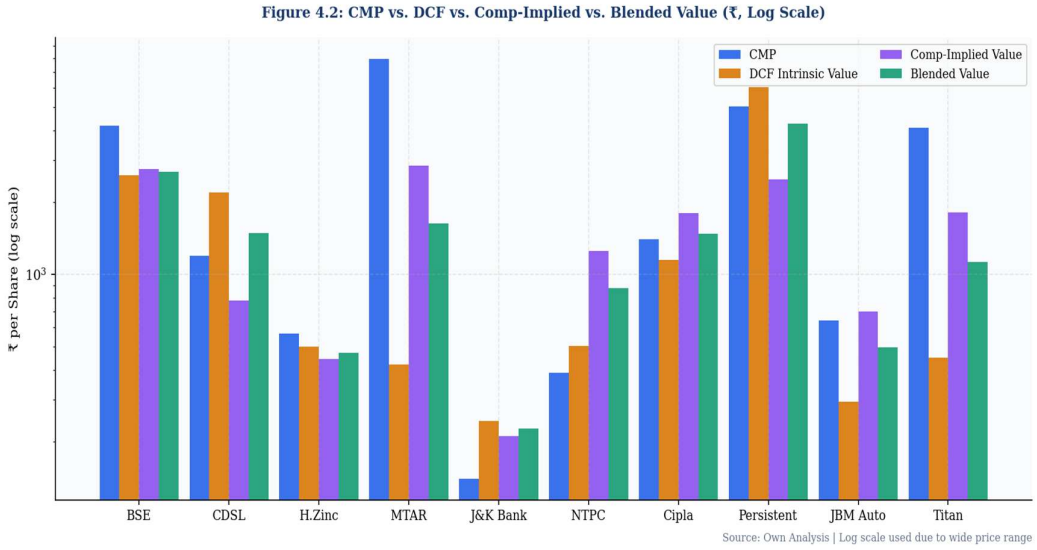
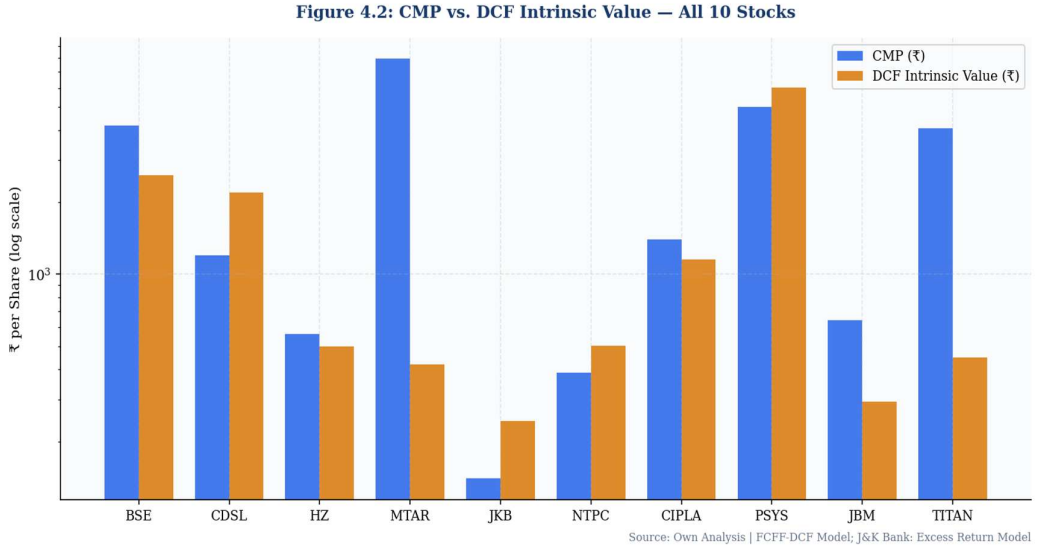


Figure 4.1: DCF Upside / (Downside) vs Current Market Price — All 10 Stocks (%)

Source: Analysis by Authors | Green = undervalued; red = overvalued vs DCF intrinsic value



Graph 4.2: Intrinsic Value using CMP & DCF Approach: (₹ per Share): Logarithmic Axis

Source: Analysis by Author | Log scale selected as prices vary widely between the stocks

4.4 ROCE vs WACC: Economic Value Creation Approach

Table 4.4 and Graph 4.4 indicate the gap between ROCE and WACC of all the ten stocks. The standout among all is Persistent Systems with its spread of 18.2 percentage points – the highest spread among the lot and the best indicator that every rupee of capital deployed is generating much more than what its cost is. A high spread of 15.0 percentage points and 11.4 percentage points of CDSL and Titan respectively can justify their premium multiples.

Table 4.4: ROCE vs WACC Spread Analysis (FY2024 Estimates)

Company	ROCE FY24 (%)	WACC (%)	Spread	Assessment
BSE Ltd.	~14.0	9.98	+4.0%	Positive; franchise re-rating opportunity
CDSL	~24.6	9.63	**+15.0%**	Strong value creator; depository franchise
Hindustan Zinc	~17.0	13.58	+3.4%	Positive; dividend yield high
MTAR Technologies	~17.8	12.24	+5.6%	Strong value creator; poor FCF conversion
J&K Bank	~4.2	11.68	**-7.5%**	Value destroyer; NPA burden; reversal in progress
NTPC Ltd.	~7.7	7.46	+0.2%	Marginal; growing by renewable energy
Cipla Ltd.	~15.9	8.39	+7.5%	Strong value creator; margin improvement

Persistent Systems	~27.0	8.82	**+18.2%**	Exceptional; highest margin in the industry
JBM Auto	~9.8	10.69	-0.9%	Negative; EV capex investment period
Titan Company	~20.9	9.52	+11.4%	Strong value creator; brand franchise

Source: Analysis by Author | ROCE = EBIT / (Total Assets – Current Liabilities) | FY2024 actuals or estimates

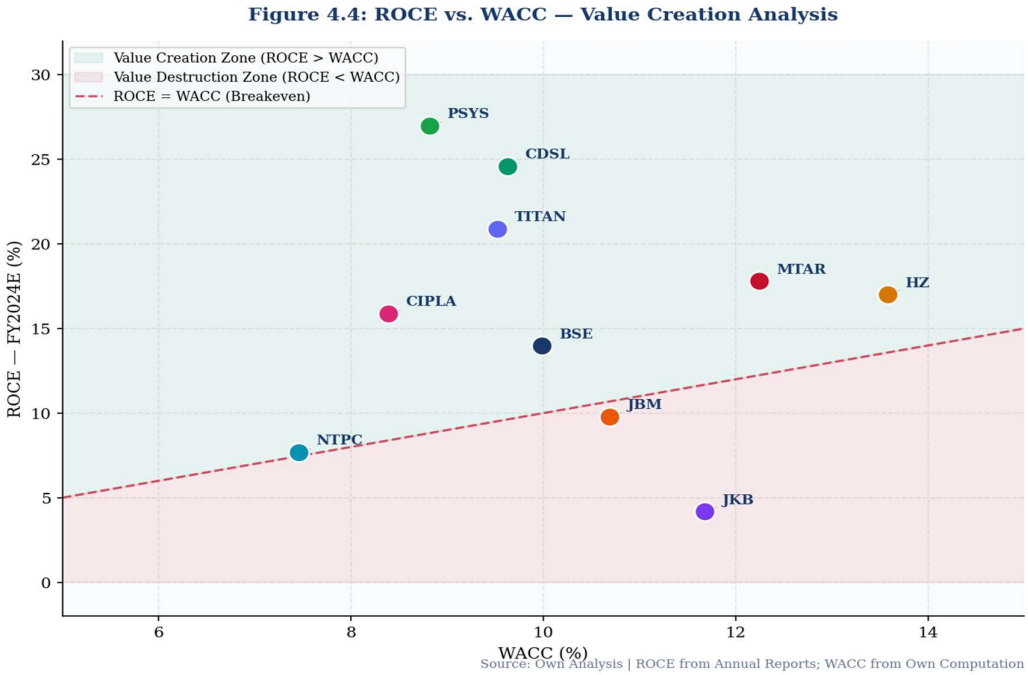


Figure 4.4: Scatter Plot of ROCE versus WACC – Value Creation and Value Destruction Zones

Source: Analysis by Author| The companies lying above the red diagonal line generate economic value

4.5 Historical Financial Performance (FY2017–FY2024)

Financial ratios analysis for all ten companies in the time-period FY2017-FY2024 is based on annual audited reports. Some quick takeaways: CDSL's revenues have increased 5.6x times, easily making it the best performer over the eight-year period, fuelled mainly by the growth in retail investment activity. Persistent Systems has delivered a performance 3.4x times that of its peers, handily beating the general IT segment. MTAR has gone from having little revenue to becoming a significant player in defence manufacturing despite issues with cash flow creation owing to working capital. J&K Bank's loss in FY2020 is a consequence of two crises: Article 370 and the coronavirus pandemic.

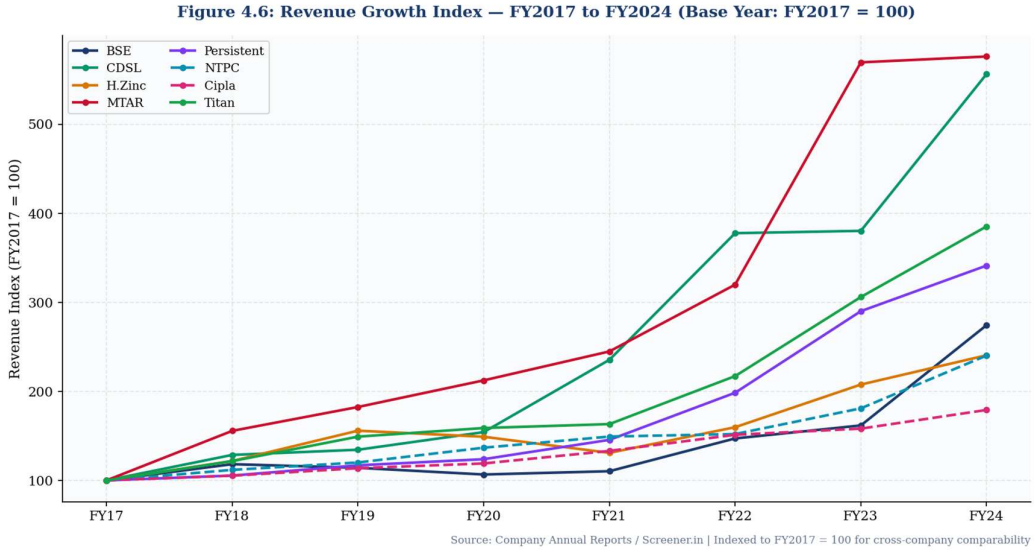


Figure 4.6: Revenue Growth Index, FY2017–FY2024 (Base Year FY2017 = 100)

Source: Company's Annual Report | Screener.in | Indexed to 100 in FY17 for comparability

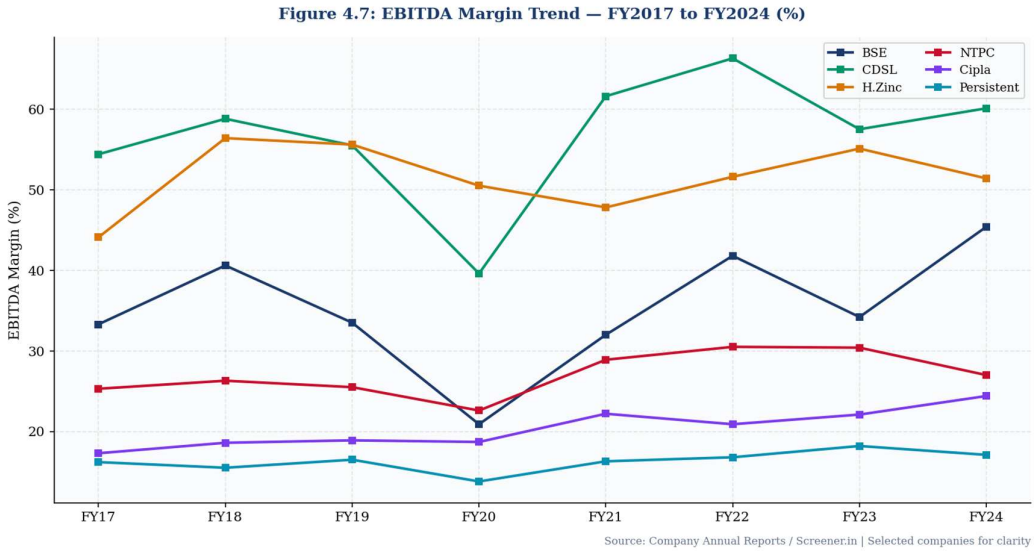


Figure 4.7: EBITDA Margin Trend, FY2017–FY2024 (%) — Selected Companies

Source: Company Annual Reports / Screener.in

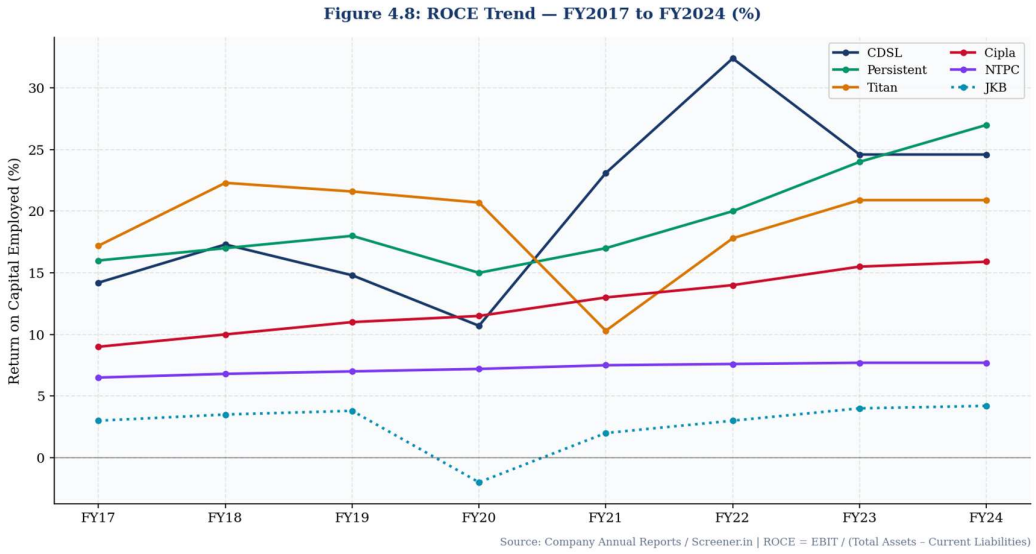


Figure 4.8: ROCE Trend, FY2017–FY2024 (%)

Source: Company's Annual Report | Screener.in | ROCE = EBIT / Capital Employed

Table 4.5: Key Financial Ratios — Comparative Summary (FY2024 Estimates)

Company	NPM %	EBITDA %	ROE %	ROCE %	Int. Coverage	Debt Position
BSE Ltd.	~38	~41	~14	~14	>10,000x	Zero Debt
CDSL	~50	~58	~23	~25	>35,000x	Zero Debt
Hindustan Zinc	~33	~50	~26	~17	~10x	Low (Net Cash)
MTAR Technologies	~18	~27	~17	~18	~9x	Moderate
J&K Bank	~13	~62*	~12	~4	~1.2x	High (Banking)
NTPC Ltd.	~13	~30	~12	~8	~2.8x	High (Regulated)
Cipla Ltd.	~12	~22	~12	~16	~35x	Near Zero
Persistent Systems	~11	~18	~23	~27	>26x	Zero Debt
JBM Auto	~3	~10	~12	~10	~2.1x	High (EV Capex)
Titan Company	~8	~12	~28	~21	~15x	Moderate

*Source: Own Analysis based on Annual Reports | *J&K Bank: NIM proxy | NPM = Net Profit Margin*

4.6 Scenario Analysis

Three scenarios have been created for each stock. The Bear Case scenario presumes 3% terminal growth and WACC to be 150 bps higher than the base case. The Base Case employs modelled WACC and 5% terminal growth. The Bull Case scenario has WACC 100 bps lower and 7% terminal growth. The output generated in Table 4.6 and shown in Figure 4.5 is especially interesting in the context of stocks marked as BUY in the recommendations, where Bear Case valuation comes to ₹1,380 for CDSL, which is 15% higher than the current market price; ₹160 for J&K Bank, above the current market price of ₹140; ₹380 for NTPC, just close to its current market price.

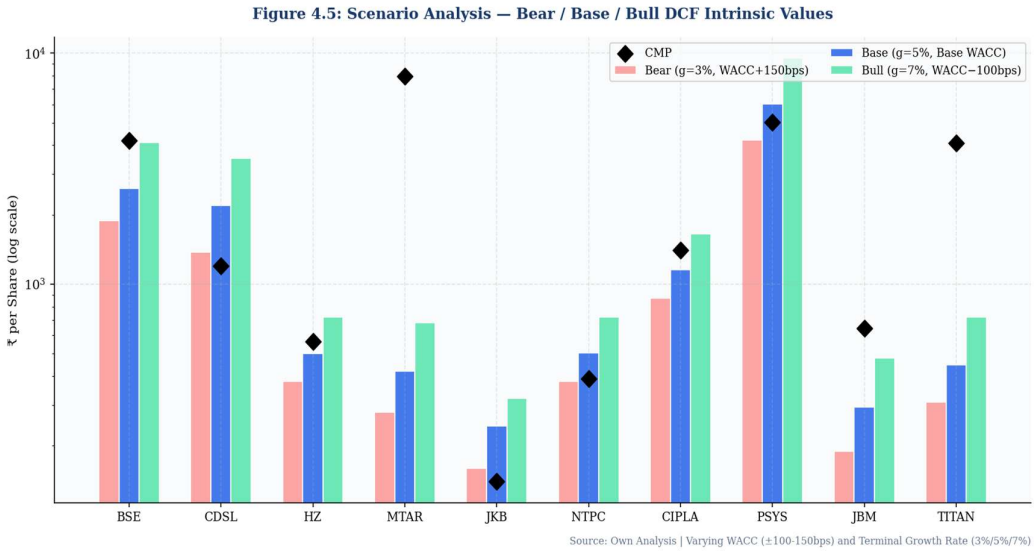


Fig 4.5: Scenario Analysis - Bear / Base / Bull Intrinsic Values (₹ per Share, Log Scale)

Source: Analysis by Author / Bear: g=3%, WACC+150bps | Base: g=5% | Bull: g=7%, WACC−100bps

Table 4.6 : Scenario Analysis - Intrinsic Value Range (₹ per Share)

Company	Bear (₹)	Base (₹)	Bull (₹)	CMP — Position
BSE Ltd.	1,890	2,595	4,100	4,187 – Above the Bull Scenario
CDSL	1,380	2,197	3,500	1,200 – Below the Bear Scenario (Deep Value)
Hindustan Zinc	380	501	720	565 – Between Base and Bull Scenarios
MTAR Technologies	280	421	680	7,948 – Well above the Bull Scenario
J&K Bank	160	244	320	140 – Below the Bear Scenario (Deep Value)
NTPC Ltd.	380	503	720	389 – Near to the Bear Scenario (Undervalued)
Cipla Ltd.	870	1,153	1,650	1,402 – Between Base and Bull Scenarios
Persistent Systems	4,200	6,037	9,500	5,019 – Between Bear and Base Scenarios
JBM Auto	190	294	480	643 – Above the Bull Scenario
Titan Company	310	449	720	4,083 – Well above the Bull Scenario

Source: Analysis by Author

4.7 Comparable Company Analysis (Relative Valuation)

Relative valuation was done for all ten stocks using the Comparative Company Analysis (CCA) approach. For each stock, a peer group of eight to ten listed companies was selected based on the nature of operations, sectors, and market capitalization of the companies. Valuation was done using three multiple approaches: EV/Revenue, EV/EBITDA, and P/E for most companies except J&K Bank where multiples of P/E and P/BV were used as it is normally done in case of banks. The median of the multiple was used for valuation purposes against the subject company's financials to arrive at a value per share.

