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CHAPTER 4

HYPOTHESIS

4.5.2 HYPOTHESIS 1:

Null Hypothesis (H_0): Net Profit Margin and Return on Equity (ROE) have no significant relationship.

Alternative Hypothesis (H_1): Net Profit Margin and Return on Equity (ROE) have a significant relationship.

4.2. HYPOTHESIS 2:

Null Hypothesis (H_0): Net Profit Margin and Annualized Return have no significant linear relationship.

Alternative Hypothesis (H_1): Net Profit Margin and Annualized Return have a significant linear relationship.

CHAPTER 5

SELECTION OF LARGE CAP STOCKS THROUGH FUNDAMENTAL ANALYSIS

5.1. Introduction:

Companies with a market capitalization of over ₹50,000 crores are referred to as large-cap stocks, and they are renowned for their reliability, sound financial standing, and consistent returns. Out of the top 100 equities on the NSE, 15 large-cap stocks were selected for this study based on primary screening. The research methodology has referenced the key screening parameters and criteria. The secondary screening algorithm was used to choose the final five stocks.

Source: https://www.sptulsian.com/f/p/What-is-meant-by-Small-Mid-and-Large-Cap-Stocks

5.2. 15 Large Cap stocks selected through primary screening:

Source: https://indiamacroindicators.co.in/key-economic-indicators/nifty-50-pe-ratio?utm_source=chatgpt.com

https://www.investopedia.com/investing/roa-and-roe-give-clear-picture-corporate-health/?utm_source=chatgpt.com https://www.screener.in/user/1157660/

5.3. Selection of Final 5 Large-Cap Stocks:

Based on weighted sum product >0.45, (the average of weighted sum product has been taken), ROE>20%, D/E <1, PE<20 & growth composite >0.2, the following 5 stocks are selected:

CHAPTER 6

SELECTION OF MID-CAP STOCKS THROUGH FUNDAMENTAL ANALYSIS

6.1. Introduction:

Companies with a market value between 10,000 crores and ₹50,000 crores are known as mid-cap stocks. These businesses offer a balance between the tremendous growth potential of small-cap stocks and the stability of large-cap equities. Because they are frequently in their growth stage, mid-cap firms appeal to investors looking for greater returns at a reasonable level of risk.

Source: https://www.sptulsian.com/f/p/What-is-meant-by-Small-Mid-and-Large-Cap-Stocks

6.2. 15 mid-cap stocks selected through primary screening:

Source: https://indiamacroindicators.co.in/key-economic-indicators/nifty-50-pe-ratio?utm_source=chatgpt.com

https://www.investopedia.com/investing/roa-and-roe-give-clear-picture-corporate-health/?utm_source=chatgpt.com

https://www.screener.in/user/1157660/

6.3. Selection of Final 5 Mid-Cap Stocks:

Based on weighted sum product >0.45, ROE>20%, D/E <1, PE<20 & growth composite >0.2, the following 5 stocks are selected:

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CHAPTER 7

SELECTION OF SMALL-CAP STOCKS THROUGH FUNDAMENTAL ANALYSIS

7.1. Introduction:

Companies with a market value of less than ₹10,000 crores are known as small-cap stocks. These businesses have a lot of room to grow and are frequently just getting started. Even though small-cap companies have the potential to see significant capital growth, they are typically riskier and more volatile than their mid-cap and large-cap counterparts.

Source: https://www.sptulsian.com/f/p/What-is-meant-by-Small-Mid-and-Large-Cap-Stocks

7.2.15 Small-cap stocks selected through primary screening:

7.3.Selection of Final 5 Small-Cap Stocks:

Based on weighted sum product >0.45, ROE>20%, D/E <1, PE<20 & growth composite >0.2, the following 5 stocks are selected:

CHAPTER 8

PORTFOLIO CONSTRUCTION LARGE CAP STOCKS

8.1. Stocks Annualized return and risk:

	Coal India	Bharat Petroleum	SBI Bank	Life insurance	Indian Oil
Annualized Return	25.5%	16.48%	37.80%	9.1%	21.6%
Annualized Risk	31.19%	29.00%	32.69%	30.50%	28.53%
Correlation with Market	0.429	0.623	0.630	-0.094	0.592
Beta	0.958	1.292	1.473	-0.187	1.207

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8.2. Correlation Matrix:

Stocks	Coal India	Bharat Petroleum	SBI Bank	Life insurance	Indian Oil
Coal India	1.00	0.420	0.489	-0.210	0.486
Bharat Petroleum	0.420	1.00	0.536	-0.193	0.801
SBI Bank	0.489	0.536	1.00	-0.034	0.479
Life insurance	-0.210	-0.193	-0.034	1.00	-0.096
Indian Oil	0.486	0.801	0.479	-0.096	1.00

8.3. Covariance Matrix:

| Stocks	Coal India	Bharat Petroleum	SBI Bank	Life insurance	Indian Oil
Coal India	0.0973	0.0379	0.0499	-0.0200	0.0432
Bharat Petroleum	0.0379	0.0841	0.0508	-0.0171	0.0663
SBI Bank	0.0499	0.0508	0.1069	-0.0034	0.0447
Life insurance	-0.0200	-0.0171	-0.0034	0.0931	-0.0083
Indian Oil	0.0432	0.0663	0.0447	-0.0083	0.0814

8.4. Portfolio Construction:

o **Portfolio 1:** Maximize Annualized Return for large cap stocks

o **Portfolio 2:** Maximize Sharpe Ratio for large cap stocks

o **Portfolio 3:** Minimize Annualized Risk for large cap stocks

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Portfolio 1: Maximize Annualized Return	Coal India	Bharat Petroleum	SBI Bank	Life insurance	Indian Oil
Weight	0.300	0.050	0.300	0.050	0.300
Portfolio Return			29.76 %		
Portfolio Risk			23.36 %		
Portfolio beta			1.147		
Sharpe Ratio			0.868		

Portfolio 2: Maximize Sharpe Ratio	Coal India	Bharat Petroleum	SBI Bank	Life insurance	Indian Oil
Weight	0.297	0.050	0.300	0.217	0.136
Portfolio Return			24.65 %		
Portfolio Risk			20.00 %		
Portfolio Beta			0.914		
Sharpe Ratio			0.909		

Portfolio 3: Minimize Annualized Risk	Coal India	Bharat Petroleum	SBI Bank	Life insurance	Indian Oil
Weight	0.266	0.278	0.069	0.300	0.088
Portfolio Return			18.58 %		
Portfolio Risk			17.72 %		
Portfolio Beta			0.764		
Sharpe Ratio			0.683		

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8.6.1. ROE analysis using Dupont:

Dupont Analysis	Coal India	Bharat Petroleum	SBI Bank	Life Insurance	Indian Oil
Revenue	150,719.89	451,383	594,575	860,795	781,741
Net Income	37,402.29	26,859	67,085	40,916	41,730
Net profit	**24.82%**	**5.95%**	**11.28%**	**4.75%**	**5.34%**
ATO	**0.66**	**2.31**	**0.07**	**0.17**	**1.69**
Total assets (last year)	221,395.85	188,138.19	5,965,539	4,578,491	441,995
Total assets (latest year)	236,469.56	202,417.75	6,746,909	5,316,047	482,683
Average total assets	228,932.71	195,278	6,356,224	4,947,269	462,339
Shareholder's equity (last year)	61,613.62	53,522.36	371,767.94	46,350	143,214
Shareholder's equity (latest year)	83,581.90	75,635.11	430,557.13	82,900	188,163
Avg shareholder's equity	72,597.76	64,578.74	401,162.54	64,625	165,688.7
Equity multiplier	**3.15**	**3.02**	**15.84**	**76.55**	**2.79**
ROE	**51.6%**	**41.6%**	**12.5%**	**61.9%**	**25.2%**
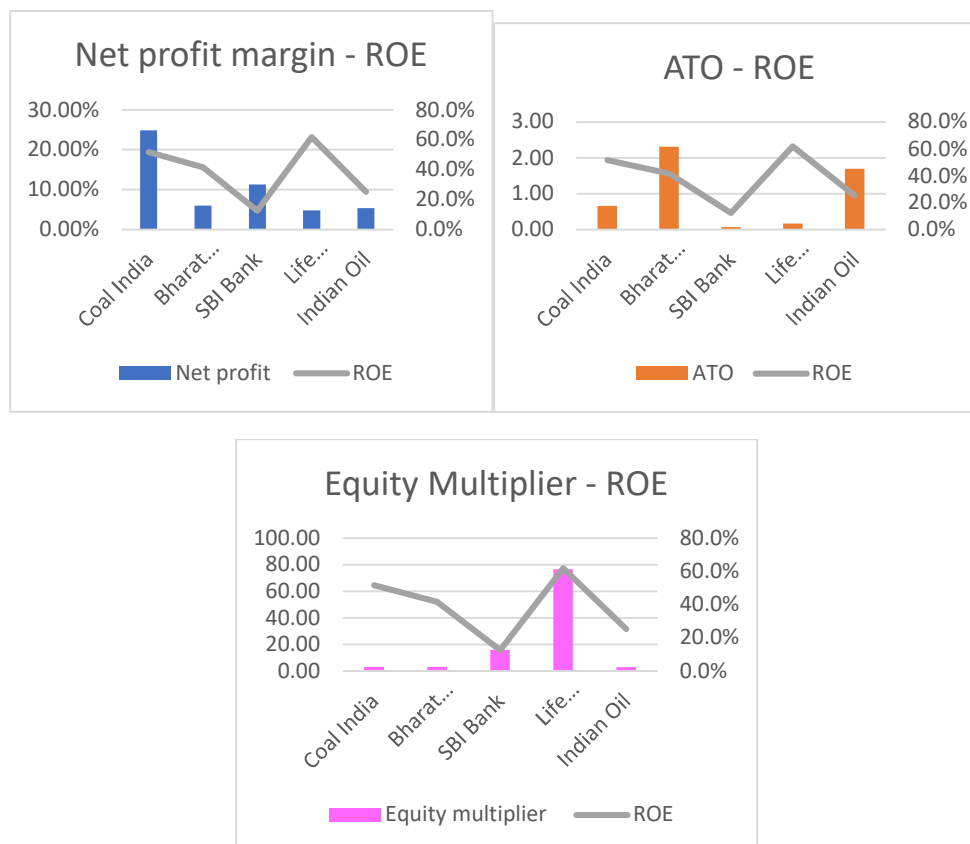
8.6.2. Intrinsic Value Calculation:

By Benjamin Graham Formula:

Stock	EPS (last 12 months) (₹)	5-Year EPS Growth %	Recommended g	Intrinsic Value (₹)	Current Price (₹)	Remarks
Coal India	55.88	16.54%	10%	331.08	393	Overvalued
Bharat Petroleum	32.15	28.20%	12%	191.36	295	Overvalued
SBI Bank	88.9	98.70%	20%	538.82	799	Overvalued
Life Insurance	68.08	73.17%	20%	412.63	789	Overvalued
Indian Oil	7.71	19.10%	10%	45.68	134.5	Overvalued

Source: https://en.wikipedia.org/wiki/Benjamin_Graham_formula

https://en.wikipedia.org/wiki/Sustainable_growth_rate#From_a_financial_perspective

By Discounted Cash Flow Method:

Stock	FCF,2024	Terminal value, crores	Total intrinsic value, crores	share outstanding, crores	intrinsic value per share, Rs	Current price	Remarks
Coal India	16927	267724	220050	616.1	357	393	Overvalued
Bharat Petroleum	14103	223060	183339	427.3	429	295	Undervalued
SBI Bank	19376	306463	251890	352.7	714	799	Overvalued
Life Insurance	41452	655622	538874	632	853	789	Undervalued
Indian Oil	38699	612084	503088	1373	366	134.5	Undervalued

Source: https://www.fe.training/free-resources/valuation/discounted-cash-flow-dcf-valuation. https://www.tickertape.in/stocks https://www.screener.in/ https://companiesmarketcap.com/

The intrinsic value of the portfolio stocks was determined using both the Benjamin Graham Formula and the Discounted Cash Flow (DCF) Method; however, the DCF method was found to be more dependable. Compared to EPS-based approaches, the DCF method provides a more accurate evaluation of a company's potential for future earnings by incorporating estimates of terminal value and Free Cash Flow projections. As a result, this research gave priority to DCF-based values when making investment decisions.

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CHAPTER 9

PORTFOLIO CONSTRUCTION OF MID CAP STOCKS

9.1.Stocks Annualized return and risk:

	UNO Minda Ltd	Jindal Stainless Ltd	Indraprastha Gas Ltd	Mangalore Refinery and Petrochemicals Ltd	Godawari Power and Ispat Ltd
Annualized Return	42.9%	77.01%	-0.5%	45.7%	89.4%
Annualized Risk	35.34%	54.46%	32.83%	56.32%	62.14%
Correlation with Market	0.391	0.246	0.364	0.192	0.330
Beta	0.988	0.958	0.855	0.773	1.464

9.2.Correlation Matrix:

	UNO Minda Ltd	Jindal Stainless Ltd	Indraprastha Gas Ltd	Mangalore Refinery and Petrochemicals Ltd	Godawari Power and Ispat Ltd
UNO Minda Ltd	1.00	0.136	0.322	0.017	0.207
Jindal Stainless Ltd	0.136	1.00	0.041	0.025	0.599
Indraprastha Gas Ltd	0.322	0.041	1.00	0.105	0.104
Mangalore Refinery	0.017	0.025	0.105	1.00	0.158
Godawari Power	0.207	0.599	0.104	0.158	1.00

9.3.Covariance Matrix:

	UNO Minda Ltd	Jindal Stainless Ltd	Indraprastha Gas Ltd	Mangalore Refinery and Petrochemicals Ltd	Godawari Power and Ispat Ltd
UNO Minda Ltd	0.124	0.026	0.037	0.003	0.045
Jindal Stainless Ltd	0.021	0.296	0.007	0.007	0.202

Indraprastha Gas Ltd	0.037	0.007	0.107	0.019	0.021
Mangalore Refinery	0.003	0.007	0.019	0.317	0.055
Godawari Power	0.045	0.202	0.021	0.055	0.386

9.4. Portfolio Construction:

- o **Portfolio 4:** Maximize Annualized Return for mid cap stocks
- o **Portfolio 5:** Maximize Sharpe Ratio for mid cap stocks
- o **Portfolio 6:** Minimize Annualized Risk for mid cap stocks