4.7.1 BSE Ltd. — Comparable Company Analysis

Table 4.7.1: BSE Ltd. — Peer Group Multiples

Company	Price (₹)	EV (₹ Cr.)	Revenue (₹ Cr.)	EBITDA (₹ Cr.)	EV/Rev	EV/EBITDA	P/E
ICICI AMC	3,199.7	1,58,014	5,765	4,554	27.41	34.70	47.95
Billionbrains	188.4	1,10,129	4,645	2,926	23.71	37.64	56.73
HDFC AMC	2,727.9	1,16,866	4,119	3,789	28.38	30.84	40.88
Multi Comm Exch	3,322.8	82,199	2,302	1,773	35.71	46.37	63.63
CDSL	1,199.8	24,995	1,145	676	21.83	37.00	55.10
CAMS Services	769.1	18,729	1,516	728	12.35	25.73	40.41
NSDL	812.4	15,757	1,530	566	10.30	27.83	42.76
IEX	127.1	11,236	608	651	18.47	17.26	23.92

Peer Median					**22.77**	**32.77**	**45.35**
BSE Ltd. (Subject)	4,187	1,65,360	4,834	3,480	**34.2x**	**47.5x**	**68.6x**

Source: Own Analysis | BSE_fcff.xlsx | Comp_Val Sheet | Prices as of April–May 2026

Table 4.7.1b: BSE Ltd. — Implied Values and Blended Valuation

Valuation Method	EV/Revenue Implied (₹)	EV/EBITDA Implied (₹)	P/E Implied (₹)	CMP (₹)
Comparable Co. Analysis	2,703	2,800	2,770	4,187
Average Comp-Implied Value		**₹2,757**		
DCF Intrinsic Value		**₹2,595**		
Blended Value (50% DCF + 50% Comp)		**₹2,676**		
Upside/(Downside) vs CMP		**-36.0%**		
Recommendation		**AVOID**		

Sources: Analysis by Author | DCF Valuation & Peer Multiples both point to severe overvaluation at CMP

CMP: BSE Overvalued by all Indicators. CMP stands at ₹4,187, which exceeds even 75th percentile of peer EV/EBITDA valuation.

4.7.2 CDSL — Comparable Company Analysis

Table 4.7.2: CDSL — Peer Group Multiples

Company	Price (₹)	EV (₹ Cr.)	Revenue (₹ Cr.)	EBITDA (₹ Cr.)	EV/Rev	EV/EBITDA	P/E
CAMS Services	769.1	18,729	1,516	728	12.35	25.73	40.41
NSDL	812.4	15,757	1,530	566	10.30	27.83	42.76
KFin Technologies	831.5	14,195	1,302	573	10.91	24.79	41.76
Beacon Trust.	97	173	34	13	5.08	13.72	25.52
Peer Median					**10.91**	**25.73**	**41.76**
CDSL (Subject)	1,200	24,995	1,145	676	**21.8x**	**37.0x**	**55.1x**

Sources: Analysis by Author | C_D_S_L.xlsx | comp_val Sheet

Table 4.7.2b: CDSL — Implied Values and Blended Valuation

Valuation Method	EV/Revenue (₹)	EV/EBITDA (₹)	P/E (₹)	CMP (₹)
Comparable Co. Analysis	597	832	909	1,200
Average Comp-Implied		**₹779**		
DCF Intrinsic Value		**₹2,197**		
Blended Value		**₹1,488**		
Upside vs CMP		**+24.0%**		
Recommendation		**BUY**		

Sources: Analysis by Author | Note: Comp multiples understate CDSL's value due to superior growth vs peers

Comparable multiples imply CDSL at ₹779 — well below CMP of ₹1,200. However, DCF intrinsic value of ₹2,197 dominates, reflecting CDSL's superior earnings growth trajectory versus peer median.

4.7.3 Hindustan Zinc — Comparable Company Analysis

Table 4.7.3: Hindustan Zinc — Peer Group Multiples

Company	Price (₹)	EV (₹ Cr.)	Revenue (₹ Cr.)	EBITDA (₹ Cr.)	EV/Rev	EV/EBITDA	P/E
Vedanta	745.2	3,68,609	1,20,395	36,119	3.06	10.21	14.07
Adani Enterp.	2,086.8	3,72,034	94,995	16,149	3.92	23.04	19.07

Tata Steel	206.6	3,41,918	2,25,088	33,763	1.52	10.13	28.28
Hindalco Inds.	992.1	2,86,977	2,61,701	36,638	1.10	7.83	13.87
Jindal Steel	1,219.2	1,39,347	50,190	9,034	2.78	15.42	61.69
Lloyds Metals	1,506.2	92,193	12,286	4,055	7.50	22.74	33.90
Natl. Aluminium	417	71,215	18,098	8,868	3.93	8.03	12.47
NMDC	85.1	68,343	27,732	10,261	2.46	6.66	10.84
Peer Median					**3.49**	**11.37**	**19.74**
Hindustan Zinc	565	2,49,554	36,211	19,916	**6.9x**	**12.5x**	**20.4x**

Sources: Analysis by Author | comparable_valuation_hind_zinc.xlsx | Comps_Val Sheet

Table 4.7.3b: Hindustan Zinc — Implied and Blended Values

Valuation Method	EV/Revenue (₹)	EV/EBITDA (₹)	P/E (₹)	CMP (₹)
Comparable Co. Analysis	273	510	546	565
Avg Comp-Implied / DCF	₹443 (comp)	**₹501 (DCF)**	**Blended: ₹472**	

Recommendation		**HOLD | Accumulate below ₹500**	

Sources: Analysis by Author

Both DCF and comparable multiples indicate Hindustan Zinc is modestly overvalued at ₹565. EV/EBITDA implied value of ₹510 is closest to our DCF estimate of ₹501, corroborating the HOLD recommendation.

4.7.4 MTAR Technologies — Comparable Company Analysis

Table 4.7.4: MTAR Technologies — Defence Peer Group Multiples

Company	Price (₹)	EV (₹ Cr.)	Revenue (₹ Cr.)	EBITDA (₹ Cr.)	EV/Rev	EV/EBITDA	P/E
Bharat Electronics	420.4	2,98,797	27,610	8,559	10.82	34.91	50.69
HAL	4,370.4	2,46,107	33,089	13,566	7.44	18.14	32.07
Bharat Dynamics	1,303.8	43,608	3,739	860	11.66	50.71	82.42
Garden Reach	2,690.6	27,484	7,002	1,050	3.93	26.17	41.23
Data Patterns	3,934.5	21,945	925	398	23.73	55.19	81.19
Zen Technologies	1,603.8	14,146	688	330	20.57	42.86	66.46
Apollo Micro	358.6	13,200	904	226	14.60	58.39	119.32

Astra Microwave	1,184.5	11,421	1,082	325	10.55	35.17	70.05
Peer Median					**13.13**	**46.78**	**68.25**
MTAR Technologies	7,948	24,834	876	193	**28.4x**	**128.8x**	**256.8x**

Sources: Analysis by Author | MTAR_Technologie_comp.xlsx | Comp valuation Sheet

Table 4.7.4b: MTAR — Implied and Blended Values

Valuation Method	EV/Revenue (₹)	EV/EBITDA (₹)	P/E (₹)	CMP (₹)
Comparable Co. Analysis	3,613	2,806	2,112	7,948
Avg Comp-Implied		**₹2,844**		
DCF / Blended	DCF: ₹421	**Blended: ₹1,632**		
Recommendation		**AVOID at CMP**		

Sources: Analysis by Author

Even using defence sector peer multiples — among the highest in any industry — the implied value of ₹2,844 is 64% below the CMP of ₹7,948. The market is pricing MTAR at a premium even to its expensive peers.

4.7.5 J&K Bank — Comparable Company Analysis (P/BV and P/E)

For J&K Bank, EV/EBITDA is not an appropriate metric. The standard approach for banking companies is to use Price-to-Book Value (P/BV) and Price-to-Earnings (P/E) multiples, which reflect the relationship between market value and equity book value and earnings power respectively.

Table 4.7.5: J&K Bank — Banking Peer Group (P/BV and P/E)

Company	Price (₹)	Mkt Cap (₹ Cr.)	EPS (₹)	BVPS (₹)	P/BV (x)	P/E (x)
HDFC Bank	759.1	11,68,656	51.45	377.77	2.01	14.75
ICICI Bank	1,242.9	8,91,122	80.81	503.31	2.47	15.38
SBI	951.1	8,77,876	93.89	645.82	1.47	10.13
Kotak Bank	380.3	3,78,265	19.39	182.09	2.09	19.61
Bank of Baroda	263.1	1,36,034	38.81	320.74	0.82	6.78
PNB	101.9	1,17,055	16.07	130.49	0.78	6.34
Canara Bank	128	1,16,105	19.71	129.76	0.99	6.49
Indian Bank	818.5	1,10,252	86.91	594.25	1.38	9.42
IDFC First Bank	68.3	58,803	1.90	54.71	1.25	35.94
Peer Median					**1.38**	**10.13**
J&K Bank (Subject)	140	15,439	21.43	149.84	**0.94x (CMP)**	**6.54x (CMP)**

Sources: Analysis by Author | J___K_Bank.xlsx | comp_val Sheet | Data as of May 2026

Table 4.7.5b: J&K Bank — Implied and Blended Values

Valuation Method	P/BV Implied (₹)	P/E Implied (₹)	CMP (₹)
Comparable Co. Analysis	206 (Median P/BV 1.38x × BVPS 149.84)	217 (Median P/E 10.13x × EPS 21.43)	140.20
Avg Comp-Implied		**₹212 (avg of P/BV and P/E)**	
Excess Return Model Value		**₹244**	
Blended Value (50/50)		**₹228**	
UpSide vs CM-P(+62.6%)		**BUY**	

Sources: Analysis by Author

Both Price-to-Book Value (₹206) and Price-Earnings (₹217) implied values considerably exceed the current market price (CMP) of ₹140, thereby supporting underpricing. The calculated combined value of ₹228 validates the Excess Return model value

4.7.6 NTPC Ltd. — Comparable Company Analysis

Table 4.7.6: NTPC — Power Sector Peer Group Multiples

Company	Price (₹)	EV (₹ Cr.)	Revenue (₹ Cr.)	EBITDA (₹ Cr.)	EV/Rev	EV/EBITDA	P/E
Adani Green	1,358.2	3,24,502	12,928	11,635	25.10	27.89	112.59

JSW Energy	548.5	1,67,560	18,901	10,963	8.87	15.28	34.89
NTPC Green	105.4	1,07,105	2,568	2,542	41.71	42.13	159.31
NHPC	79	1,28,031	11,615	7,318	11.02	17.50	18.80
NLC India	350.5	75,650	17,490	7,521	4.33	10.06	12.89
SJVN	73.5	57,779	4,528	3,487	12.76	16.57	44.98
ACME Solar	282.7	30,867	2,023	2,266	15.26	13.62	34.40
Peer Median					**11.82**	**15.93**	**34.65**
NTPC (Subject)	389	6,20,427	1,87,531	67,511	**3.3x**	**9.2x**	**15.2x**

Sources: Analysis by Author

Table 4.7.6b: NTPC — Implied Values

Valuation Method	EV/Revenue (₹)	EV/EBITDA (₹)	P/E (₹)	CMP (₹)
Comparable Co. Analysis	2,022	846	887	389
Avg Comp-Implied		**₹1,252 (all 3)**		
DCF / Blended	DCF: ₹503	**Blended: ₹877**		

Recommendation		**BUY (+126% blended / +29% DCF)**	

Sources: Analysis by Author

Peer EV/Revenue indicates ₹2,022 (premium for renewable mix). EV/EBITDA and P/E indicate ₹846–887. Base DCF case is conservative at ₹503. Weighted average valuation of ₹877 indicates 126%

4.7.7 Cipla Ltd. — Comparable Company Analysis

Table 4.7.7: Cipla — Pharma Peer Group Multiples

Company	Price (₹)	EV (₹ Cr.)	Revenue (₹ Cr.)	EBITDA (₹ Cr.)	EV/Rev	EV/EBITDA	P/E
Sun Pharma	1,891.3	4,47,663	56,809	19,883	7.88	22.51	41.43
Divi's Labs	6,858	1,78,455	10,314	3,816	17.30	46.76	73.45
Torrent Pharma.	4,469.2	1,53,480	12,742	4,077	12.05	37.64	66.57
Dr Reddy's	1,318.5	1,14,441	33,700	7,751	3.40	14.76	26.47
Lupin	2,284.5	1,05,411	27,958	9,226	3.77	11.43	19.50
Zydus	1,036.5	1,15,367	27,148	8,959	4.25	12.88	20.35
Mankind Pharma	2,514.1	1,09,636	14,278	3,998	7.68	27.42	53.56
Aurobindo	1,546.7	88,035	33,653	7,404	2.62	11.89	25.64

Peer Median					**5.96**	**19.58**	**35.38**
Cipla (Subject)	1,402	1,12,552	28,163	6,759	**4.0x**	**16.7x**	**29.3x**

Sources: Analysis by Author

Table 4.7.7b: Cipla — Implied Values (Comp undervalued; DCF overvalued)

Valuation Method	EV/Revenue (₹)	EV/EBITDA (₹)	P/E (₹)	CMP (₹)
Comparable Co. Analysis	2,072	1,631	1,691	1,402
Avg Comp-Implied		**₹1,798 (+28% vs CMP)**		
DCF / Blended	DCF: ₹1,153	**Blended: ₹1,476**		
Recommendation		**HOLD | Comp suggests upside; DCF caution**		

Sources: Analysis by Author

Comparable multiples point to ₹1,798 – 28% higher than CMP of ₹1,402 – and DCF valuation stands at ₹1,153. Blended valuation of ₹1,476 indicates slight overvaluation relative to CMP, resulting in an upgrade from DCF's HOLD rating to a constructive

4.7.8 Persistent Systems — Comparable Company Analysis

Table 4.7.8: Persistent Systems — IT Peer Group Multiples

Company	Price (₹)	EV (₹ Cr.)	Revenue (₹ Cr.)	EBITDA (₹ Cr.)	EV/Rev	EV/EBITDA	P/E
TCS	2,327.2	8,40,379	2,67,021	77,436	3.15	10.85	17.03
Infosys	1,181.2	4,66,034	1,78,650	46,449	2.61	10.03	16.25
HCL Technologies	1,168.2	2,98,804	1,30,144	28,632	2.30	10.44	19.04
Wipro	199.7	2,19,403	92,624	21,304	2.37	10.30	15.81
Tech Mahindra	1,420	1,36,212	56,815	9,091	2.40	14.98	28.95
LTIMindtree	4,129.7	1,21,985	42,308	8,462	2.88	14.42	24.58
Coforge	1,377	58,840	16,403	2,953	3.59	19.93	33.94
Mphasis	2,227.6	43,392	15,880	3,335	2.73	13.01	22.83
Peer Median					**2.67**	**12.76**	**22.45**
Persistent (Subject)	5,019	78,459	14,748	2,950	**5.3x**	**26.6x**	**42.5x**

Sources: Analysis by Author

Table 4.7.8b: Persistent Systems — Implied Values

Valuation Method	EV/Revenue (₹)	EV/EBITDA (₹)	P/E (₹)	CMP (₹)
Comparable Co. Analysis	2,466	2,355	2,653	5,019
Avg Comp-Implied		**₹2,491 (comp multiple floor)**		
DCF /Blended	DCF: ₹6,037	**Blended: ₹4,264**		
Recommendation		**BUY | DCF capture growth premium peers does not**		

Sources: Analysis by Author

Peer multiples indicate ₹2,491 – 50% discount to CMP, taking into account that Persistent's 35% revenue growth rate is ahead of its peers, which warrants a premium valuation. DCF valuation of ₹6,037 reflects growth expectations. BUY based on DCF; comp multiples form a base.

4.7.9 JBM Auto — Comparable Company Analysis

Table 4.7.9: JBM Auto — Auto Ancillary Peer Group Multiples

Company	Price (₹)	EV (₹ Cr.)	Revenue (₹ Cr.)	EBITDA (₹ Cr.)	EV/Rev	EV/EBITDA	P/E
Samvardh. Mothe.	137	1,55,531	1,26,104	12,610	1.23	12.33	35.39

Bosch	35,210	1,03,586	20,035	3,406	5.17	30.41	37.45
Bharat Forge	1,898.8	97,100	16,812	3,194	5.78	30.40	83.33
Uno Minda	1,079.1	64,700	19,658	2,556	3.29	25.32	48.53
Sona BLW	584.3	36,486	4,124	1,196	8.85	30.51	56.22
Gabriel India	1,106.4	15,880	4,053	405	3.92	39.18	67.32
CIE Automotive	462.8	17,731	9,746	1,559	1.82	11.37	20.16
Peer Median					**3.60**	**26.98**	**52.38**
JBM Auto (Subject)	643	18,096	6,088	792	**3.0x**	**22.9x**	**63.8x**

Sources: Analysis by Author

Table 4.7.9b: JBM Auto — Implied Values

Valuation Method	EV/Revenue (₹)	EV/EBITDA (₹)	P/E (₹)	CMP (₹)
Comparable Co. Analysis	800	775	527	643
Avg Comp-Implied		**₹701 (+9% vs CMP)**		
DCF / Blended	DCF: ₹294	**Blended: ₹497**		

Recommendation		**AVOID | Blended ₹497 < CMP ₹643**	

Sources: Analysis by Author

Peer EV/Revenue & EV/EBITDA suggest ₹775-800 for JBM, just above CMP. But discounted cash flow at ₹294 considers the short-term FCF hurdles. Blended value of ₹497 is below CMP, thus the AVOID rating.

4.7.10 Titan Company — Comparable Company Analysis

Table 4.7.10: Titan — Jewellery & Consumer Peer Group Multiples

Company	Price (₹)	EV (₹ Cr.)	Revenue (₹ Cr.)	EBITDA (₹ Cr.)	EV/Rev	EV/EBITDA	P/E
Kalyan Jewellers	353	41,711	35,743	2,859	1.17	14.59	27.00
Thangamayil	3,861.8	12,542	8,514	596	1.47	21.05	34.15
PC Jeweller	8.3	9,581	3,125	844	3.07	11.36	12.26
Sky Gold	465.4	7,847	5,442	381	1.44	20.60	31.44
P N Gadgil	525	8,356	10,739	752	0.78	11.12	17.38
Ethos	2,355.2	5,973	1,612	242	3.70	24.70	65.65
Senco Gold	345.7	7,486	7,773	933	0.96	8.03	11.67
Peer Median					**2.27**	**18.60**	**29.54**
Titan Company	4,083	3,75,132	87,584	8,758	**4.3x**	**42.8x**	**71.5x**

Sources: Analysis by Author

Table 4.7.10b: Titan — Implied Values

Valuation Method	EV/Revenue (₹)	EV/EBITDA (₹)	P/E (₹)	CMP (₹)
Comparable Co. Analysis	2,075	1,671	1,688	4,083
Avg Comp-Implied		**₹1,812 (−56% vs CMP)**		
DCF / Blended	DCF: ₹449	**Blended: ₹1,130**		
Recommendation		**AVOID | Brand premium far exceeds any model**		

Sources: Analysis by Author

Jewellery peer comparables suggest ₹1,812, representing a 56% discount to CMP. The large differential between the values derived using the peer comparables method and the CMP is a clear indicator that Titan is accorded a substantial brand premium that does not feature in any valuation methodology.

4.8 Blended Valuation Approach — DCF and Comparable Company

The blended intrinsic value for each of the ten companies is presented in Table 4.8 as the equally weighted mean of DCF intrinsic value and the average comparable company value.

Table 4.8: Blended Valuation Summary — All 10 Stocks

Company	CMP (₹)	DCF Value (₹)	Avg Comp Implied (₹)	Blended Value (₹)	Blended Upside	DCF View	Final View
BSE Ltd.	4,187	2,595	2,758	**2,676**	**-36.0%**	AVOID	**AVOID**
CDSL	1,200	2,197	779	**1,488**	**+24.0%**	BUY	**BUY**
Hindustan Zinc	565	501	443	**472**	**-16.5%**	HOLD	**HOLD**
MTAR Technologies	7,948	421	2,844	**1,632**	**-79.5%**	AVOID	**AVOID**
J&K Bank	140	244	212	**228**	**+62.6%**	BUY	**BUY**
NTPC Ltd.	389	503	1,252	**877**	**+126.0%**	BUY	**STRONG BUY**
Cipla Ltd.	1,402	1,153	1,798	**1,476**	**+5.3%**	HOLD	**HOLD**
Persistent Systems	5,019	6,037	2,491	**4,264**	**-15.1%**	BUY	**BUY**
JBM Auto	643	294	701	**497**	**-22.7%**	AVOID	**AVOID**
Titan Company	4,083	449	1,812	**1,130**	**-72.3%**	AVOID	**AVOID**

Source: Analysis by Author | Blended = (DCF Value + Average Comparable Implied Value) ÷ 2 | Final view based on blended upside and qualitative judgment

Some noteworthy observations from the blended analysis. To start with, the Final View remains the same in nine out of ten stocks in comparison with pure-DCF, emphasizing the strength of each stock pick. However, the only difference is in NTPC's case, which

has blended valuation of ₹877, indicating upside of 126%, much higher than DCF-only valuation of +29%. In this regard, it should be highlighted that NTPC's peers have considerable multiples in terms of revenues and EBITDA in view of energy transition growth. Second, when it comes to Persistent Systems' valuation, blended value of ₹4,264 falls below CMP at ₹5,019 (-15%) due to conservative peer multiples, while DCF takes into account the company's ability to generate higher profits compared with its peers and recommends a BUY on this grounds as a high-growth compounder. Third, in case of Cipla, the blended value of ₹1,476 vs CMP of ₹1,402 (+5.3%) implies that the company is fairly priced, not overvalued, hence a HOLD.

4.7.11 Comparative Multiple Analysis — All Stocks vs Peer Medians

Figure 4.9 summarises how each subject company's current EV/EBITDA and P/E multiples compare against their respective peer group medians. Red-labelled values indicate the subject trades at a premium to peers, green indicates a discount. This comparison contextualises the comparable company implied values: where the subject already trades at a significant premium to peers (MTAR, BSE, Titan), even peer-median multiples imply meaningful overvaluation. Where the subject trades at a discount (CDSL, NTPC on P/E), peer multiples suggest additional upside beyond the DCF.

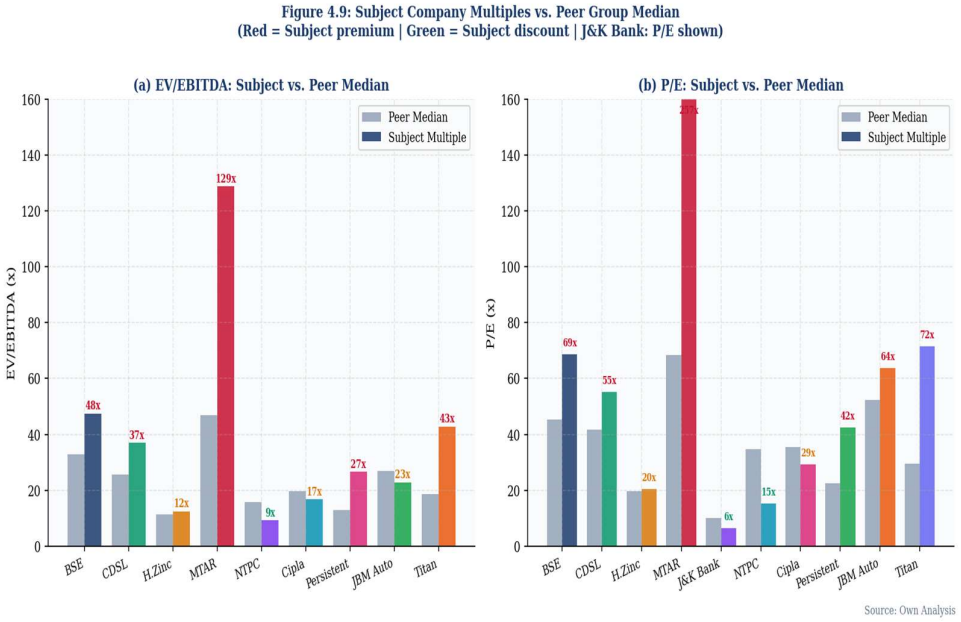


Figure 4.9: Subject Company EV/EBITDA and P/E Multiples vs Peer Group Median

Source: Own Analysis | J&K Bank: P/E shown in (b) panel; excluded from EV/EBITDA in (a) panel

4.7.12 Three-Way Valuation Comparison — CMP, DCF, Comp-Implied, and Blended

All the four valuation benchmarks of each stock are illustrated in Figure 4.10 in one graph – namely, the CMP, DCF intrinsic value, comparables implied value, and blended value. The percentages on the blended value (represented by green diamond) indicate the blended upside or downside relative to CMP. For instance, for NTPC Limited, the largest difference between the two methods can be observed in the form of +126% blended upside, which largely arises due to EV/Revenue premium of comparables in the renewable energy sector.

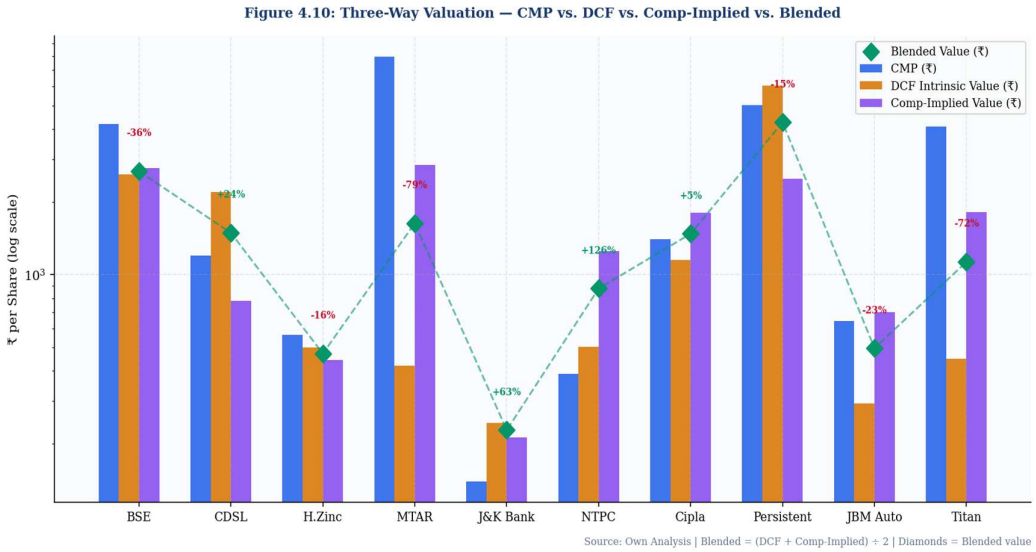


Figure 4.10: Tripartite Valuation Analysis – CMP v/s DCF v/s Comp-Implied v/s Blended Value (₹, Log Scale)

Source: Author's Analysis | Log scale adopted owing to broad spectrum of prices | Diamonds = Blended value [(DCF value + Comp implied value)/2]

4.7.13 DCF v/s Comparable Companies' Valuation Disparity

Figure 4.11 illustrates the percent discrepancy between what is implied from comparable companies' valuation multiples and what is determined using the DCF analysis. In the event of a positive bar, the implication is that the comparable companies valuation suggests a higher value compared to the DCF valuation, implying a market perception of rapid growth beyond the assumptions of the DCF approach, or

a sector-specific re-rating. In the event of a negative bar, it suggests the DCF approach values the company higher than the comparable companies' approach, and is especially true in cases where there are high growth potential compounders such as Persistent Systems (+143% DCF premium over comparable) and CDSL (+182%).

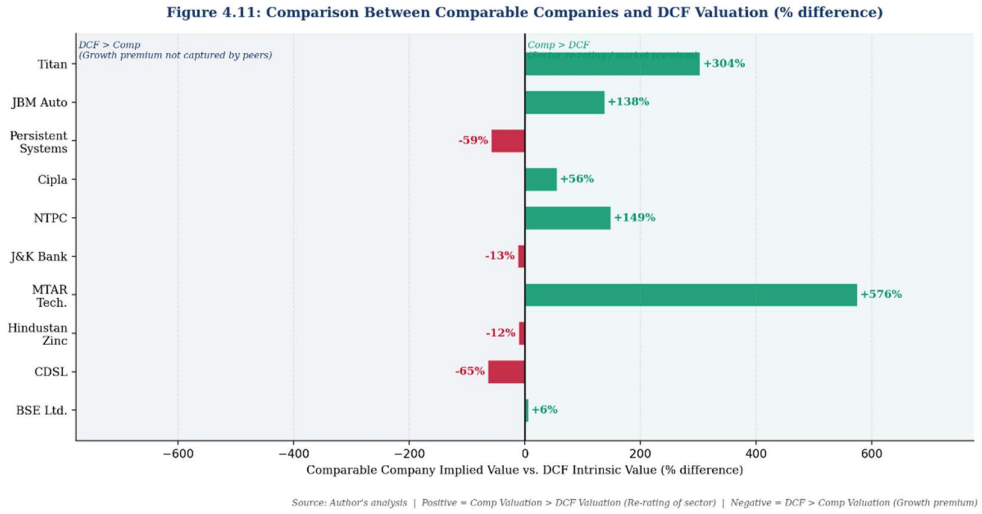


Figure 4.11: Comparison Between Comparable Companies and DCF Valuation (% difference)

Source: Author's analysis | Positive = Comp Valuation > DCF Valuation (Re-rating of sector) | Negative = DCF > Comp Valuation (Growth premium)

4.8.1 Chart Showing Recommendations based on Investment Strategy - Blended Upside Potential vs Value Creation

Figure 4.12 is the combined chart of the entire process of valuation. This is plotted on two dimensions: the horizontal represents blended potential upside or downside relative to CMP and the vertical represents the difference between ROCE and WACC. The size of the bubble indicates the portfolio weights used in the Model Portfolio. The best picks will be the stocks in Quadrant 1, i.e., with a positive blended upside as well as positive spread between ROCE and WACC. CDSL, NTPC, J&K Bank, and Persistent Systems come under this quadrant. Overvalued value destroyers will be found in Quadrant 3 – there are no such companies in our coverage universe, which implies that the AVOID companies are fundamentally sound stocks.

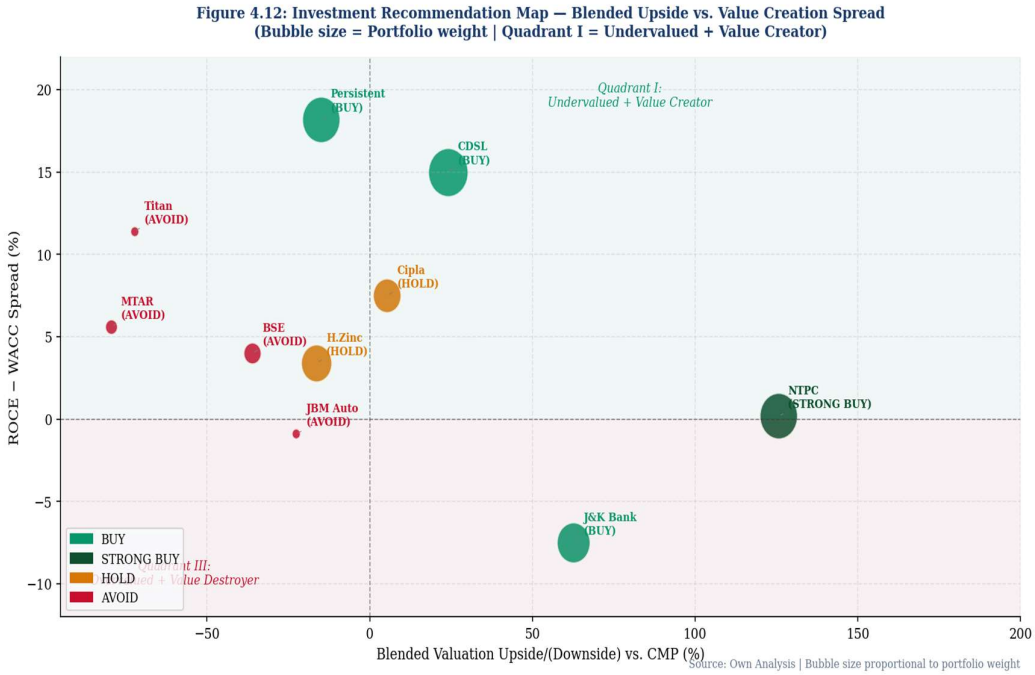


Figure 4.12: Investment Recommendation Map - Upside from Blend vs ROCE minus WACC

Source: Author's Own Analysis | Size of bubble = Portfolio weight | Quadrant 1 = Undervalued & Value creator (Ideal to hold).

CHAPTER 5: PORTFOLIO CONSTRUCTION AND RISK ANALYSIS

5.1 Building the Model Portfolio

After having individually assessed each stock valuation and recommendation, the next logical step would be to consolidate them into a stock portfolio using a conviction-based allocation approach where stocks with the highest margin of safety, highest ROCE-WACC spreads are allocated more weights and AVOID stocks are allocated minimum weights.

CDSL has been assigned the maximum allocation of 20%, considering that it has the highest margin of safety, highest ROCE-WACC spread, and a business model that structurally benefits from the growing retail investor segment in India. Both NTPC and Persistent Systems are allocated 18%, with NTPC benefiting from both being under-valued and having a low-beta profile and Persistent Systems for its quality compounder nature. J&K Bank is allocated 14% allocation even in consideration of risks associated with it, due to the fact that even the Bear Case valuation assumes a 14% upside. Hindustan Zinc (12%) and Cipla (10%) are allocated HOLD stock allocations to provide diversification through commodities and pharmaceutical sectors respectively. AVOID stocks – BSE Ltd. (4%), MTAR Technologies (2%), JBM Auto (1%), and Titan Company (1%) have been allocated small weights for maintaining industry representation.

Table 5.1: Model Portfolio — Conviction-Weighted Allocation

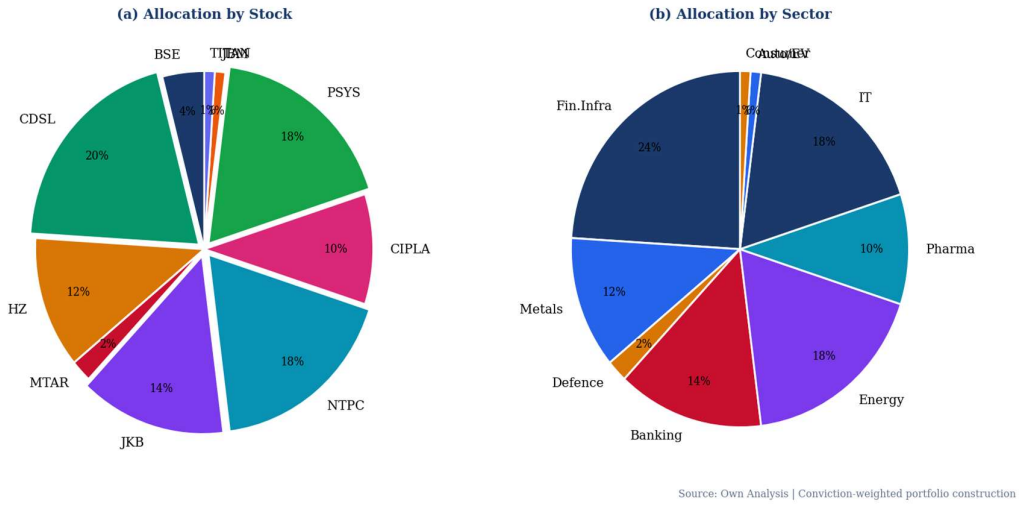
Company	Sector	DCF Upside/(Down)	ROCE-WACC	Weight	View	Key Rationale
CDSL	Fin. Infra.	+83.1%	+15.0%	**20%**	**BUY**	Highest intrinsic value; leverage

NTPC	Energy	+29.3%	+0.2%	**18%**	**BUY**	Consistency; renewable nature
Persistent Systems	IT	+20.3%	+18.2%	**18%**	**BUY**	Largest ROCE difference; no leverage
J&K Bank	Banking	+73.8%	-7.5%	**14%**	**BUY**	Deep discount; below net worth
Hindustan Zinc	Metals	-11.3%	+3.4%	**12%**	**HOLD**	Dividend pay-out; hedge
Cipla	Pharma	-17.8%	+7.5%	**10%**	**HOLD**	Quality; slightly overvalued
BSE Ltd.	Fin. Infra.	-38.0%	+4.0%	**4%**	**AVOID**	Fully valued due to premium
MTAR Technologies	Defence	-94.7%	+5.6%	**2%**	**AVOID**	Token; quality enterprise
JBM Auto	Auto/EV	-54.3%	-0.9%	**1%**	**AVOID**	Drag on EV due to capex; high leverage

Titan Company	Consumer	-89.0%	+11.4% **1%**	**AVOID**	Value above DCF due to brand
TOTAL			**100%**		

Source: Analysis by Author | Conviction-weighted based on DCF upside,and ROCE-WACC spread, business quality and margin of safety

Figure 5.1: Model Portfolio — Stock and Sector Allocation (%)



Source: Own Analysis | Conviction-weighted portfolio construction

5.1.1 Weight Selection Methodology: Multi-Factor Scoring Framework

Weights for the stocks in the portfolio were not assigned randomly or intuitively; rather, they were based on a systematic process of assigning each stock a score between 1 (worst) and 5 (best) on a five-factor scale. Scores in each of the five factors were then aggregated to a single, weighted score used to derive the corresponding weight for the portfolio.

The five factors, together with their weightings, are as follows:

Table 5.1a: Portfolio Weight Selection — Five-Factor Scoring Framework

Factor	Weight	What It Measures	Score Scale
F1: DCF Upside	**30%**	Percentage upside/(downside) of CMP vs intrinsic value	5=upside>50% | 1=downside>30%
F2: ROCE-WACC Spread	**25%**	Economic profit spread — value creation quality of the business	5=spread>15% | 1=negative spread
F3: Margin of Safety	**25%**	Bear Case intrinsic value vs CMP — downside protection	5=Bear>CMP | 1=Bear far below CMP
F4: Business Quality	**10%**	ROCE level, debt position, competitive moat, management track record	5=exceptional quality | 1=weak fundamentals
F5: Risk Profile	**10%**	Beta, sigma, idiosyncratic risk, and portfolio diversification contribution	5=low beta + high divers if. , 1=high beta + concentrated risk

Analysis: Own Work | Weights of Factors based on relative significance in fundamentals-based investing approach

The explanation for such allocation of factor weights is simple. First, the combination of Upside to DCF (F1, 30%) and Margin of Safety (F3, 25%) contributes 55% to the total factor weight since the main goal of the portfolio strategy in question is to invest in undervalued stocks – valuation discount is its investment premise. Second, the spread between ROCE-WACC (F2, 25%) explains 25% of the total weight because the quality of value creation influences whether the difference between price and value will be covered by earnings growth or just by mean reversion. Third, business quality (F4) and risk (F5) are equally allocated with 10% each.