Portfolio 4: Maximize Annualized Return	UNO Minda Ltd	Jindal Stainless	Indraprastha Gas Ltd	Mangalore Refinery	Godawari Power
Weight	0.050	0.300	0.050	0.300	0.300
Portfolio Return			65.76 %		
Portfolio Risk			32.72 %		
Portfolio Beta			1.051		
Sharpe Ratio			1.572		

| Portfolio 5: Maximize Sharpe Ratio	UNO Minda Ltd	Jindal Stainless	Indraprastha Gas Ltd	Mangalore Refinery	Godawari Power
Weight	0.300	0.281	0.050	0.186	0.183
Portfolio Return			59.37 %		
Portfolio Risk			31.00 %		
Portfolio Beta			1.020		
Sharpe Ratio			1.706		

| Portfolio 6: Minimize Annualized Risk	UNO Minda Ltd	Jindal Stainless	Indraprastha Gas Ltd	Mangalore Refinery	Godawari Power
Weight	0.300	0.163	0.300	0.187	0.050
Portfolio Return			38.30 %		
Portfolio Risk			24.54 %		

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Portfolio Beta	0.927
Sharpe Ratio	1.297

9.6. More Fundamentals of final 5 stocks:

9.6.1. ROE analysis using Dupont:

Dupont Analysis	UNO Minda	Jindal Stainless	Indraprastha Gas Ltd	Mangalore Refinery	Godawari Power
Revenue	14,279.69	38,884	14,602	90,659	5,584
Net Income	880.31	2,713	1,985	3,597	935
Net profit	**6.16%**	**6.98%**	**13.59%**	**3.97%**	**16.75%**
ATO	**1.57**	**1.34**	**1.09**	**2.57**	**1.04**
Total assets (last year)	8,267.11	27,115.48	12,628	35,214	5,159
Total assets (latest year)	9,883.61	30,764.85	14,225	35,437	5,545
Average total assets	9,075.36	28,940	13,426	35,325	5,352
Shareholder's equity (last year)	4,434.23	11,967.57	7,931.24	9,865	3,947
Shareholder's equity (latest year)	5,264.98	14,374.53	9,649.83	13,283	4,554
Avg shareholder's equity	4,849.61	13,171.05	8,790.54	11,574	4,250.2
Equity multiplier	**1.87**	**2.20**	**1.53**	**3.05**	**1.26**
ROE	**18.1%**	**20.5%**	**22.6%**	**31.1%**	**21.9%**

Equity Multiplier - ROE
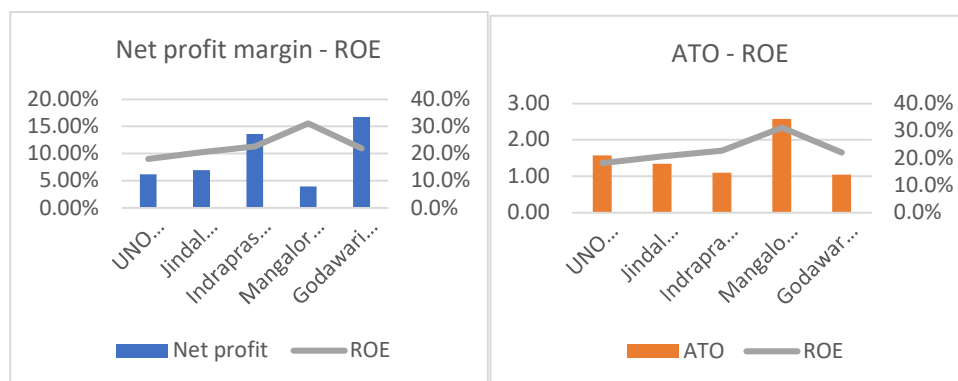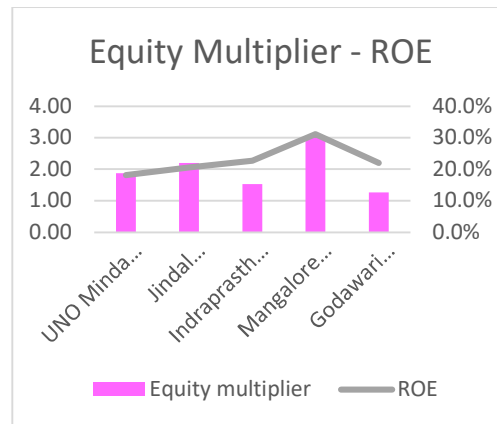
9.6.2. Intrinsic Value calculation:

By Benjamin Graham Formula:

Stock	EPS (last 12 months) (₹)	5-Year EPS Growth %	Recommended g	Intrinsic Value (₹)	Current Price (₹)	Remarks
UNO Minda Ltd	16.82	23.40%	12%	100.11	894	Overvalued
Jindal Stainless	29.33	60.60%	20%	177.77	556	Overvalued
Indraprastha Gas	12.12	18.40%	10%	71.81	178.4	Overvalued
Mangalore Ref	4.7	60.00%	20%	28.49	136.4	Overvalued
Godawari Power	12	30.50%	15%	71.91	196	Overvalued

Source: https://en.wikipedia.org/wiki/Benjamin_Graham_formula

https://en.wikipedia.org/wiki/Sustainable_growth_rate#From_a_financial_perspective

By Discounted Cash Flow Method:

Stock	FCF,2024	Terminal value, crores	Total intrinsic value, crores	share outstanding, crores	intrinsic value per share, Rs	Current price	Remarks
Coal India	242.7	3839	3155	57.4	55	894	Overvalued
Bharat Petro	1394.7	22060	18132	82.3	220	556	Overvalued
SBI Bank	606.56	9594	7885	70	113	178.4	Overvalued
Life Insurance	5011.9	79270	65154	175	372	136.4	Undervalued
Indian Oil	629.58	9958	8185	61.3	134	196	Overvalued

CHAPTER 10

PORTFOLIO CONSTRUCTION OF SMALL CAP STOCKS

10.1. Stock Annualized return and risk:

	Raymond Ltd	Elecon Engineering	Maharashtra Seamless Ltd	Ganesh Housing	Bengal & Assam Co
Annualized Return	49.7%	97.03%	48.5%	100.3%	45.0%

Annualized Risk	45.85%	58.75%	43.37%	63.95%	37.38%
Correlation with Market	0.235	0.430	0.240	0.151	0.169
Beta	0.770	1.805	0.745	0.691	0.453

10.2.   Correlation Matrix:

	Raymond Ltd	Elecon Engineering	Maharashtra Seamless Ltd	Ganesh Housing	Bengal & Assam Co
Raymond Ltd	1.00	0.340	0.051	0.253	0.044
Elecon Engineering	0.340	1.00	0.348	0.362	0.220
Maharashtra Seamless	0.051	0.348	1.00	0.181	0.147
Ganesh Housing	0.253	0.362	0.181	1.00	0.246
Bengal & Assam	0.044	0.220	0.147	0.246	1.00

10.3.   Covariance Matrix:

	Raymond Ltd	Elecon Engineering	Maharashtra Seamless	Ganesh Housing	Bengal & Assam Co
Raymond Ltd	0.2102	0.0915	0.0101	0.0741	0.0076
Elecon Engineering	0.0915	0.3451	0.0887	0.1362	0.0484
Maharashtra Seamless	0.0101	0.0887	0.1881	0.0501	0.0238
Ganesh Housing	0.0741	0.1362	0.0501	0.4089	0.0589
Bengal& Assam	0.0076	0.0484	0.0238	0.0589	0.1397

10.4.   Portfolio Construction:

o   **Portfolio 7:** Maximize Annualized Return for small cap stocks

o   **Portfolio 8:** Maximize Sharpe Ratio for small cap stocks

o   **Portfolio 9:** Minimize Annualized Risk for small cap stocks

Portfolio 7: Maximize Annualized Return	Raymond Ltd	Elecon Engineering	Maharashtra Seamless	Ganesh Housing	Bengal & Assam Co
Weight	0.300	0.300	0.050	0.300	0.050

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Portfolio Return	78.76 %
Portfolio Risk	38.72 %
Portfolio Beta	1.04
Sharpe Ratio	1.867

Portfolio 8: Maximize Sharpe Ratio	Raymond Ltd	Elecon Engineering	Maharashtra Seamless	Ganesh Housing	Bengal & Assam Co
Weight	0.143	0.231	0.162	0.219	0.245
Portfolio Return	70.35 %				
Portfolio Risk	32.40 %				
Portfolio Beta	0.910				
Sharpe Ratio	1.972				

Portfolio 9: Minimize Annualized Risk	Raymond Ltd	Elecon Engineering	Maharashtra Seamless	Ganesh Housing	Bengal & Assam Co
Weight	0.300	0.050	0.300	0.050	0.300
Portfolio Return	52.82 %				
Portfolio Risk	26.61 %				
Portfolio Beta	0.715				
Sharpe Ratio	1.742				

10.6. More Fundamentals of final 5 stocks

10.6.1. ROE analysis using Dupont:

Dupont Analysis	Raymond Ltd	Elecon Engineering Company Ltd	Maharashtra Seamless Ltd	Ganesh Housing Corp Ltd	Bengal & Assam Company Ltd
Revenue	10,278.87	1,988	5,546	899	15,891
Net Income	1,637.74	356	951	461	3,892
Net profit	**15.93%**	**17.89%**	**17.15%**	**51.25%**	**24.49%**
ATO	**0.97**	**1.03**	**0.91**	**0.56**	**1.15**

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Total assets (last year)	8,206.97	1,729.88	5,859	1,419	17,226
Total assets (latest year)	13,001.36	2,123.08	6,588	1,769	10,437
Average total assets	10,604.17	1,926	6,223	1,594	13,832
Shareholder's equity (last year)	2,983.98	1,279.11	4,773.96	1,193	7,490
Shareholder's equity (latest year)	5,055.26	1,604.03	5,730.70	1,568	9,241
Avg shareholder's equity	4,019.62	1,441.57	5,252.33	1,381	8,365.5
Equity multiplier	**2.64**	**1.34**	**1.18**	**1.15**	**1.65**
ROE	**40.8%**	**24.6%**	**18.5%**	**33.1%**	**46.6%**

Net profit margin - ROE

ATO - ROE

Equity Multiplier - ROE
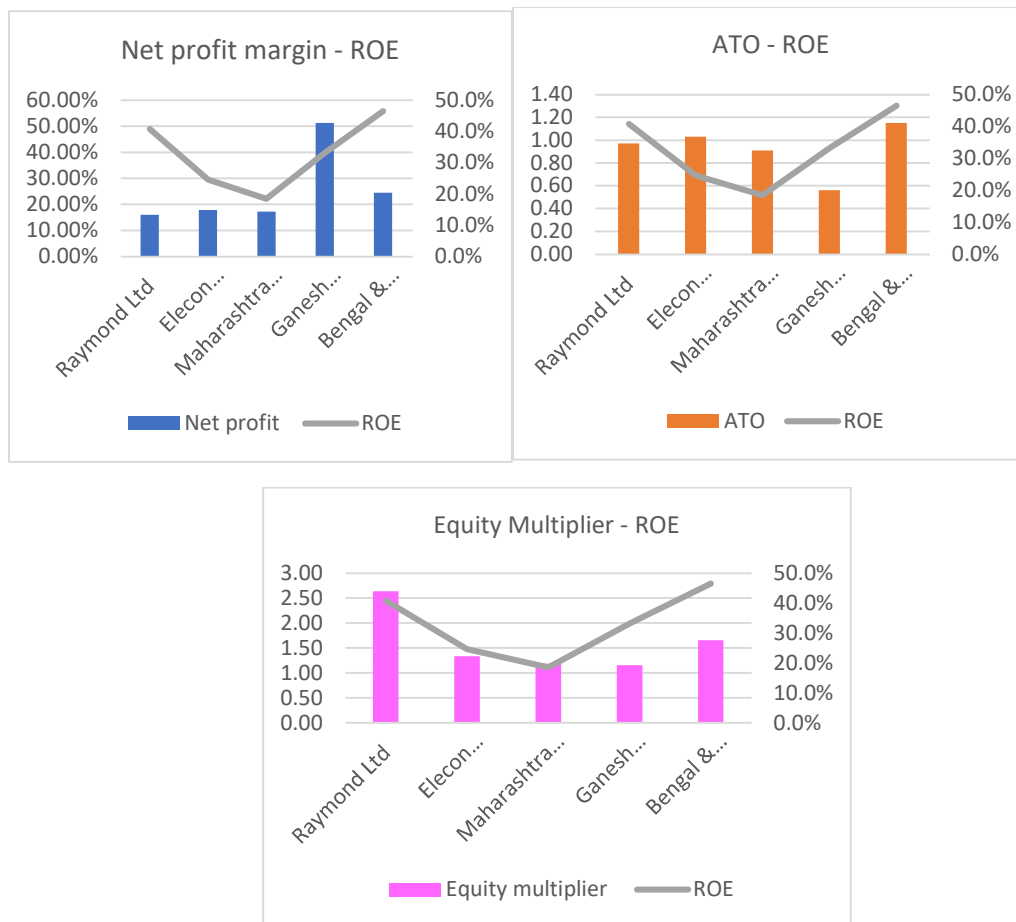
10.6.2.   Intrinsic value calculation:

Stock	EPS (last 12 months) (₹)	5-Year EPS Growth %	Recommended g	Intrinsic Value (₹)	Current Price (₹)	Remarks
Raymond Ltd	1160	55.20%	20%	7030.74	1501	Undervalued
Elecon Engg	18.5	35.70%	15%	110.87	518	Overvalued
Maha.seamless	56.3	26.30%	12%	335.10	672	Overvalued
Ganesh Housing	65.5	59.30%	20%	396.99	1080	Overvalued

| Bengal & Assam | 726 | 26.80% | 12% | 4321.17 | 7483 | Overvalued |

By Benjamin Graham Formula:

Source: https://en.wikipedia.org/wiki/Benjamin_Graham_formula

https://en.wikipedia.org/wiki/Sustainable_growth_rate#From_a_financial_perspective

By Discounted Cash Flow Method:

Stock	FCF,2024	Terminal value, crores	Total intrinsic value, crores	share outstanding, crores	intrinsic value per share, Rs	Current price	Remarks
Raymond Ltd	543.52	8597	7066	6.65	1063	1501	Overvalued
Elecon Engg	249.9	3953	3249	22.4	145	518	Overvalued
Maha. Seamless	951.16	15044	12365	13.4	923	672	Undervalued
Ganesh Housing	184.23	2914	2395	8.33	288	1080	Overvalued
Bengal & Assam	1047.7	16571	13620	1.13	12053	7483	Undervalued

Source: https://www.fe.training/free-resources/valuation/discounted-cash-flow-dcf-valuation. https://www.tickertape.in/stocks https://www.screener.in/ https://companiesmarketcap.com/

CHAPTER 11

SUMMARY OF PORTFOLIO & KEY FINDNGS

11.1. Efficient Frontier:

The portfolio risk or standard deviation is arranged in ascending order to create the efficient frontier line. To be on the efficient frontier, a portfolio must offer **highest return for a given risk** or **lowest risk for a given return**.