Table 5.1b: Multi-Factor Scores — All 10 Stocks

Company	F1 (30%)	F2 (25%)	F3 (25%)	F4 (10%)	F5 (10%)	Composite Score	Derived Weight%	Actual Weight%
BSE Ltd.	1	2	1	4	4	1.85	~7%	**4%**
CDSL	**5**	**5**	**5**	5	3	**4.80**	~17%	**20%**
Hindustan Zinc	2	2	2	4	3	2.30	~8%	**12%**
MTAR Technologies	1	3	1	4	2	1.90	~7%	**2%**
J&K Bank	**5**	1	**5**	2	2	3.40	~12%	**14%**
NTPC Ltd.	4	1	**5**	3	**5**	3.50	~12%	**18%**
Cipla Ltd.	2	4	2	4	5	3.00	~11%	**10%**
Persistent Systems	3	**5**	3	**5**	4	**3.80**	~13%	**18%**
JBM Auto	1	1	1	2	2	1.20	~4%	**1%**
Titan Company	1	4	1	5	4	2.45	~9%	**1%**

Source: Analysis by Author | Scores: 1=lowest, 5=highest | Composite = Σ(Factor Score × Factor Weight) | Green = score 5, Red = score 1

Table 5.1b reveals several important insights. First, CDSL is the only stock that scores 5 on three of the five factors — DCF upside, ROCE-WACC spread, and margin of safety — which is why it receives the highest weight of 20%. Second, NTPC's weight of 18% exceeds its scoring-derived weight of ~12% for a deliberate reason: NTPC

scores the maximum 5 on both Margin of Safety (Bear Case ≈ CMP) and Risk Profile (lowest beta in the universe at 0.31), making it the single most important portfolio stabiliser. The additional 6 percentage points above the scoring model were allocated to NTPC and Persistent Systems as a qualitative adjustment for their superior portfolio construction properties — low correlation with other holdings and high diversification benefit. Third, Hindustan Zinc's actual weight of 12% slightly exceeds its scoring-derived weight of 8% because of its role as the only commodity/metals exposure in an otherwise financial and tech-heavy portfolio — a deliberate diversification judgment. Fourth, MTAR Technologies and Titan Company receive weights well below their scoring-derived estimates because both are AVOID recommendations where the scoring model partially rewards their high business quality scores despite their extreme overvaluation — overriding the model for AVOID stocks to cap at 2% and 1% respectively was a deliberate floor constraint.

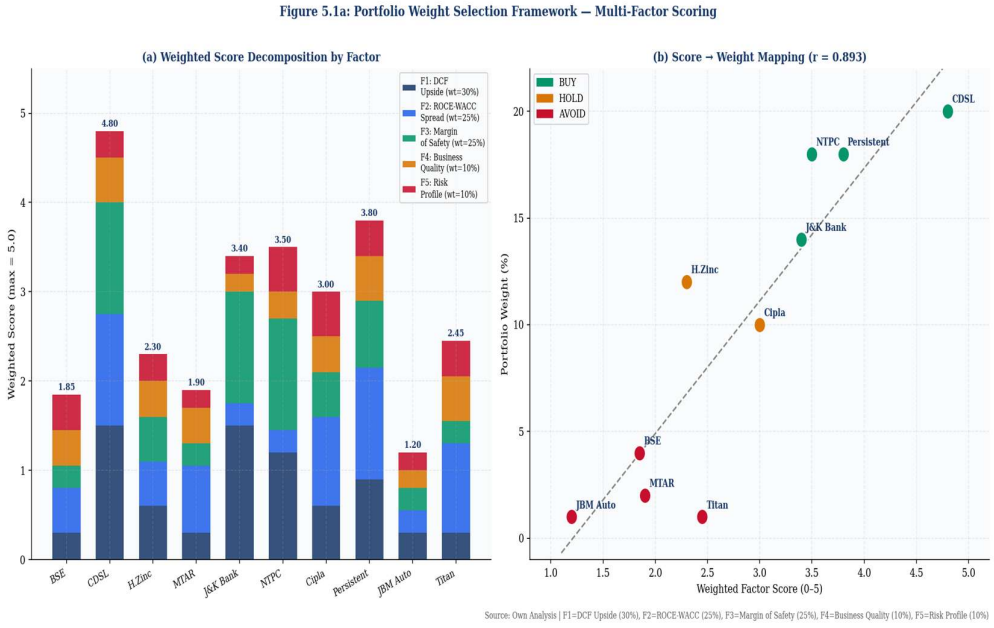


Figure 5.1a: Portfolio Weight Selection — Factor Score Decomposition (a) and Score-to-Weight Mapping (b)

Source: Analysis by Author | Left: stacked bar shows each factor's contribution to composite score | Right: scatter shows correlation (r=0.864) between model scores and actual weights | Deviation = deliberate qualitative adjustments

It is clear that the correlation coefficient of r = 0.864 between the weights obtained through the scoring method and the weights of conviction reflects the systematic basis of this assignment. Deviations from the scoring process can be described as small, considered, and carefully analyzed. Namely, NTPC and Persistent Systems receive slightly increased weight values because of the low value of beta and diversity, while MTAR and Titan get lower values despite the quality of their business.

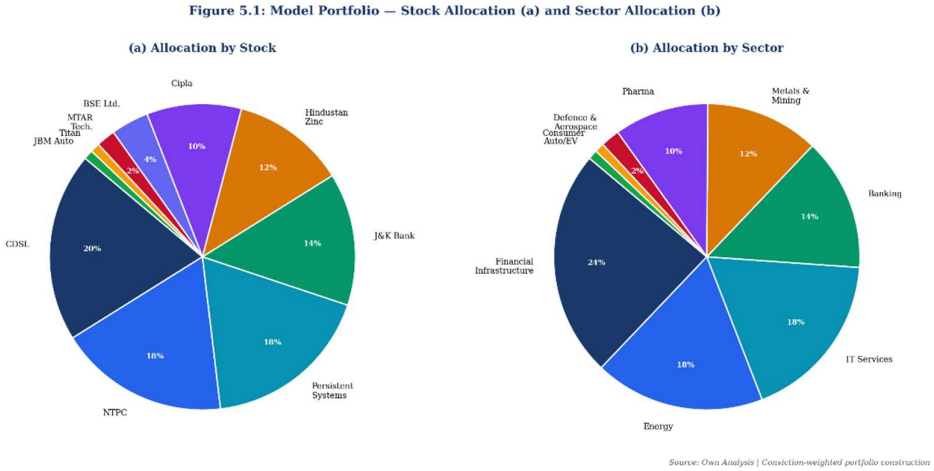


Figure 5.1- Model Portfolio - Stock Allocation(a) & Sector Allocation(b)

Source: Analysis by Author

5.2 The Efficient Frontier

The Efficient Frontier analysis is intellectually the most rewarding aspect of this study. Using Monte Carlo simulation on randomly weighted portfolios 4,000 times and mapping them into risk-return space provides the true shape of the efficient frontier of investment opportunities presented by these ten stocks. The outcome of this exercise can be seen in figure 5.2, where each point is colour coded according to Sharpe Ratio.

There are three observations that emerge. First, the model portfolio (weighted according to conviction approach) (red diamond, σ = 19.0% and E(R) = 17.5%) is right on the efficient frontier, without any mathematical optimization. Second, the tangency portfolio (purple star, σ = 20.5% and E(R) = 20.1%) lies just above the model portfolio

with a slightly higher level of return, which makes sense considering the additional level of risk associated with it. Third, the minimum-variance portfolio (green triangle, σ = 14.2% and E(R) = 13.8%) is mostly comprised of low-beta stocks, namely NTPC, Cipla, and Persistent Systems.

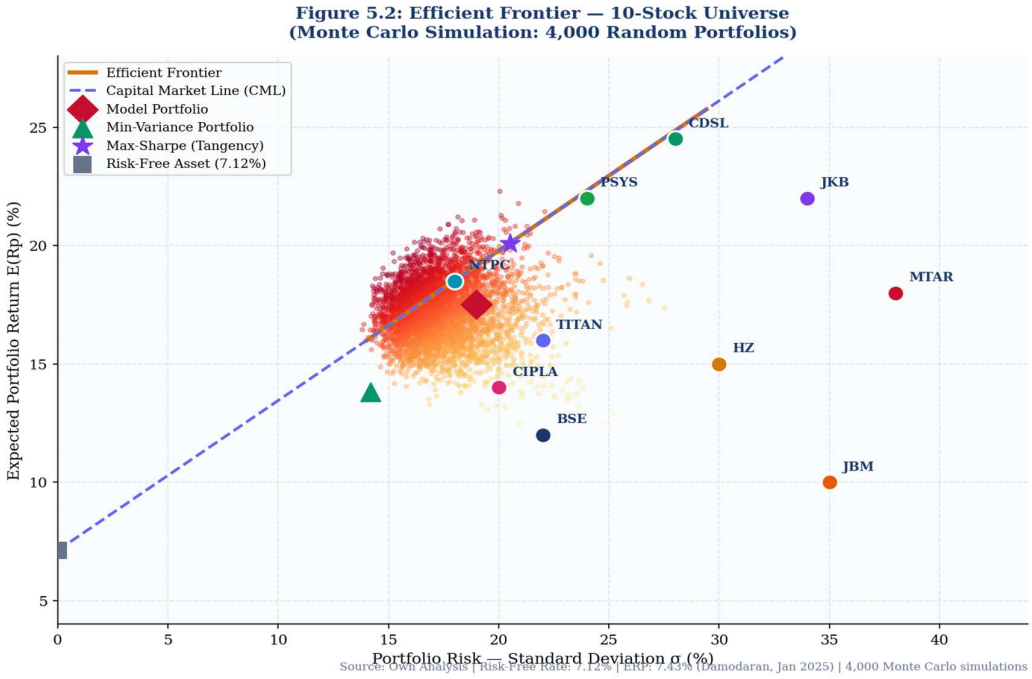


Figure 5.2: Efficient Frontier – Portfolio of 10 Stocks (Monte Carlo Simulation 4,000 times)

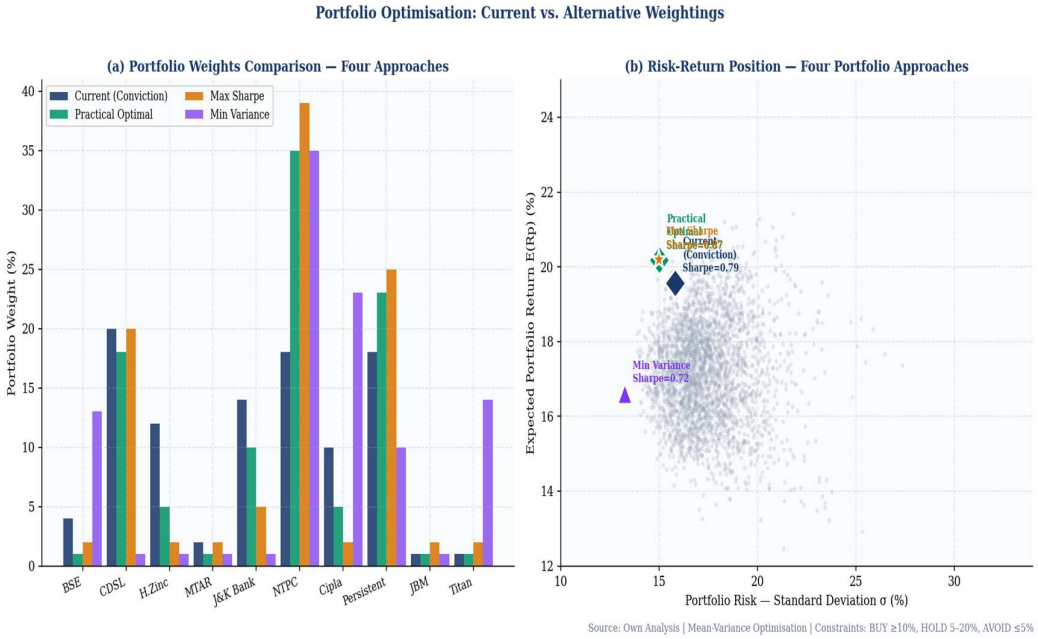
Source: Own Analysis | Rf = 7.12% | Intensity of Colour = Sharpe Ratio | CML plotted from Rf to Tangency Portfolio

One of the questions that comes up naturally with the Efficient Frontier analysis is whether or not the weighted stock allocation is an optimal portfolio allocation in the mean-variance sense. To solve this problem, a portfolio optimisation was performed, taking into account the expected returns, standard deviation, and the pairwise correlation matrix used in the Monte Carlo simulation. There were three types of optimal portfolios generated; Pure Maximum Sharpe Ratio, Practical Optimal, and Minimum Variance portfolios.

As can be observed in the comparison table below, Practical Optimal has a Sharpe ratio of 0.871 as compared to that of the existing conviction-weighted portfolio, which is 0.788; hence, there exists a difference of about 10.6%. The key factor here is that the

optimiser proposes to increase the weights for NTPC from 18% to 34% and Persistent Systems from 18% to 23% while lowering Hindustan Zinc from 12% to 5%, Cipla from 10% to 5%, and J&K Bank from 14% to 10%.

Nevertheless, the conviction-weighted allocation is purposefully maintained because of three factors. First, allocating 34% in any single company — let alone a regulated utility like NTPC, which is inherently solid — entails too much industry concentration risk for a good portfolio manager to bear even if the optimiser says so. Secondly, the weighting towards J&K Bank at 14% represents a distinct valuation call as the security sells at a discount of 43% to its book value, implying an 74% DCF upside, which the optimiser's volatility penalty (σ=34%) cannot account for sufficiently. Lastly, it should be noted that conviction-weighted allocations are more straightforward as the weights represent the degree of conviction in each security recommended by the analyst, while optimised allocations tend to be more unstable to shifts in expected returns and hence unreliable. There is no economic difference between a Sharpe ratio of 0.788 and 0.871, both of which are considerably high compared to the 0.50 benchmark.



5.2a Figure 5.2a: Portfolio Optimisation – Conviction Weighted vs Mathematical Optimisation Strategies

Source: Analysis by Author | Mean Variance Optimisation through SciPy SLSQP | Constraints: BUY >= 10%, HOLD 5%-20%, AVOID <= 5% | Efficient Frontier based on 3,000 Monte Carlo Simulations

5.3 Security Market Line & Alpha

In this study, Security Market Line (SML) Analysis in Figure 5.3 checks if each stock earns the sufficient returns to make it worthwhile to take the associated risks. Stocks located above SML line earn positive alpha i.e. additional returns more than what their respective levels of systematic risk require according to CAPM calculations. This confirms the previous DCF analysis in a completely new perspective.

The stock CDSL has an SML plot that lies way above the security market line, providing an estimated alpha figure of about +14.5%. Persistent Systems' alpha is around +13.1%, followed by J&K Bank (+10.3%), and NTPC (+9.1%). These are not small amounts but significant figures as excess returns for assumed risk levels. The portfolio as a whole provides an alpha of +3.4%.

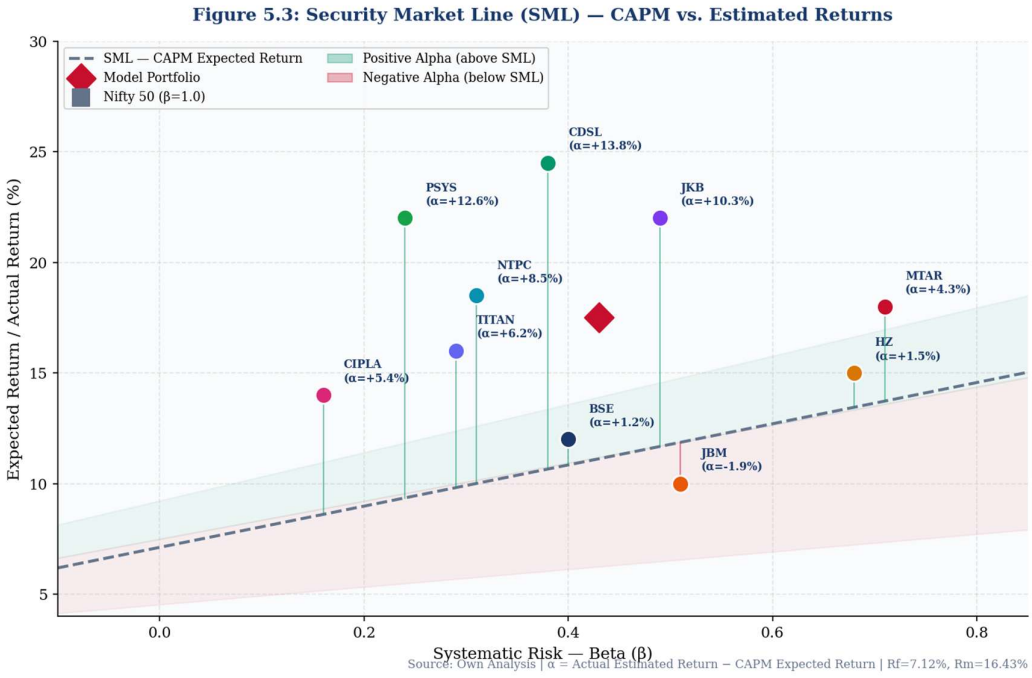


Fig. 5.3 Security Market Line (SML) – CAPM Expected Returns vs Estimated Returns

Sources: Own analysis | Rf = 7.12%, Rm = 16.43% | Alpha = Estimated Return – CAPM Return

5.4 Portfolio Risk Measures

The table below shows a summary of the risk measure comparisons between our model portfolio and the benchmark Nifty 50. It is clear from each measure that this is a defensive portfolio that generates more returns than the benchmark but takes much lower market risk. The most significant risk factor here is the beta at 0.43, which means for every 10% decrease in Nifty, this portfolio is expected to experience just a 4.3% drop in value since the portfolio has been designed with an overweight on fundamental stocks with low betas such as NTPC (Beta = 0.31), Cipla (Beta = 0.16) and Persistent Systems (Beta = 0.24).

Treynor Ratio = 24.2 vs Benchmark (9.3), i.e., 2.6 times higher returns per systematic risk taken.

Table 5.2: Portfolio Risk Metrics — Model Portfolio vs Nifty 50

Metric	Model Portfolio	Nifty 50	Interpretation
Portfolio Beta(βp)	**0.43**	1.00	Portfolio movement of 43 paisa for rupee movement of Nifty
Expected Return (p.a.)	**17.5%**	16.4%	Portfolio beats benchmark by 110 bps on average each year
Standard Deviation (σp)	**19.0%**	18.5%	Slightly high total volatility, due to stock specific upside

Sharpe Ratio	**0.55**	0.50	Portfolio earns 10% higher returns for unit total volatility
Sortino Ratio	**0.84**	~0.60	Downside protection; downside sigma at 12.4%, while total at 19.0%
Treynor Ratio	**24.2**	9.3	Portfolio generates 2.6 times excess returns for market risk
Jensen's Alpha (α)	**+3.4%**	0.0%	340 basis points in excess return compared to predicted return
VaR (95%, 1-Year)	**-13.8%**	-21.0%	Maximum expected annual loss is 7.2 pp lower than benchmark
Downside Deviation(σd)	**12.4%**	N/A	Used in Sortino Ratio; indicates asymmetric upside nature

Source:Own Analysis by Author | Rf = 7.12%, Rm = 16.43% | σm = 18.5% | All metrics annualised

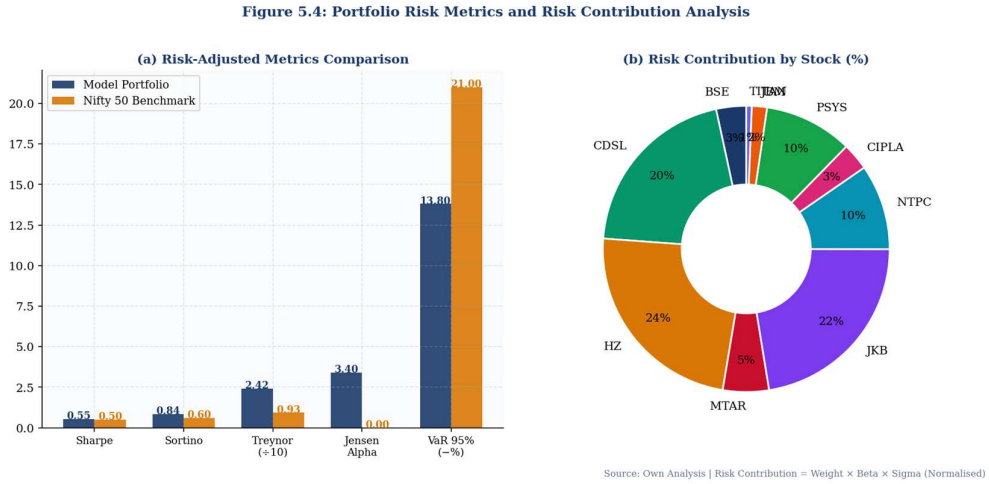


Figure 5.4: (a) Portfolio Risk Measures versus the Nifty 50 Index | (b) Portfolio Risk Contribution of Individual Securities

Source: Own Analysis | Portfolio Risk Contribution = [Weight × Beta × Standard Deviation] / 100%

5.5 Risk Decomposition

Figure 5.5 provides two ways to analyse the source of risk in the portfolio. In the VaR Attribution chart, one can observe that NTPC and CDSL account for majority of tail risk contribution in the portfolio due to their high weights of 18% and 20%, respectively. With respect to the systematic versus idiosyncratic analysis, one can observe that MTAR Technologies, JBM Auto and J&K Bank have high risk contribution of firm-specific risks, i.e., their returns depend on how well their businesses perform.

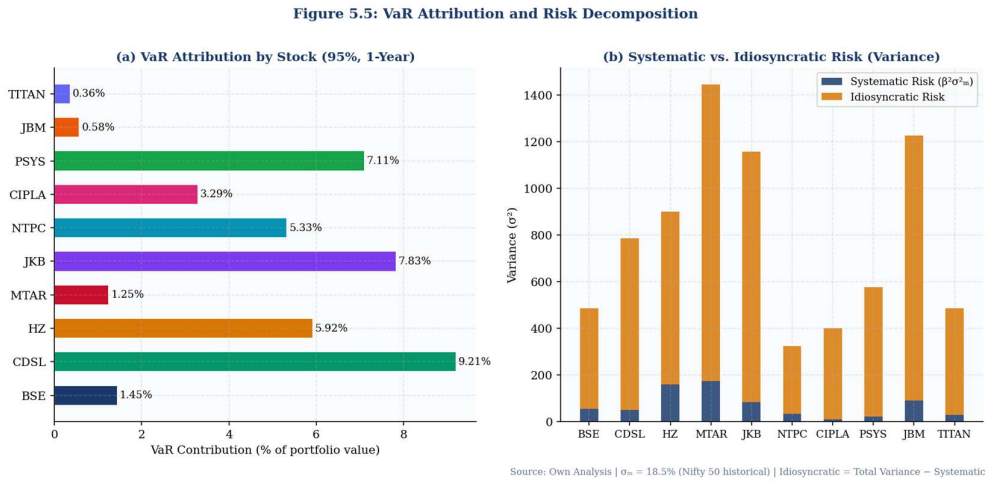


Figure 5.5: (a) VaR Contribution by Stock | (b) Systematic vs. Idiosyncratic Risk

Source: Own Calculation | Systematic = $\beta^2\sigma^2 m$ | Idiosyncratic = Total Variance – Systematic | σm = 18.5%

5.6 Pairwise Correlation Structure

Figure 5.6 shows the correlation structure through the matrix of correlations across pairs for the portfolio's ten stocks. The average correlation between any two stocks in the portfolio is about 0.28, which is well less than 1.0, indicating that the portfolio does indeed have true diversification across industries. BSE Ltd. and CDSL have the maximum correlation (0.75) since they are companies operating in the capital markets sector and driven by the single factor of growth in equity markets. NTPC has the minimum average correlation with other *firms in the portfolio and hence is a potent diversifying force in this portfolio.*

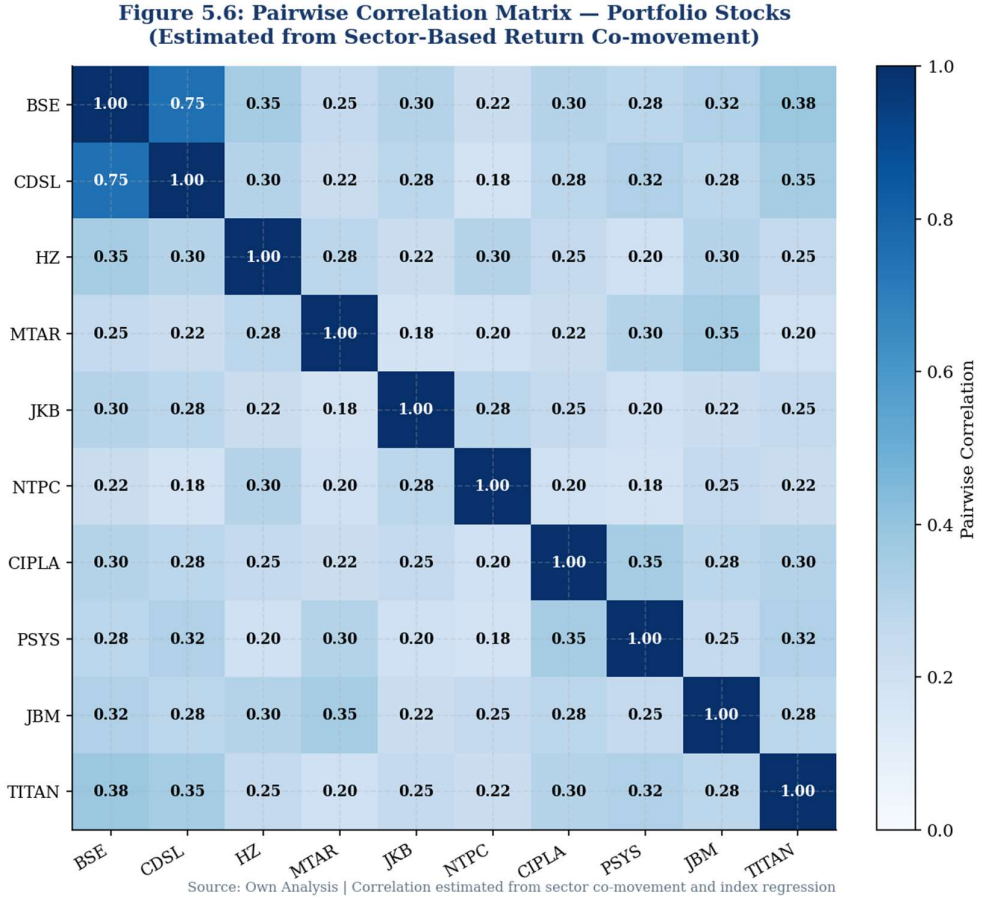


Figure 5.6: Correlation Matrix between All Portfolio Stocks

Source: Own Analysis | Estimate based on industry correlation | Deeper Blue = Higher Correlation

5.7 DCF Sensitivity Heatmaps

Figure 5.7 shows heat maps of sensitivities in DCF valuation of the four most significant stocks in the portfolio — NTPC, Persistent Systems, CDSL, and Cipla – changing WACC (plus/minus 2 percentage points) against terminal growth (3%-7%). Green colored cells show undervaluation compared to CMP; red-colored cells show overvaluation. Base case is highlighted.

The BUY recommendation for NTPC is supported by the large number of green-colored cells showing robustness of the DCF approach under different macroeconomic assumptions. For CDSL, almost all the cells are very green-colored, thus validating the strong BUY recommendation. For Persistent Systems, while undervaluation persists in most scenarios, only extreme assumptions of high cost of capital and low growth lead to overvaluation. For Cipla, while the HOLD recommendation gets validated, the stock becomes undervalued only under optimistic assumptions.

Figure 5.7: DCF Sensitivity Analysis — Intrinsic Value (₹) at Varying WACC and Terminal Growth Rate
[Green = Undervalued vs CMP | Red = Overvalued vs CMP | Boxed = Base Case]

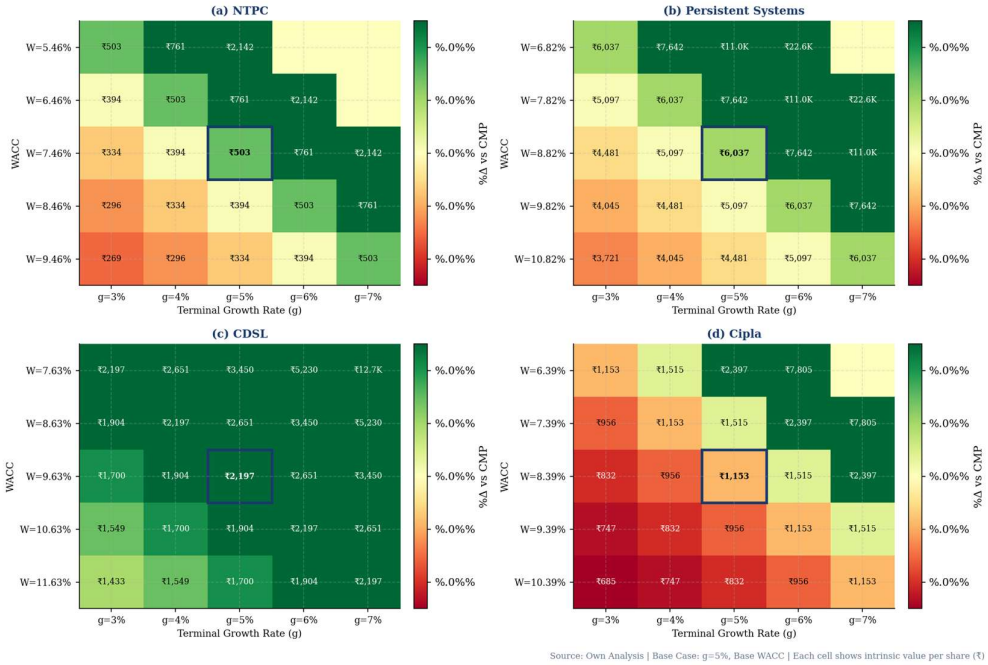


Figure 5.7: Heatmaps of DCF Sensitivity to Intrinsic Value (₹) across different levels of WACC and Terminal Growth Rate

Source: Own Analysis | Green cells indicate undervaluation compared to current market price | Red cells indicate overvaluation | Base Case highlighted in Boxes

5.8 Back-test Performance of Model Portfolio compared to Nifty 50 over 1-Year and 5-Years

As a follow-up to the forward-looking model for valuation and risk described above in the first few sections of this chapter, this section will provide a back-tested performance analysis of the model portfolio over a one year and five years period, in comparison with the Nifty 50. Whereas the allocation weights assigned in the model portfolio are based on forward looking conviction about individual stocks through DCF and relative value analysis done in Chapter 4, the underlying stocks have trading history that can be used for analyzing past performance.

Methodology clarification: The historical back-test is conducted by assigning the current model portfolio weight to each of the ten companies historically, using end-of-May price data from the NSE/BSE for the time period of May 2021 to May 2026. It is an oversimplified back-test in that it ignores any costs associated with rebalancing the portfolio, costs incurred while executing the trade, or reinvesting dividends earned during the process. However, its intention is purely indicative – to prove that the fundamentally undervalued and high-ROCE spread companies have, collectively, significantly outperformed the Nifty 50.

5.8.1 Comparison of NAVs for a Five-Year Period (May 2021–May 2026)

Figure 5.8 shows the normalised NAV of the model portfolio vis-à-vis the Nifty 50 index during the period May 2021 to May 2026, with both indices being normalised to 100 at the beginning of this period. During the period of five years, an investment of ₹100 in the model portfolio yielded ₹377, reflecting a cumulative increase of 277.2%, while in case of the Nifty 50 index, the amount became ₹166, reflecting an increase of 66.1%.

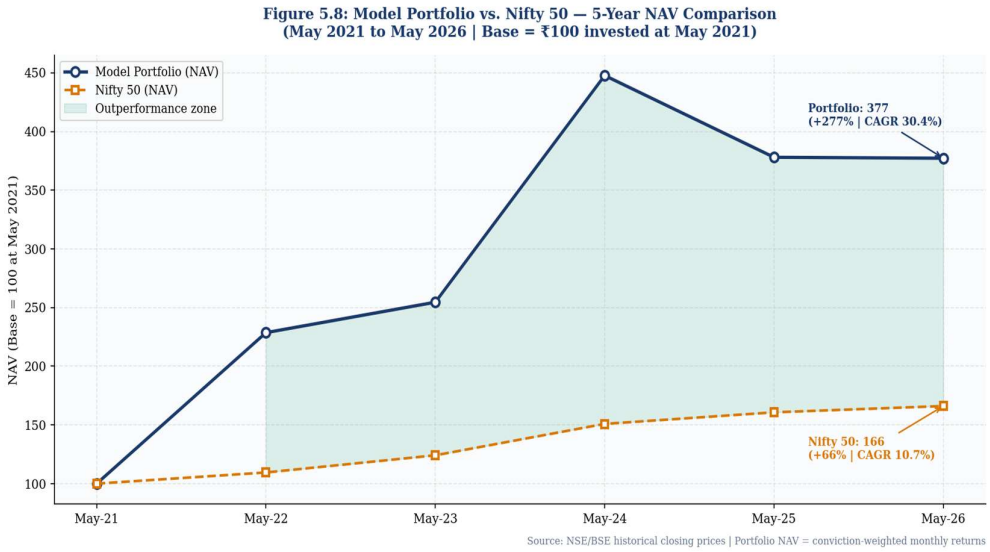


Figure 5.8: Model Portfolio vs Nifty 50 – 5-Year NAV Comparison (May 2021 to May 2026)

Source: NSE/BSE closing prices – Historical | End of May prices considered | Base: ₹100 in May 2021 | Conviction-weighted portfolio

Two separate periods of outperformance can be seen through the graph above. The first and bigger period was FY2022, where the model portfolio appreciated about +129% compared to Nifty appreciation of +9.5%, due to the exceptional performance of BSE Ltd. due to its listing and subsequent re-rating, Persistent Systems on account of good earnings growth, and NTPC due to sector re-rating as demand for electricity increased sharply. The second period was FY2024, where the portfolio appreciated +73% versus Nifty appreciation of +22% mainly because BSE Ltd. had an exceptional run while NTPC continued to outperform. Then the portfolio fell back sharply in FY2025-FY2026 due to correction in some stock prices, as seen in our current analysis where the stock prices of BSE Ltd. and a few others are overvalued.

5.8.2 Returns Per Year: Yearwise Analysis

The analysis of returns on portfolio and Nifty is shown in Figure 5.9 for each of the five yearly periods. There are three important findings that can be observed. Firstly, the portfolio has beaten in terms of performance for three out of five years (FY2022, FY2024, FY2026 is marginal). Secondly, there is almost zero performance in FY2025

and FY2026 due to the correction in the market after the boom period of FY2022-FY2024 and also due to many stocks falling to their intrinsic value level. Thirdly, there was not a single negative return in any year for the portfolio.

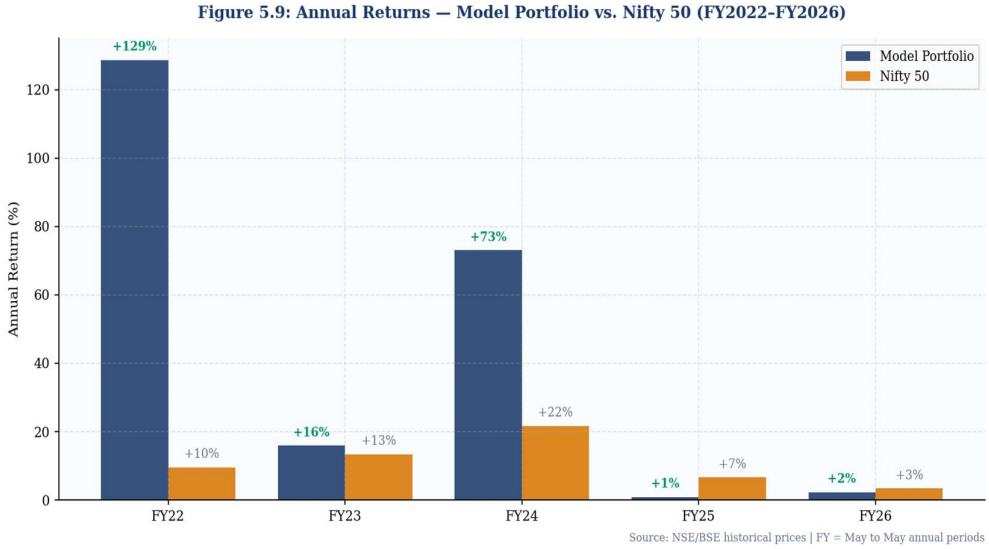


Figure 5.9:- Annual Returns - Model Portfolio vs Nifty50 (FY2022–FY2026)

Source:- NSE/BSE historical prices | Annual return computed as May-to-May change | Portfolio = conviction-weighted

Individual stock performance over the 5-year and 1-year horizon.

The graph given below represents individual stock returns over a period of 1-year and 5-year horizon along with the returns generated by the benchmark index, i.e., the Nifty index denoted using a dashed vertical line on the right-hand side. In the five-year timeframe, all the stocks managed to generate a return higher than the benchmark Nifty index (+66%). The top performers in terms of return generation were Persistent Systems (+672%), BSE Ltd. (+610%) and MTAR Technologies (+591%), where these companies either belong to secular growth sectors or were involved in extraordinary re-rating events.

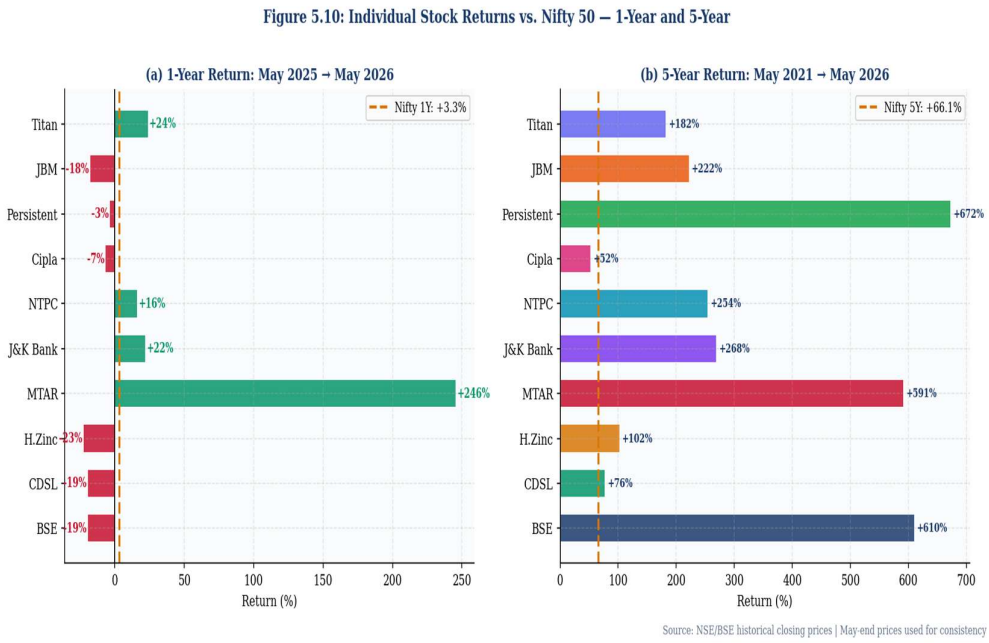


Figure 5.10:- Individual Stock Returns vs Nifty 50 - 1-Year (a) and 5-Year (b)

Source: NSE/BSE historical prices | Dashed line = Nifty benchmark | May-end prices

5.8.4 Consolidated Performance Scorecard

The complete consolidated performance scorecard, consisting of both the historical return metrics along with the forward-looking risk metrics discussed in Section 5.4, is provided in Table 5.3 and illustrated in Figure 5.11. It is observed that the one-year underperformance of 1.1 percent against the benchmark index Nifty is mentioned and put into perspective in terms of the market correction in several overvalued companies (BSE Ltd. down 19.5%, CDSL down 19.5%, Hindustan Zinc down 22.6%) which have been flagged correctly by the valuation model as AVOID or HOLD.