	Annualized Risk	Annualized Return	Sharpe Ratio
Portfolio 3 (PF3)	17.72%	18.58%	0.683
Portfolio 2 (PF2)	20.00%	24.65%	0.909
Portfolio 1 (PF1)	23.36%	29.76%	0.868
Portfolio 6 (PF6)	24.54%	38.30%	1.297
Portfolio 9 (PF9)	26.61%	52.82%	1.742
Portfolio 5 (PF5)	31.00%	59.37%	1.706
Portfolio 8 (PF8)	32.40%	70.35%	1.972
Portfolio 4 (PF4)	32.72%	65.76%	1.572
Portfolio 7 (PF7)	38.72%	78.76%	1.867

Five-Asset Portfolio
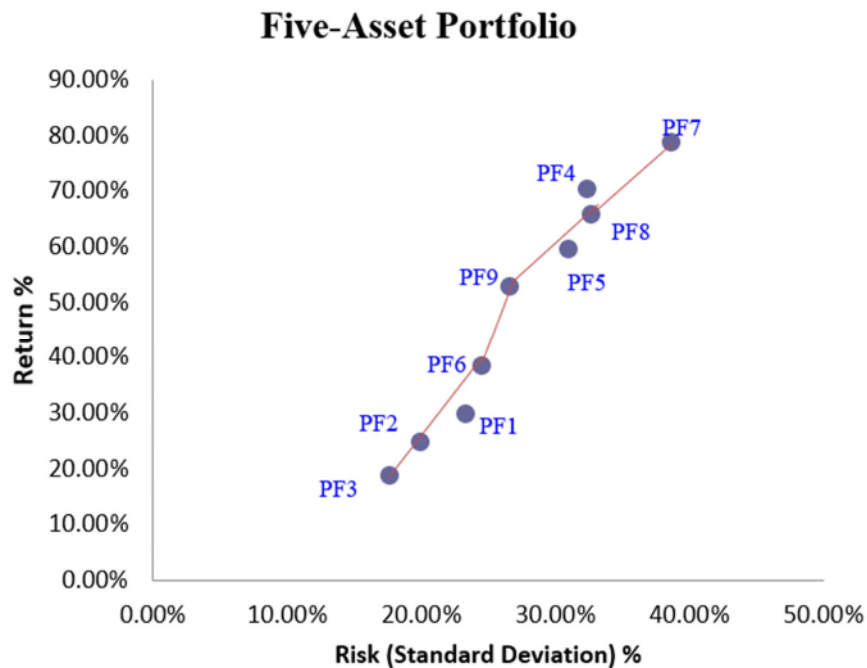
The x-axis shows risk measured by standard deviation (%).

The y-axis shows expected return (%).

Each point labeled PF1 to PF9 represents a specific portfolio configuration.

The red line connects portfolios that lie on the efficient frontier—portfolios offering optimal return for a given level of risk.

11.2.   Interpretation:

The basic investment principle—greater risk → higher potential returns is demonstrated by the fact that the expected return rises as risk does along the frontier. A clear positive correlation between risk and return was found when the risk-return profiles of different portfolios were analyzed; greater risk portfolios typically have higher predicted returns. Because they provide the best return for every level of risk without being dominated by any other portfolio, the PF3, PF6, PF9, PF8, and PF7 portfolios were determined to be efficient and to form the efficient frontier. Because they provided lower returns for comparable or higher levels of risk, other portfolios, such   as   PF4,   were   deemed   inefficient. To maximize returns while controlling risk exposure, investors use the efficient frontier as a crucial guide when choosing portfolios based on their risk tolerance.

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Investor Type	Preferred Portfolio(s)	Reason
Conservative Investor	PF3	Low risk (17.72%) with moderate return (18.58%). Prioritizes safety over high returns.
Moderate Risk Investor	PF6 or PF9	Balanced risk and strong returns (PF6: 24.54% risk, 38.30% return; PF9: 26.61% risk, 52.82% return). Good for growth with acceptable risk.
Aggressive Investor	PF8 or PF7	Willing to take high risk (PF8: 32.40% risk, 70.35% return; PF7: 38.72% risk, 78.76% return) for maximum returns.

CHAPTER 12

HYPOTHESIS TESTING

13.1.   Hypothesis 1 result:

A Pearson correlation analysis was conducted. As for the result, the correlation coefficient is 0.073, and the p-value is 0.795. ROE and Net Profit Margin have a statistically negligible ($p > 0.05$) and extremely weak ($r = 0.073$) association. This suggests that differences in ROE across the chosen companies cannot be adequately explained by net profit margin alone. The null hypothesis will be accepted as a result. Additionally, the alternative hypothesis will be disproved. Across these companies, there is no compelling evidence of a meaningful correlation between ROE and net profit margin.

13.2.   Hypothesis 2 result:

A Pearson correlation analysis was conducted. About the result, the correlation coefficient is 0.755, and the p-value is 0.14. Among the companies with accessible data, the correlation coefficient of 0.755 indicates a strong positive association between Net Profit Margin and Annualized Return. At the 5% significance level, the association is not statistically significant, though, because the p-value of 0.14 is higher than 0.05. This suggests that while businesses with larger profit margins typically have higher annualized returns in this sample, the small sample size and lack of statistical significance prevent us from proving the association with certainty.