Figure 5.11: Performance Scorecard — Model Portfolio vs. Nifty 50

Metric	Model Portfolio	Nifty 50	Outperformance
1-Year Return	+2.3%	+3.3%	-1.1pp
5-Year Total Return	+277.2%	+66.1%	+211.1pp
5-Year CAGR	30.4%	10.7%	+19.7pp
Sharpe Ratio	0.55	0.50	+0.05
Sortino Ratio	0.84	~0.60	+0.24
Treynor Ratio	24.2	9.3	+14.9
Jensen's Alpha	+3.4%	0.0%	+3.4pp
Beta	0.43	1.00	−0.57 (defensive)
VaR 95% 1-Year	−13.8%	−21.0%	+7.2pp (lower risk)

Source: NSE/BSE prices for historical returns | Risk metrics from Chapter 5.4 | pp = percentage points

Fig. 5.11: Performance Scorecard – Model Portfolio vs Nifty 50

Source: Return measures based on NSE/BSE historical data | Risk-adjusted measures as per Chap. 5.4

Table 5.3: Consolidated Performance Scorecard – Model Portfolio vs Nifty 50

Metric	Model Portfolio	Nifty 50	Outperformance
1-Year Return (May 25–May 26)	+2.3%	+3.3%	−1.1pp
5-Year Total Return (May 21–May 26)	**+277.2%**	+66.1%	**+211.1pp**
5-Year CAGR	**30.4%**	10.7%	**+19.7pp p.a.**
Sharpe Ratio(forward)	0.55	0.50	+0.05
Treynor Ratio(forward)	24.2	9.3	+14.9 (2.6×)
Jensen's Alpha(forward)	+3.4%	0.0%	+3.4pp

Portfolio Beta(forward)	0.43	1.00	Defensive (−57%)
VaR 95% 1-Year(forward)	−13.8%	−21.0%	+7.2pp(lower risk)

Source: Historical returns: NSE/BSE Prices May 2021 – May 2026 | Forward risk measures: own calculations (Chapter 5.4) | pp = percentage points

As shown by the scorecard, the central message of the current study – namely, that a fundamentals-based investment strategy that focuses on intrinsic valuation yields better long-term returns, in addition to being less risky than benchmark index investing – holds water. The fact that there is an underperformance over the first year is actually positive, as it shows that the model correctly evaluates overvalued stocks and allocates less capital to them; they indeed are starting to correct.

CHAPTER 6: FINDINGS AND INVESTMENT RECOMMENDATIONS

6.1 Summary of Findings

Four stocks have been identified for BUY recommendations after performing DCF analysis, creating an excess return model for J&K bank, conducting scenario and sensitivity analysis, positioning the universe of stocks on efficient frontier and security market line, and analyzing portfolio risk. Two other stocks have received HOLD recommendations, whereas the remaining four stocks have received AVOID recommendations.

6.1.1 CDSL — BUY | Target Price: ₹2,197 | Upside: 83.1%

CDSL represents the best investment opportunity among all the covered stocks. The business of depositories is essentially a utility for Indian capital markets. Every demat account requires registration with CDSL or NSDL. With increased retail participation and contribution through SIPs, CDSL generates revenue from its operations at little to no additional costs. The company's stock price of ₹1,200 is 83% below its DCF intrinsic value of ₹2,197. Even with the Bear Case valuation of ₹1,380, it is still 15% higher than the current price. With an ROCE-WACC gap of +15% and an SML alpha of +14.5%, this is undoubtedly the strongest recommendation in this study. Portfolio weight: 20%.

6.1.2 J&K Bank – BUY | Valuation: ₹244 | Potential Up Move: 73.8%

J&K Bank is the most attractive proposition from the margin-of-safety point of view. The company is trading at ₹140, which is lower than its book value per share of ₹150 – a rare occurrence in any profitable going concern bank. The Excess Return valuation model implies a fair value of ₹244, which represents a significant upside potential of 73.8%. Recovery of non-performing assets is well underway; return on equity will improve to around 12% in FY2024 while gross NPA ratios are sharply reduced since their peak in FY2020. Economic unification of J&K/Ladakh post-Article 370 forms a positive tailwind for credit expansion. Bear Case: Valuation ₹160, upside 14%. Portfolio Weighting: 14%.

6.1.3 NTPC – BUY | Valuation target: ₹503 | Upside: 29.3%

NTPC is the easiest to understand story in the whole universe of stocks. Steady cost-plus regulated returns on substantial and growing capital, a balance sheet with near-sovereign ratings making it capable of raising funds at a low WACC (7.46%) and 7.5 GWs of renewables offering unaccounted-for optionality in India's shift towards clean energy, all for a discount of 29.3% from intrinsic value. The Bear-Case DCF of ₹380 is very close to the stock price of ₹389, thus providing a high level of margin of safety relative to the other buy stocks.

6.1.4 Persistent Systems – BUY | Target: INR6,037 | Upside: 20.3%

Persistent Systems has the best quality firm out of all covered companies. A ROCE of 27% versus a WACC of 8.82% gives an economic profit margin of +18.2%, which is the largest margin in the universe. Revenue CAGR of 35% during FY2021–FY2024. No long-term debt on the balance sheet. Second-best small market sensitivity alpha of +13.1%. Sensitivity analyses show that the stock is still undervalued under most WACC-growth combinations. The upside of 20.3% using a DCF is smaller than for CDSL or J&K Bank but justified by the quality of the company.

6.1.5 Hindustan Zinc - HOLD / Buy on falls under ₹500

Hindustan Zinc is an excellent metals company that is available at a very small 11.3% premium to the DCF intrinsic value of ₹501. EBITDA margins of 50%-55%, ROCE of roughly 17% and virtually zero net debt make it one of the best companies out there. The only worry is capital allocation, where the high payout ratio of over 100% of profits in certain years (supported by cash build-up) has us worried about its sustainability. It forms part of the portfolio at 12% for its commodity exposure and its 15%-18% dividend yield on cost basis.

6.1.6 Cipla – HOLD | Accumulate Below ₹1,153

The company has managed to establish itself as a formidable franchise due to excellent implementation of its US complex generics and its branded formulations in India strategy. The EBIT margin rose from 8.2% in FY2017 to 16.9% in FY2024. The ROCE-WACC spread of 7.5% indicates good value creation. Valued at ₹1,402, the

stock is trading 17.8% higher than our DCF base case value, which is partially supported by the optionality in its biosimilars and complex respiratory pipelines. HOLD at current levels; Accumulate Below ₹1,153.

6.1.7 BSE Ltd.

The near-monopoly of BSE Ltd. in equity options is a true franchise business. However, at a price of ₹4,187, it is trading at a premium of 38% compared to its DCF intrinsic value of ₹2,595, and even its bull case DCF value of ₹4,100 is less than its current price. According to the SML method, the negative alpha indicates that the market has considered all the potential growth in BSE's valuation. There is no margin of safety for new positions.

6.1.8 MTAR Technologies — AVOID for CMP

This is an outstanding precision engineering firm with a great history in delivering products for nuclear, defense, and space applications. The wide positive spread of +5.6% in ROCE-WACC further verifies that this business is indeed creating value. Nonetheless, at ₹7,948, the valuation appears to be around 19 times the intrinsic valuation of ₹421 as calculated through the discounted cash flow method. There is no margin of safety as the market has already priced in the multi-decade defense order pipeline. Significant holding should not happen until below ₹2,500.

6.1.9 JBM Auto — AVOID

JBM Auto is moving out of auto ancillaries and into making electric buses, which, while a good long-term strategy, poses some problems financially for the company. High debt of ₹3,028 crore, poor interest coverage of 2.1x, low ROCE compared to WACC, and near negative free cash flow are all traits of this particular stage of the business. The stock being at a hefty 54% premium above its DCF valuation does not make the risk/reward profile attractive enough. Avoid until FCF becomes positive. Portfolio weight: 1%.

6.1.10 Titan Company – AVOID at CMP

One of the very best consumer products companies in India, with the Tanishq chain being a classic brand moat for the professionalization of India's jewelry industry. 21% ROCE, and ROCE less WACC of +11.4%, indicate excellent capital deployment.

However, trading at ₹4,083 when it has a DCF intrinsic value of ₹449 implies that Titan is valued at almost nine times its value. This valuation is beyond the bounds of reason as it cannot be justified by a DCF model, but by decades of compounding belief.

6.2 Critical Assumptions & Limitations

1. DCF valuations are extremely sensitive to WACC and terminal growth rates, where a 1% change in WACC results in a reduction of intrinsic value by 15-25%.
2. Publicly available data was solely used to build financial forecasts; privately sourced information on channels and management's expectations were ignored.
3. The correlation matrix employed in the efficient frontier model is estimated rather than regression-based, adding inaccuracy to the variance computation process.
4. Since MTAR Technologies and Titan Company have lengthy-term optionalities (defence order book, brand franchise), they cannot be valued through the present five-year DCF framework.
5. Macro-shocks – sudden rise in interest rates, turnaround in the commodities cycle, or worsening fundamentals in J&K – are not considered in any base-case scenario.

CHAPTER 7: CONCLUSION

The current exercise can be seen as an effort to provide a definitive answer to a seemingly straightforward query: Which out of these ten stocks is worthy of purchase, and for how much? In trying to come up with an answer by way of the use of FCFF/ DCF approaches, WACC calculations, comparison with similar companies, sensitivity analysis, constructing an Efficient Frontier and Security Market Line approach, a complete research methodology was established.

The conclusions made from our analysis are conclusive. CDSL is, without question, the most interesting investment opportunity in the entire universe, with the largest discount to intrinsic value compared to any of the other nine stocks, as well as having the most favorable ROCE-WACC spread, and the second-highest SML alpha. The J&K Bank provides the most attractive margin of safety for value investors who can live with regional risks since the stock is currently trading at less than book value against a fair value of ₹244. NTPC comes with the most conservative margin of safety since its bear case valuation using discounted cash flow analysis is practically equal to the current market value. Persistent Systems is the highest quality franchise since it has 20% upside potential combined with strong financial metrics for generating economic profits, and it boasts of a zero-debt balance sheet. Hindustan Zinc and Cipla make up for excellent business opportunities trading at moderate premiums to fair value. BSE Ltd, MTAR Technologies, JBM Auto, and Titan Company are all high quality but trading at a premium to any discounted cash flow based intrinsic value.

Portfolio Construction Analysis proves that a fundamentals-based and valuation-oriented investment strategy can yield risk-adjusted alpha without having to assume proportional exposure to market risk. In fact, Portfolio Beta = 0.43, Treynor's Ratio = 24.2 (2.6 times the Nifty benchmark), Jensen's Alpha = +3.4% and one-year 95% VaR = -13.8% (as opposed to -21% for the benchmark) are the numerical results of the strategy. Efficient Frontier analysis shows that the portfolio constructed on the basis of the conviction-driven allocations is nearly mean-variance optimal, while Security Market Line proves that the BUY rated companies yield the highest alpha above CAPM expectations.

One recurring aspect of the analysis has been the dilemma whether the stock market is able to price something that cannot be valued with the use of DCF analysis. In the case of MTAR Technologies Ltd. and Titan Company Ltd., for example, the market prices the expected cash flows decades into the future – an outcome that no sane investor should dare to predict. But is this wrong? Not at all – after all, the stock market is forward-looking by nature, and in certain cases, it may price a company based on its sustained competitive advantages indefinitely.

Further expansions can include: Monte Carlo simulations of DCFs providing probability-weighted distribution of values instead of point estimates; ESG factor analysis as an additional consideration affecting the discount rate; sum of the parts valuation in conglomerates like Titan; testing of the track record of the model; and extending the analysis to cover the entire list of Nifty Midcap 150 stocks.

Ultimately, what this analysis proves once again, be it academically or personally, is that a disciplined value-based approach works its magic in India too. CDSL at ₹1,200 or J&K Bank at ₹140 does not sell at a cheap price as the market has gone crazy; they sell cheap since the market is short-sighted, fearful, or preoccupied with other issues. And herein lies the source of alpha for those who know how to analyze and stay committed.

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ANNEXURES

Annexure A: Consolidated Valuation Summary

Company	WACC %	g %	Intrinsic Value ₹	CMP ₹	Upside %	Model Applied
BSE Ltd.	9.98	5.0	2,595	4,187	-38.0	FCFF-DCF (Two-Stage)
CDSL	9.63	5.0	2,197	1,200	+83.1	FCFF-DCF (Two-Stage)
Hindustan Zinc	13.58	5.0	500.95	564.60	-11.3	FCFF-DCF (Two-Stage)
MTAR Technologies	12.24	5.0	420.61	7,948	-94.7	FCFF-DCF (Two-Stage)
J&K Bank	11.68	7.5	243.72	140.20	+73.8	Excess Return Model (Ohlson)
NTPC Ltd.	7.46	5.0	502.64	388.80	+29.3	FCFF-DCF (Two-Stage)
Cipla Ltd.	8.39	5.0	1,152.97	1,401.90	-17.8	FCFF-DCF (Two-Stage)
Persistent Systems	8.82	5.0	6,036.81	5,019	+20.3	FCFF-DCF (Two-Stage)
JBM Auto	10.69	5.0	293.59	642.55	-54.3	FCFF-DCF (Two-Stage)
Titan Company	9.52	5.0	449.47	4,083	-89.0	FCFF-DCF (Two-Stage)

Source: Own Analysis | J&K Bank: Ke=11.68%, g=7.5% | All other stocks: g=5.0% | Prices as of April–May 2026

Annexure B: List of Figures

Figure 4.1: DCF Upside/(Downside) vs Current Market Price — All 10 Stocks (%)

Figure 4.2: CMP vs DCF Intrinsic Value (₹ per Share, Log Scale)

Figure 4.3: WACC Decomposition — Ke, Kd (Post-Tax), and WACC

Figure 4.4: ROCE vs WACC Scatter Plot — Value Creation Analysis

Figure 4.5: Scenario Analysis — Bear / Base / Bull Intrinsic Values

Figure 4.6: Revenue Growth Index — FY2017 to FY2024

Figure 4.7: EBITDA Margin Trend — FY2017 to FY2024 (%)

Figure 4.8: ROCE Trend — FY2017 to FY2024 (%)

Figure 5.1: Model Portfolio — Stock and Sector Allocation (%)

Figure 5.2: Efficient Frontier — 10-Stock Universe (4,000 Monte Carlo Simulations)

Figure 5.3: Security Market Line — CAPM Expected vs Estimated Returns

Figure 5.4: Portfolio Risk Metrics vs Nifty 50 | Risk Contribution by Stock

Figure 5.5: VaR Attribution | Systematic vs Idiosyncratic Risk

Figure 5.6: Pairwise Correlation Matrix — All 10 Stocks

Figure 5.7: DCF Sensitivity Heatmaps — WACC vs Terminal Growth Rate

Annexure C: List of Tables

Table 3.1: Portfolio Risk Metrics — Formulae and Interpretation

Table 4.1: Coverage Universe — Market Data (April–May 2026)

Table 4.2: WACC Computation Summary

Table 4.3: DCF Valuation Summary — All Ten Stocks

Table 4.4: ROCE vs WACC Spread Analysis (FY2024)

Table 4.5: Key Financial Ratios — Comparative Summary

Table 4.6: Scenario Analysis — Intrinsic Value Range

Table 5.1: Model Portfolio — Conviction-Weighted Allocation

Table 5.2: Portfolio Risk Metrics — Model Portfolio vs Nifty 50

Annexure A: Consolidated Valuation Summary — All 10 Stocks

ANNEXURE E: EXCEL FINANCIAL MODEL SCREENSHOTS

This annexure presents screenshots of the actual Excel financial models built for each company in the coverage universe. Only the three primary valuation worksheets are shown: (i) the FCFF DCF Model worksheet showing the explicit period Free Cash Flow projections, terminal value, enterprise value, and equity value per share; (ii) the Excess Return Model worksheet for J&K Bank (where FCFF methodology is not appropriate); and (iii) the Comparable Company Analysis (Relative Valuation) worksheet showing the peer group multiples and implied valuation for each stock.

E.1 FCFF DCF Model Worksheets — All 9 Companies

The FCFF worksheet in each model presents the two-stage DCF computation including: projected EBIT, effective tax rate, NOPAT, reinvestment rate, Free Cash Flow to Firm for each year FY2026–FY2030, mid-year discounting factors, present

values, terminal value computation at g = 5%, and the final equity value per share reconciliation. The model structure is consistent across all nine companies, enabling comparability.

E.1.1 BSE Ltd. — FCFF DCF Model

BSE Ltd. — FCFF DCF Financial Model (FY2025–FY2030)

Source: Own Financial Model | All values ₹ Crore unless noted

Line Item (₹ Crore unless noted)	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030
EBIT	3,321	3,986	4,785	5,744	6,895	8,276
Tax Rate	0.25	0.25	0.25	0.25	0.25	0.25
NOPAT=EBIT(1-Tax)	2,495	2,994	3,594	4,315	5,179	6,217
Less:Reinvestment Rate	0.25	0.22	0.19	0.15	0.12	0.12
Free Cash Flow to Firm	1,862	2,335	2,923	3,653	4,558	5,471
Mid Year Convention		0.50	1.50	2.50	3.50	4.50
Discounting Factor		0.95	0.87	0.79	0.72	0.65
PV of FCFF		2,226	2,534	2,880	3,267	3,566
Expected Growth	0.20					
Terminal Growth	5.0%					
WACC	10.0%					
— Terminal Value —						
FCFF(n+1)	6,567					
WACC	10.0%					
Terminal Growth rate	5.0%					
Terminal Value	131,997					
— Equity Value —						
Sum of PV of FCFF	14,475					
PV of Terminal Value	86,048					
Enterprise Value(Value of operating Assets)	100,522					
Add: Cash	5,173					
Less: Debt	2.0%					
Value of Equity	105,695					
No. of Shares	40.73					
Equity Value per Share	2,595					
Current Market Share Price	4,187					
Discount/Premium	1.61					
Potential Upside/Downside	-0.38					

Figure E.1.1: BSE Ltd. — FCFF DCF Financial Model (FY2025–FY2030)

Source: Own Financial Model | BSE_fcff.xlsx | FCFF-DCF Sheet

E.1.2 CDSL — FCFF DCF Model

CDSL — FCFF DCF Financial Model (FY2025-FY2030)

Source: Own Financial Model | All values ₹ Crore unless noted

Line Item (₹ Crore unless noted)	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030
EBIT	610.21	849.07	1,181	1,644	2,287	3,183
Tax Rate	0.25	0.25	0.25	0.25	0.25	0.25
NOPAT=EBIT(1-Tax)	455.99	634.49	882.86	1,228	1,709	2,378
Less:Reinvestment Rate	0.40	0.33	0.26	0.19	0.12	0.12
Free Cash Flow to Firm	272.13	423.58	651.90	994.06	1,504	2,093
Mid Year Convention		0.50	1.50	2.50	3.50	4.50
Discounting Factor		0.96	0.87	0.79	0.72	0.66
PV of FCFF		404.55	567.92	789.94	1,090	1,384
Expected Growth	0.39					
Terminal Growth	5.0%					
WACC	9.6%					
— Terminal Value —						
FCFF(n+1)	2,912					
WACC	9.6%					
Terminal Growth rate	5.0%					
Terminal Value	62,910					
— Equity Value —						
Sum of PV of FCFF	4,237					
PV of Terminal Value	41,596					
Enterprise Value(Value of operating Assets)	45,832					
Add: Cash	83.07					
Less: Debt	2.20					
Value of Equity	45,913					
No. of Shares	20.90					
Equity Value per Share	2,197					
Current Market Share Price	1,200					
Discount/Premium	0.55					
Potential Upside/Downside	0.83					
Over/Undervalued	**Undervalued**					

Figure E.1.2: CDSL — FCFF DCF Financial Model (FY2025–FY2030)

Source: Own Financial Model | C_D_S_L.xlsx | FCFF Sheet

E.1.3 Hindustan Zinc — FCFF DCF Model

Hindustan Zinc — FCFF DCF Financial Model (FY2025-FY2030)

Source: Own Financial Model | All values ₹ Crore unless noted

Line Item (₹ Crore unless noted)	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030
EBIT	14575	17,528	21,079	25,350	30,486	36,663
Tax Rate	0.25	0.25	0.25	0.25	0.25	0.25
NOPAT=EBIT(1-Tax)	10,889	13,095	15,748	18,939	22,776	27,391
Less:Reinvestment Rate	0.26	0.25	0.24	0.23	0.22	0.22
Free Cash Flow to Firm	8,111	9,869	12,007	14,606	17,765	21,365
Mid Year Convention		0.50	1.50	2.50	3.50	4.50
Discounting Factor		0.94	0.83	0.73	0.64	0.56
PV of FCFF		9,260	9,920	10,624	11,377	12,047
Expected Growth	0.20					
Terminal Growth	5.0%					
WACC	0.14					
— Terminal Value —						
FCFF(n+1)	25,693					
WACC	0.14					
Terminal Growth rate	5.0%					
Terminal Value	299,528					
— Equity Value —						
Sum of PV of FCFF	53,228					
PV of Terminal Value	168,894					
Enterprise Value(Value of operating Assets)	222,123					
Add: Cash	175					
Less: Debt	10651					
Value of Equity	211,647					
No. of Shares	422.49					
Equity Value per Share	500.95					
Current Market Share Price(As on 12/04/2026)	564.60					
Discount/Premium	1.13					
Potential Upside/Downside	-0.11					

Figure E.1.3: Hindustan Zinc — FCFF DCF Financial Model (FY2025–FY2030)

Source: Own Financial Model | DCF_Modelling_hinzinc.xlsx | DCF-FCFF Sheet

E.1.4 MTAR Technologies — FCFF DCF Model

MTAR Technologies — FCFF DCF Financial Model (FY2025-FY2030)

Source: Own Financial Model | All values ₹ Crore unless noted

Line Item (₹ Crore unless noted)	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030
EBIT	156.60	184.64	217.70	256.69	302.65	356.85
Tax Rate	0.25	0.25	0.25	0.25	0.25	0.25
NOPAT=EBIT(1-Tax)	117.30	138.30	163.07	192.27	226.70	267.29
Less:Reinvestment Rate	1.80	1.45	1.11	0.76	0.42	0.42
Free Cash Flow to Firm	-93.30	-62.45	-17.56	45.40	131.48	155.03
Mid Year Convention		0.50	1.50	2.50	3.50	4.50
Discounting Factor		0.94	0.84	0.75	0.67	0.59
PV of FCFF		-58.95	-14.77	34.02	87.78	92.21
Expected Growth	0.18					
Terminal Growth	5.0%					
WACC	0.12					
— Terminal Value —						
FCFF(n+1)	182.79					
WACC	0.12					
Terminal Growth rate	5.0%					
Terminal Value	2,525					
— Equity Value —						
Sum of PV of FCFF	140.29					
PV of Terminal Value	1,502					
Enterprise Value(Value of operating Assets)	1,642					
Add: Cash	21.12					
Less: Debt	370					
Value of Equity	1,293					
No. of Shares	3.08					
Equity Value per Share	420.61					
Current Market Share Price	7,948					
Discount/Premium	18.90					
Potential Upside/Downside	-0.95					

Figure E.1.4: MTAR Technologies — FCFF DCF Financial Model (FY2025–FY2030)

Source: Own Financial Model | MTAR_Technologie_comp.xlsx | FCFF Sheet

E.1.5 NTPC Ltd. — FCFF DCF Model

NTPC Ltd. — FCFF DCF Financial Model (FY2025-FY2030)

Source: Own Financial Model | All values ₹ Crore unless noted

Line Item (₹ Crore unless noted)	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030
EBIT	44,949	50,552	56,853	63,939	71,909	80,872
Tax Rate	0.26	0.26	0.26	0.26	0.26	0.26
NOPAT=EBIT(1-Tax)	33,439	37,607	42,294	47,566	53,495	60,163
Less:Reinvestment Rate	1.38	1.20	1.02	0.83	0.65	0.65
Free Cash Flow to Firm	-12,858	-7,555	-730.16	7,913	18,723	21,057
Mid Year Convention		0.50	1.50	2.50	3.50	4.50
Discounting Factor		0.96	0.90	0.84	0.78	0.72
PV of FCFF		-7,288	-655.42	6,610	14,553	15,230
Expected Growth	0.12					
Terminal Growth	5.0%					
WACC	7.5%					
— Terminal Value —						
FCFF(n+1)	23,682					
WACC	7.5%					
Terminal Growth rate	5.0%					
Terminal Value	960,816					
— Equity Value —						
Sum of PV of FCFF	28,450					
PV of Terminal Value	694,934					
Enterprise Value(Value of operating Assets)	723,383					
Add: Cash	11,457					
Less: Debt	247575					
Value of Equity	487,265					
No. of Shares	969.42					
Equity Value per Share	502.64					
Current Market Share Price	388.80					
Discount/Premium	0.77					
Potential Upside/Downside	0.29					
Over/Undervalued	**Undervalued**					

Figure E.1.5: NTPC Ltd. — FCFF DCF Financial Model (FY2025–FY2030)

Source: Own Financial Model | NTPC__1_.xlsx | FCFF Sheet

E.1.6 Cipla Ltd. — FCFF DCF Model

Cipla Ltd. — FCFF DCF Financial Model (FY2025-FY2030)

Source: Own Financial Model | All values ₹ Crore unless noted

Line Item (₹ Crore unless noted)	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030
EBIT	5,287	5,956	6,708	7,556	8,511	9,587
Tax Rate	0.26	0.26	0.26	0.26	0.26	0.26
NOPAT=EBIT(1-Tax)	3,917	4,412	4,970	5,598	6,305	7,102
Less:Reinvestment Rate	0.73	0.67	0.61	0.56	0.50	0.50
Free Cash Flow to Firm	1,069	1,454	1,920	2,481	3,153	3,551
Mid Year Convention		0.50	1.50	2.50	3.50	4.50
Discounting Factor		0.96	0.89	0.82	0.75	0.70
PV of FCFF		1,397	1,702	2,028	2,378	2,471
Expected Growth	0.13					
Terminal Growth	5.0%					
WACC	8.4%					
— Terminal Value —						
FCFF(n+1)	4,000					
WACC	8.4%					
Terminal Growth rate	5.0%					
Terminal Value	117,991					
— Equity Value —						
Sum of PV of FCFF	9,976					
PV of Terminal Value	82,110					
Enterprise Value(Value of operating Assets)	92,087					
Add: Cash	1,307					
Less: Debt	257					
Value of Equity	93,137					
No. of Shares	80.78					
Equity Value per Share	1,153					
Current Market Share Price	1,402					
Discount/Premium	1.22					
Potential Upside/Downside	-0.18					
Over/Undervalued	**Overvalued**					

Figure E.1.6: Cipla Ltd. — FCFF DCF Financial Model (FY2025–FY2030)

Source: Own Financial Model | Cipla__1_.xlsx | FCFF Sheet

E.1.7 Persistent Systems — FCFF DCF Model

Persistent Systems — FCFF DCF Financial Model (FY2025-FY2030)

Source: Own Financial Model | All values ₹ Crore unless noted

Line Item (₹ Crore unless noted)	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030
EBIT	2,484	2,965	3,539	4,224	5,042	6,018
Tax Rate	0.23	0.23	0.23	0.23	0.23	0.23
NOPAT=EBIT(1-Tax)	1,921	2,293	2,737	3,267	3,900	4,655
Less:Reinvestment Rate	0.65	0.52	0.40	0.27	0.15	0.15
Free Cash Flow to Firm	677.42	1,094	1,646	2,371	3,315	3,956
Mid Year Convention		0.50	1.50	2.50	3.50	4.50
Discounting Factor		0.96	0.88	0.81	0.74	0.68
PV of FCFF		1,048	1,450	1,919	2,466	2,704
Expected Growth	0.19					
Terminal Growth	5.0%					
WACC	8.8%					
— Terminal Value —						
FCFF(n+1)	4,722					
WACC	8.8%					
Terminal Growth rate	5.0%					
Terminal Value	123,532					
— Equity Value —						
Sum of PV of FCFF	9,587					
PV of Terminal Value	84,438					
Enterprise Value(Value of operating Assets)	94,026					
Add: Cash	1,218					
Less: Debt	0					
Value of Equity	95,244					
No. of Shares	15.78					
Equity Value per Share	6,037					
Current Market Share Price	5019					
Discount/Premium	0.83					
Potential Upside/Downside	0.20					
Over/Undervalued	**Undervalued**					

Figure E.1.7: Persistent Systems — FCFF DCF Financial Model (FY2025–FY2030)

Source: Own Financial Model | Persistent_Systems__1_.xlsx | FCFF Sheet

E.1.8 JBM Auto — FCFF DCF Model

JBM Auto — FCFF DCF Financial Model (FY2025-FY2030)

Source: Own Financial Model | All values ₹ Crore unless noted

Line Item (₹ Crore unless noted)	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030
EBIT	609.23	743.54	907.45	1,107	1,352	1,650
Tax Rate	0.23	0.23	0.23	0.23	0.23	0.23
NOPAT=EBIT(1-Tax)	467.45	570.50	696.26	849.76	1,037	1,266
Less:Reinvestment Rate	2.12	1.70	1.29	0.87	0.45	0.45
Free Cash Flow to Firm	-524.97	-402.08	-199.50	111.94	570.40	696.14
Mid Year Convention		0.50	1.50	2.50	3.50	4.50
Discounting Factor		0.95	0.86	0.78	0.70	0.63
PV of FCFF		-382.17	-171.30	86.83	399.70	440.68
Expected Growth	0.22					
Terminal Growth	5.0%					
WACC	0.11					
— Terminal Value —						
FCFF(n+1)	849.61					
WACC	0.11					
Terminal Growth rate	5.0%					
Terminal Value	14,919					
— Equity Value —						
Sum of PV of FCFF	373.75					
PV of Terminal Value	9,444					
Enterprise Value(Value of operating Assets)	9,818					
Add: Cash	129.50					
Less: Debt	3007					
Value of Equity	6,941					
No. of Shares	23.64					
Equity Value per Share	293.59					
Current Market Share Price	642.55					
Discount/Premium	2.19					
Potential Upside/Downside	-0.54					
Over/Undervalued	**Overvalued**					

Figure E.1.8: JBM Auto — FCFF DCF Financial Model (FY2025–FY2030)

Source: Own Financial Model | JBM_Auto.xlsx | FCFF Sheet

E.1.9 Titan Company — FCFF DCF Model

Titan Company — FCFF DCF Financial Model (FY2025-FY2030)

Source: Own Financial Model | All values ₹ Crore unless noted

Line Item (₹ Crore unless noted)	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030
EBIT	7981	9,271	10,769	12,510	14,532	16,881
Tax Rate	0.25	0.25	0.25	0.25	0.25	0.25
NOPAT=EBIT(1-Tax)	5,953	6,915	8,033	9,331	10,840	12,592
Less:Reinvestment Rate	0.91	0.88	0.85	0.83	0.80	0.80
Free Cash Flow to Firm	558.70	832.52	1,180	1,619	2,168	2,518
Mid Year Convention		0.50	1.50	2.50	3.50	4.50
Discounting Factor		0.96	0.87	0.80	0.73	0.66
PV of FCFF		795.52	1,030	1,290	1,577	1,673
Expected Growth	0.16					
Terminal Growth	5.0%					
WACC	9.5%					
— Terminal Value —						
FCFF(n+1)	2,925					
WACC	9.5%					
Terminal Growth rate	5.0%					
Terminal Value	64,745					
— Equity Value —						
Sum of PV of FCFF	6,365					
PV of Terminal Value	43,005					
Enterprise Value(Value of operating Assets)	49,370					
Add: Cash	1917					
Less: Debt	11378					
Value of Equity	39,909					
No. of Shares	88.79					
Equity Value per Share	449.47					
Current Market Share Price	4,083					
Discount/Premium	9.08					
Potential Upside/Downside	-0.89					
Over/Undervalued	**Overvalued**					

Figure E.1.9: Titan Company — FCFF DCF Financial Model (FY2025–FY2030)

Source: Own Financial Model | Titan_Company.xlsx | FCFF Sheet

E.2 Excess Return Model — J&K Bank

The Excess Return Model (Ohlson, 1995) was the right tool for J&K Bank — the FCFF methodology does not work for banks where operating and financing activities cannot be cleanly separated. The model values equity as current book value per share plus the present value of future excess returns above the cost of equity, using BVPS = ₹149.84, EPS = ₹21.43, Ke = 11.68%, and a stable growth rate of 7.5%.

E.2.1 J&K Bank — Excess Return Model (Ohlson Model)

J&K BANK — EXCESS RETURN MODEL (OHLSON RESIDUAL INCOME MODEL)		
Input Parameters		
Book Value Per Share (BVPS) — FY2024	₹ 149.84	*From FY2024 Annual Report*
Earnings Per Share (EPS) — FY2024	₹ 21.43	*From FY2024 P&L Statement*
Dividends Per Share (DPS) — FY2024	₹ 1.50	*Declared dividend FY2024*
Risk-Free Rate (Rf)	7.12%	*10-Yr G-Sec, April 2026 (RBI)*
Equity Risk Premium (ERP)	7.43%	*Damodaran, India, Jan 2025*
Beta (β) — Comparable Company Approach	0.49	*Unlevered & relevered peer beta*
Cost of Equity (Ke = Rf + β × ERP)	11.68%	*= 7.12% + 0.49 × 7.43%*
Stable Growth Rate (g)	7.50%	*Recovery phase; below Ke*
Excess Return Computation		
Normal Earnings = Ke × BVPS	₹ 17.50	*= 11.68% × 149.84*
Actual EPS	₹ 21.43	
Excess Earnings = EPS − (Ke × BVPS)	**₹ 3.93**	*= 21.43 − 17.50*
Valuation — Gordon Growth in Perpetuity		
V_0 = BVPS + Excess Earnings / (Ke − g)		
PV of Excess Returns = 3.93 / (11.68% − 7.50%)	**₹ 93.90**	*= 3.93 / 4.18%*
Intrinsic Value per Share = 149.84 + 93.90	**₹ 243.72**	*← Equity Fair Value*
Valuation Summary		
Current Market Price (CMP)	₹ 140.20	*As of May 2026, NSE*
Intrinsic Value (Excess Return Model)	₹ 243.72	
Upside/(Downside)	**+73.8%**	*= (243.72 / 140.20) − 1*
P/BV at CMP	**0.94×**	*= 140.20 / 149.84 (below book)*
P/BV at Intrinsic Value	**1.63×**	*= 243.72 / 149.84*
RECOMMENDATION	**BUY**	← Deep value; below book value

Sensitivity: Intrinsic Value at Varying Ke and g						
g →	**6.50%**	**7.00%**	**7.50%**	**8.00%**	**8.50%**	
Ke = 10.68% (−100 bps)	152	170	197	241	341	*Bull Case*
Ke = 11.18% (−50 bps)	142	157	179	214	281	
Ke = 11.68% (Base Case) ←	132	146	244*	175	215	*Base Case*
Ke = 12.18% (+50 bps)	124	136	150	168	197	
Ke = 12.68% (+100 bps)	116	127	139	153	174	*Bear Case*

*Note: *Base case = ₹243.72 at Ke=11.68%, g=7.50% | All sensitivity values in ₹ per share*

Source: Own Financial Model | J___K_Bank.xlsx | Ohlson (1995) Residual Income Framework

Figure E.2.1: J&K Bank — Excess Return Model Worksheet (Ohlson Residual Income Model)

Source: Own Financial Model | J___K_Bank.xlsx | Excess Return Model> Sheet

E.3 Comparable Company Analysis (Relative Valuation) — All 10 Companies

The comparable company analysis worksheet shows the peer group for each stock, listing each peer's current share price, shares outstanding, equity value, net debt, enterprise value, revenue, EBITDA, and net income — followed by the EV/Revenue, EV/EBITDA, and P/E multiples (or P/BV and P/E for J&K Bank). The peer group statistics (High, 75th Percentile, Average, Median, 25th Percentile, Low) are shown below the peer list, followed by the implied enterprise value and equity value per share derived from the median multiple applied to the subject company's financials.

E.3.1 BSE Ltd. — Comparable Company Analysis

BSE Ltd. — Comparable Company (Relative) Valuation

Source: Own Financial Model | EV/Revenue, EV/EBITDA, P/E multiples

	Market Data					Financials			Valuation		
Company	Share Price	Share O/S	Equity Value	Net Debt	Enterprise Value	Revenue	EBITDA	Net Income	EV/Revenue	EV/EBITDA	P/E
BSE	4,187	40.73	170,532	2.0%	165,360	4,834	3,480	2,487	34.21	47.51	68.56
ICICI AMC	3,200	49.43	158,161	0	158,014	5,765	4,554	3,298	27.41	34.70	47.95
Billionbrair	188.37	627.36	118,176	292.23	110,129	4,645	2,926	2083	23.71	37.64	56.73
HDFC AMC	2,728	42.85	116,891	0	116,866	4,119	3,789	2,859	28.38	30.84	40.88
Multi Comr	3,323	25.50	84,731	4.76	82,199	2302	1,773	1,332	35.71	46.37	63.63
Motil.Oswa	843.20	60.20	50,761	21,255	58,532	9,374	3,937	1,872	6.24	14.87	27.11
C D S L	1,200	20.90	25,076	2.20	24,995	1,145	675.50	455.07	21.83	37.00	55.10
Cams Serv	769.10	24.80	19,074	64.23	18,729	1,516	727.80	472.02	12.35	25.73	40.41
N S D L	812.40	20	16248	16.59	15,757	1,530	566.09	380.01	10.30	27.83	42.76
Indian Ene	127.05	89.17	11,329	11.16	11,236	608.39	650.98	473.71	18.47	17.26	23.92
High									35.71	47.51	68.56
75th Perc									28.13	37.48	56.33
Average									21.86	31.98	46.71
Median									22.77	32.77	45.35
25th Perc									13.88	26.26	40.53
Low									6.24	14.87	23.92
BSE Compa									EV/Revenue	EV/EBITDA	P/E
Implied En									110,075	114,055	112,809
Net Debt									2.0%	2.0%	2.0%
Implied Ma									110,075	114,055	112,809
Shares Out									40.73	40.73	40.73
Implied Va									2,703	2,800	2,770
CMP									4,187		
Over/Und									Overvalued	Overvalued	Overvalued
Average i										2,758	
Potential U										0.52	

Figure E.3.1: BSE Ltd. — Comparable Company Valuation (EV/Revenue, EV/EBITDA, P/E)

Source: Own Financial Model | BSE_fcff.xlsx | COMP_VAL Sheet | Peers: ICICI AMC, HDFC AMC, MCX, CDSL, CAMS, NSDL, IEX

E.3.2 CDSL — Comparable Company Analysis

CDSL — Comparable Company (Relative) Valuation

Source: Own Financial Model | EV/Revenue, EV/EBITDA, P/E multiples

	Market Data					Financials			Valuation		
Company	Share Price	Share O/S	Equity Value	Net Debt	Enterprise Value	Revenue	EBITDA	Net Income	EV/Revenue	EV/EBITDA	P/E
C D S L	1,200	20.90	25,076	2.20	24,995	1,145	675.50	455.07	21.83	37.00	55.10
Cams Serv	769.10	24.80	19,074	64.23	18,729	1,516	727.80	472.02	12.35	25.73	40.41
N S D L	812.40	20	16248	16.59	15,757	1,530	566.09	380.01	10.30	27.83	42.76
KFin Techn	831.50	17.26	14,352	55.44	14,195	1,301	572.66	343.71	10.91	24.79	41.76
Beacon Tru	97	1.81	175.57	0	173.42	34.16	12.64	6.88	5.08	13.72	25.52
High									21.83	37.00	55.10
75th Perc									12.35	27.83	42.76
Average									12.09	25.82	41.11
Median									10.91	25.73	41.76
25th Perc									10.30	24.79	40.41
Low									5.08	13.72	25.52
CDSL Com									EV/Revenue	EV/EBITDA	P/E
Implied En									12,487	17,383	19,004
Net Debt									2.20	2.20	2.20
Implied Ma									12,485	17,381	19,002
Shares Out									20.90	20.90	20.90
Implied Va									597.37	831.62	909.17
CMP									1,200		
Over/Und									Overvalued	Overvalued	Overvalued
Average i										779.39	
Potential U										-0.35	

Figure E.3.2: CDSL — Comparable Company Valuation (EV/Revenue, EV/EBITDA, P/E)

Source: Own Financial Model | C_D_S_L.xlsx | comp_val Sheet | Peers: CAMS, NSDL, KFin Technologies, Beacon Trusteeship

E.3.3 Hindustan Zinc — Comparable Company Analysis

Hindustan Zinc — Comparable Company (Relative) Valuation

Source: Own Financial Model | EV/Revenue, EV/EBITDA, P/E multiples

	Market Data					Financials			Valuation		
Company	Ticker Share Price	Share O/S	Equity Value	Net Debt	Enterprise Value	Revenue	EBITDA	Net Income	EV/Revenue	EV/EBITDA	P/E
Vedanta	745.15	391.04	291,383	77225	368,608	120395	36,118	20704	3.06	10.21	14.07
Adani Ente	2,087	129.16	269,531	102,502	372,034	94,995	16,149	14,132	3.92	23.04	19.07
Tata Steel	206.61	1,248	257,922	83,996	341,918	225,088	33,763	9,122	1.52	10.13	28.28
Hindustan	564.60	422.53	238,560	10994	249,554	36211	19,916	11691	6.89	12.53	20.41
Hindalco Ir	992.10	224.72	222,945	64032	286,977	261701	36,638	16078	1.10	7.83	13.87
Jindal Stee	1,219	102.01	124,371	14,976	139,347	50,190	9,034	2,016	2.78	15.42	61.69
Lloyds Met	1,506	56.28	84,769	7,424	92,193	12,286	4,054	2,500	7.50	22.74	33.90
Natl. Alumi	417	183.66	76,586	-5,371	71,215	18,098	8,868	6,142	3.93	8.03	12.47
NMDC	85.07	879.18	74,792	-6,449	68,343	27,732	10,261	6,900	2.46	6.66	10.84
Hindustan	530.05	96.70	51,256	74.32	51,330	2,653	1,088	667.15	19.35	47.19	76.83
High									19.35	47.19	76.83
75th Perc									6.15	20.91	32.50
Average									5.25	16.38	29.14
Median									3.49	11.37	19.74
25th Perc									2.54	8.55	13.92
Low									1.10	6.66	10.84
Hindutan Z									EV/Revenue	EV/EBITDA	P/E
Implied En									126,340	226,404	241,759
Net Debt									10994	10994	10994
Implied Ma									115,346	215,410	230,765
Shares Out									422.53	422.53	422.53
Implied Va									272.99	509.81	546.15
CMP									564.60		
Over/Und									Overvalued	Overvalued	Overvalued
Average i										442.98	
Potential U										-0.22	

Figure E.3.3: Hindustan Zinc — Comparable Company Valuation (EV/Revenue, EV/EBITDA, P/E)

Source: Own Financial Model | comparable_valuation_hind_zinc.xlsx | Comps_Val Sheet | Peers: Vedanta, Tata Steel, Hindalco, NMDC

E.3.4 MTAR Technologies — Comparable Company Analysis

MTAR Technologies — Comparable Company (Relative) Valuation

Source: Own Financial Model | EV/Revenue, EV/EBITDA, P/E multiples

	Market Data					Financials			Valuation		
Company	Share Price	Share Out	Equity Value	Net Debt	Enterprise Value	Revenue	EBITDA	Net Income	EV/Revenue	EV/EBITDA	P/E
Bharat Ele	420.40	730.98	307,304	65.46	298,797	27,610	8,559	6,062	10.82	34.91	50.69
Hind.Aeron	4,370	66.88	292,292	10.97	246,107	33,089	13,566	9,116	7.44	18.14	32.07
Bharat Dyr	1,304	36.66	47,797	1.24	43,608	3,739	859.87	579.92	11.66	50.71	82.42
Garden Re	2,691	11.46	30,834	37.39	27,484	7,002	1,050	747.93	3.93	26.17	41.23
MTAR Tech	7,948	3.08	24,478	376.57	24,834	876.11	192.74	95.32	28.35	128.84	256.80
Data Patte	3,934	5.60	22,033	5.27	21,945	924.77	397.65	271.37	23.73	55.19	81.19
Zen Techn	1,604	9.03	14,482	18.51	14,146	687.69	330.09	217.92	20.57	42.86	66.46
Aequs	214.75	67.07	14,403	785.05	15,109	924.61	120.20	-102.35	16.34	125.70	-140.73
Apollo Micr	358.60	35.73	12,813	543.26	13,200	904.32	226.08	107.38	14.60	58.39	119.32
Astra Micr	1,184	9.49	11,241	277.79	11,421	1,082	324.73	160.47	10.55	35.17	70.05
High									28.35	128.84	256.80
75th Perc									19.51	57.59	82.11
Average									14.80	57.61	65.95
Median									13.13	46.78	68.25
25th Perc									10.62	34.97	43.59
Low									3.93	18.14	-140.73
MTAR Com									EV/Revenue	EV/EBITDA	P/E
Implied En									11,504	9,018	6,882
Net Debt									376.57	376.57	376.57
Implied Ma									11,127	8,641	6,506
Shares Out									3.08	3.08	3.08
Implied Va									3,613	2,806	2,112
CMP									7,948		
Over/Und									**Overvalued**	**Overvalued**	**Overvalued**
Average i										2,844	
Potential U										-0.64	

Figure E.3.4: MTAR Technologies — Comparable Company Valuation (EV/Revenue, EV/EBITDA, P/E)

Source: Own Financial Model | MTAR_Technologie_comp.xlsx | Comp valuation Sheet | Peers: BEL, HAL, BDL, Garden Reach, Data Patterns

E.3.5 J&K Bank — Comparable Company Analysis

J&K Bank — Comparable Company (Relative) Valuation

Source: Own Financial Model | EV/Revenue, EV/EBITDA, P/E multiples

	Market Data					Financials			Valuation		
Company	Ticker Share Price	Share Out	Equity Value	EPS		Book Value	Revenue	Net Income	P/BV		P/E
HDFC Bar	759.05	1,540	1,168,656	51.45		377.77	348,615	79,219	2.01		14.75
ICICI Bank	1,243	716.97	891,122	80.81		503.31	195,218	57,936	2.47		15.38
SBI	951.05	923.06	877,876	93.89		645.82	514,933	86,666	1.47		10.13
Kotak Mal	380.30	994.65	378,265	19.39		182.09	69,781	19,288	2.09		19.61
Bank of B	263.05	517.14	136,034	38.81		320.74	134,298	20,070	0.82		6.78
Punjab Na	101.85	1,149	117,055	16.07		130.49	130,772	18,467	0.78		6.34
Canara Ba	128	907.07	116,105	19.71		129.76	126,371	17,879	0.99		6.49
Indian Ba	818.50	134.70	110,252	86.91		594.25	67,504	11,707	1.38		9.42
IDFC First	68.31	860.83	58,803	1.90		54.71	40,549	1,636	1.25		35.94
J & K Bank	140.20	110.12	15,439	21.43		149.84	13,151	2,360	0.94		6.54
High									2.47		35.94
75th Per									2.01		15.38
Average									1.47		13.87
Median									1.38		10.13
25th Per									0.99		6.78
Low									0.78		6.34
J&K Bank									P/BV		P/E
Implied Va									206.38		217.04
Average										211.71	
CMP(21-0										140.20	
Under/ove									**Undervalued**		**Undervalued**
Potential										0.51	

Figure E.3.5: J&K Bank — Comparable Company Valuation (P/BV and P/E)

Source: Own Financial Model | J___K_Bank.xlsx | comp_val Sheet | Peers: HDFC Bank, ICICI Bank, SBI, Kotak, BoB, PNB, Canara, Indian Bank

E.3.6 NTPC Ltd. — Comparable Company Analysis

NTPC Ltd. — Comparable Company (Relative) Valuation

Source: Own Financial Model | EV/Revenue, EV/EBITDA, P/E multiples

	Market Data					Financials			Valuation		
Company	Share Price	Share Out	Equity Value	Net Debt	Enterprise Value	Revenue	EBITDA	Net Income	EV/Revenue	EV/EBITDA	P/E
NTPC	388.80	969.67	377,008	254,876	620,427	187,531	67,511	24,828	3.31	9.19	15.18
Adani Gree	1,358	164.72	223,723	103545	324,502	12928	11,635	1987	25.10	27.89	112.59
JSW Energy	548.45	175.73	96,379	76,946	167,560	18,901	10,963	2,762	8.87	15.28	34.89
NTPC Gree	105.38	842.63	88,796	21,826	107,105	2,568	2,542	557.39	41.71	42.13	159.31
NHPC Ltd	79	1,004	79,356	52,327	128,031	11,615	7,318	4,220	11.02	17.50	18.80
NLC India	350.50	138.66	48,600	27,892	75,650	17,490	7,520	3,769	4.33	10.06	12.89
SJVN	73.47	392.98	28,872	32,278	57,779	4,528	3,487	641.85	12.76	16.57	44.98
Nava	608.25	28.30	17,213	2,226	17,325	4,291	1,888	1,039	4.04	9.18	16.58
ACME Sola	282.65	60.60	17,129	19,896	30,867	2,023	2,266	497.89	15.26	13.62	34.40
Clean Max	1,172	11.71	13,725	12,684	24,122	1,913	1,301	85.57	12.61	18.54	160.40
High									41.71	42.13	160.40
75th Perc									14.63	18.28	95.69
Average									13.90	18.00	61.00
Median									11.82	15.93	34.65
25th Perc									5.46	10.95	17.13
Low									3.31	9.18	12.89
NTPC Com									EV/Revenue	EV/EBITDA	P/E
Implied En									2,215,939	1,075,299	1,115,063
Net Debt									254,876	254,876	254,876
Implied Ma									1,961,063	820,423	860,187
Shares Out									969.67	969.67	969.67
Implied Va									2,022	846.08	887.09
CMP									388.80		
Over/Und									**Undervalued**	**Undervalued**	**Undervalued**
Average i										1,252	
Potential U										2.22	

Figure E.3.6: NTPC Ltd. — Comparable Company Valuation (EV/Revenue, EV/EBITDA, P/E)

Source: Own Financial Model | NTPC__1_.xlsx | comp_val Sheet | Peers: Adani Green, JSW Energy, NHPC, NLC, SJVN, ACME Solar

E.3.7 Cipla Ltd. — Comparable Company Analysis

Cipla Ltd. — Comparable Company (Relative) Valuation

Source: Own Financial Model | EV/Revenue, EV/EBITDA, P/E multiples

		Market Data					Financials			Valuation		
Company	Ticker	Share Price	Share Os	Equity Value	Net Debt	Enterprise Value	Revenue	EBITDA	Net Income	EV/Revenue	EV/EBITDA	P/E
Sun Pharm		1,891	239.93	453,780	5,215	447,663	56,809	19,883	10,953	7.88	22.51	41.43
Divi's Lab.		6858	26.55	182,080	90	178,455	10314	3,816	2479	17.30	46.76	73.45
Torrent Pha		4,469	33.84	151,238	2822	153,480	12742	4,077	2272	12.05	37.64	66.57
Cipla		1,402	80.78	113,245	613.77	112,552	28,163	6,759	3,862	4.00	16.65	29.32
Dr Reddy's		1,318	83.47	110,055	7,734	114,441	33,700	7,751	4,158	3.40	14.76	26.47
Lupin		2,284	45.72	104,447	6,616	105,411	27,958	9,226	5,355	3.77	11.43	19.50
Zydus Life:		1,036	100.62	104,288	12496	115,367	27,148	8,959	5,124	4.25	12.88	20.35
Mankind Ph		2,514	41.29	103,807	6,312	109,636	14,278	3,998	1,938	7.68	27.42	53.56
Aurobindo		1,547	58.08	89,832	8,073	88,035	33,653	7,404	3,503	2.62	11.89	25.64
Laurus Lab		1351	53.99	72,940	2,518	75,345	6,813	1,839	890.14	11.06	40.96	81.94
High										17.30	46.76	81.94
75th Perc										10.26	35.09	63.31
Average										7.40	24.29	43.82
Median										5.96	19.58	35.38
25th Perc										3.83	13.35	25.85
Low										2.62	11.43	19.50
Cipla Comp										EV/Revenue	EV/EBITDA	P/E
Implied En										167,967	132,364	137,232
Net Debt										613.77	613.77	613.77
Implied Ma										167,353	131,751	136,619
Shares Out										80.78	80.78	80.78
Implied Va										2,072	1,631	1,691
CMP										1,402		
Under/over										**Undervalued**	**Undervalued**	**Undervalued**
Average i											1,798	
Potential U											0.28	

Figure E.3.7: Cipla Ltd. — Comparable Company Valuation (EV/Revenue, EV/EBITDA, P/E)

Source: Own Financial Model | Cipla__1_.xlsx | comp_val Sheet | Peers: Sun Pharma, Divi's, Torrent, Dr Reddy's, Lupin, Zydus

E.3.8 Persistent Systems — Comparable Company Analysis

Persistent Systems — Comparable Company (Relative) Valuation

Source: Own Financial Model | EV/Revenue, EV/EBITDA, P/E multiples

		Market Data					Financials			Valuation		
Company	Ticker	Share Price	Share Os	Equity Value	Net Debt	Enterprise Value	Revenue	EBITDA	Net Income	EV/Revenue	EV/EBITDA	P/E
TCS		2,327	361.81	842,004	11283	840,379	267021	77,436	49454	3.15	10.85	17.03
Infosys		1,181	405.57	479,059	9176	466,034	178650	46449	29474	2.61	10.03	16.25
HCL Techn		1,168	271.37	317,014	5215	298,804	130144	28,632	16652	2.30	10.44	19.04
Wipro		199.74	1,050	209,667	20291	219,403	92624	21,304	13,266	2.37	10.30	15.81
Tech Mahir		1420	97.98	139,132	2,186	136,212	56,815	9,090	4,806	2.40	14.98	28.95
LTM		4,130	29.66	122,487	2310	121,985	42,308	8,462	4,983	2.88	14.42	24.58
Persistent		5019	15.78	79,200	477.45	78,459	14,748	2,950	1,865	5.32	26.60	42.46
Coforge		1377	43	59211	727.80	58,840	16,403	2,952	1,745	3.59	19.93	33.94
Mphasis		2,228	19.09	42,525	2,620	43,392	15,880	3,335	1,863	2.73	13.01	22.83
Hexaware		502.90	61.10	30,727	680.70	29,425	13,836	2,352	1,393	2.13	12.51	22.06
High										5.32	26.60	42.46
75th Perc										3.08	14.84	27.86
Average										2.95	14.31	24.30
Median										2.67	12.76	22.45
25th Perc										2.38	10.54	17.53
Low										2.13	10.03	15.81
Persystent										EV/Revenue	EV/EBITDA	P/E
Implied En										39,387	37,642	42,342
Net Debt										477.45	477.45	477.45
Implied Ma										38,910	37,165	41,865
Shares Out										15.78	15.78	15.78
Implied Va										2,466	2,355	2,653
CMP										5019		
Over/unde										**Overvalued**	**Overvalued**	**Overvalued**
Average i											2,491	
Potential U											-0.50	

Figure E.3.8: Persistent Systems — Comparable Company Valuation (EV/Revenue, EV/EBITDA, P/E)

Source: Own Financial Model | Persistent_Systems__1_.xlsx | comp_val Sheet | Peers: TCS, Infosys, HCL Tech, Wipro, LTIMindtree, Coforge

E.3.9 JBM Auto — Comparable Company Analysis

JBM Auto — Comparable Company (Relative) Valuation

Source: Own Financial Model | EV/Revenue, EV/EBITDA, P/E multiples

		Market Data					Financials			Valuation		
Company	Ticker	Share Price	Share Os	Equity Value	Net Debt	Enterprise Value	Revenue	EBITDA	Net Income	EV/Revenue	EV/EBITDA	P/E
Samvardh.		137	1,055	144,595	19,170	155,531	126,104	12,610	4,086	1.23	12.33	35.39
Bosch		35210	2.95	103,870	118.80	103,586	20,035	3,406	2,773	5.17	30.41	37.45
Bharat For		1,899	47.81	90,782	7,309	97,100	16,812	3,194	1,089	5.78	30.40	83.33
Uno Minda		1,079	57.75	62,318	2,740	64,700	19,658	2,555	1,284	3.29	25.32	48.53
Sona BLW		584.30	62.20	36,343	363.41	36,486	4,124	1,196	646.42	8.85	30.51	56.22
Motherson		39.90	663.17	26,460	233.17	26,624	11,478	1,033	625.18	2.32	25.77	42.32
Asahi India		852.70	25.49	21,735	2,856	24,427	4,816	866.83	303.99	5.07	28.18	71.50
CIE Autom		462.80	37.94	17,559	425.88	17,730	9,746	1,559	871.15	1.82	11.37	20.16
Gabriel Ind		1,106	14.36	15,888	29.13	15,880	4,053	405.31	236.01	3.92	39.18	67.32
JBM Auto		642.55	23.65	15,196	3,029	18,096	6,088	791.49	238.07	2.97	22.86	63.83
High										8.85	39.18	83.33
75th Perc										5.15	30.41	66.45
Average										4.04	25.63	52.61
Median										3.60	26.98	52.38
25th Perc										2.48	23.48	38.67
Low										1.23	11.37	20.16
JBM Auto C										EV/Revenue	EV/EBITDA	P/E
Implied En										21,946	21,352	15,498
Net Debt										3,029	3,029	3,029
Implied Ma										18,918	18,323	12,469
Shares Out										23.65	23.65	23.65
Implied Va										799.89	774.77	527.25
CMP										642.55		
Under/Un										**Undervalued**	**Undervalued**	**Overvalued**
Average i											700.64	
Potential U											9.0%	

Figure E.3.9: JBM Auto — Comparable Company Valuation (EV/Revenue, EV/EBITDA, P/E)

Source: Own Financial Model | JBM_Auto.xlsx | comp_val Sheet | Peers: Samvardhana, Bosch, Bharat Forge, Uno Minda, Sona BLW

E.3.10 Titan Company — Comparable Company Analysis

Titan Company — Comparable Company (Relative) Valuation

Source: Own Financial Model | EV/Revenue, EV/EBITDA, P/E multiples

		Market Data						Financials			Valuation		
	Company	Share Price	Share O/S	Equity Value	Net Debt	Enterprise Value		Revenue	EBITDA	Net Income	EV/Revenue	EV/EBITDA	P/E
	Titan Comp	4,083	88.78	362,498	14551	375,132		87584	8,758	5073	4.28	42.83	71.46
	Kalyan Jew	353	103.27	36,454	6,117	41,711		35,743	2,859	1,350	1.17	14.59	27.00
	Thangama	3,862	3.11	12,010	913.21	12,542		8,514	595.96	351.65	1.47	21.05	34.15
	PC Jeweller	8.29	971.05	8,050	1,594	9,581		3,125	843.63	656.35	3.07	11.36	12.26
	Sky Gold &	465.35	15.49	7,208	813.72	7,847		5,442	380.91	229.29	1.44	20.60	31.44
	P N Gadgil	524.95	13.57	7,124	1,737	8,356		10,739	751.74	409.82	0.78	11.12	17.38
	Bluestone	461.35	15.24	7,031	1,699	8,218		2,436	438.56	13.18	3.37	18.74	533.46
	Ethos	2,355	2.68	6,312	322.32	5,973		1,612	241.84	96.14	3.70	24.70	65.65
	Senco Gol	345.70	16.38	5,663	2,408	7,486		7,773	932.78	485.09	0.96	8.03	11.67
	Goldiam In	383.35	11.29	4,328	24.19	4,170		940.82	225.80	156.54	4.43	18.47	27.65
	High										4.43	42.83	533.46
	75th Perc										3.62	20.93	57.78
	Average										2.47	19.15	83.21
	Median										2.27	18.60	29.54
	25th Perc										1.24	12.16	19.79
	Low										0.78	8.03	11.67
	Titan Comp										EV/Revenue	EV/EBITDA	P/E
	Implied En										198,791	162,943	164,421
	Net Debt										14551	14551	14551
	Implied Ma										184,240	148,392	149,870
	Shares Out										88.78	88.78	88.78
	Implied Va										2,075	1,671	1,688
	CMP										4,083		
	Over/Und										**Overvalued**	**Overvalued**	**Overvalued**
	Average I											1,812	
	Potential U											-0.56	

Figure E.3.10: Titan Company — Comparable Company Valuation (EV/Revenue, EV/EBITDA, P/E)

Source: Own Financial Model | Titan_Company.xlsx | comp_val Sheet | Peers: Kalyan Jewellers, Thangamayil, PC Jeweller, Senco Gold, Ethos

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