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CHAPTER 13

TECHNICAL ANALYSIS OF STOCKS (As on 26.04.2025)

13.1. Coal India:

https://www.screener.in/company/COALINDIA/consolidated

50 DMA is below 200 DMA line – It indicates Death Cross, Bearish – Sell Signal

200 DMA > Price > 50 DMA – long term trend is bearish.

COALINDIA.IN | SharpCharts | StockCharts.com

MACD line intersects Signal line, Histogram green bar is negative – A bullish cross over is forming, indicating a potential upward momentum.

RSI is 57.86, it indicates a moderate uptrend, meaning the stock is gaining strength.

Source: Kite Zerodha

As for Bollinger Band, the middle band or 20 day moving average is lower than the price, indicating a bullish trend in the long term.

- It is not a strong signal.
- It is not a buy signal either because the long-term trend is still bearish.

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- Wait & watch. Risk averse investors may consider it a "No trade" or "hold" zone.

13.2.   Bharat Petroleum:

	200 DMA < Price > 50 DMA – long term trend is bullish.
	MACD line is above the Signal line, Histogram green bar is positive – A bullish cross over is forming, indicating a potential upward momentum.
	RSI is 68.5, near overbought territory, but not yet an exit signal.
	As per Bollinger Band, the middle band or 20 day moving average is above the price, indicating a bullish trend in the long term.

- If already invested, the investor needs to hold its position.
- Watch RSI closely, above 70 might signal some profit booking.
- Set a trailing stop loss just below 50 DMA to protect profits.
- If an investor is planning to enter, he should wait for a minor pullback, till RSI to cool to 55 to 60 range.

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13.3.   SBI Bank:

200 DMA < Price > 50 DMA – long term trend is bullish
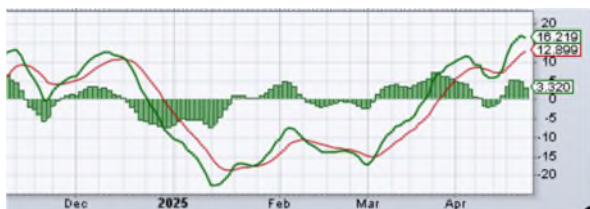
MACD line is above the Signal line, Histogram green bar is positive – A bullish cross over is forming, indicating a potential upward momentum.


RSI is 55.21, It's not overbought (overbought usually starts above 70), so there's room for the price to rise further before any serious concern.

As per Bollinger Band, the middle band or 20 day moving average is above the price, indicating a bullish trend in the long term.

- Long-term trend is bullish.
- Momentum indicators (MACD and RSI) are supportive of further upside.
- Short-term, the price might be in a pullback phase, but it's not signaling a reversal yet.

20

13.4. Life Insurance:
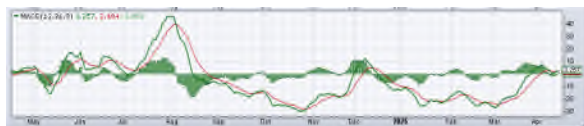
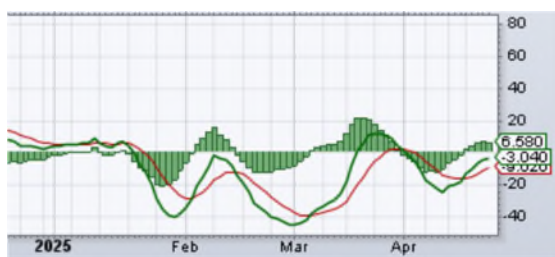|	
	200 DMA > Price > 50 DMA – long term trend is bearish or downtrend.
	MACD line is above the Signal line, Histogram green bar is positive – A bullish cross over is forming, indicating a upward momentum.
	RSI is 56.41, Stock is gaining strength.
	As per Bollinger Band, the middle band or 20 day moving average is lower than the price, indicating a bearish trend in the long term. .
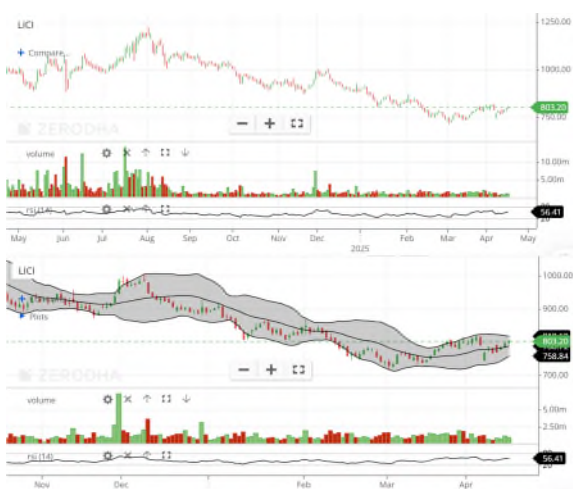
- Not an ideal buy for long-term investors yet, unless the price breaks above 200 DMA with confirmation.

13.5. Indian oil:

	200 DMA > Price > 50 DMA – long term trend is bearish or downtrend. The price being above the 50 DMA suggests some short-term recovery, but unless it breaks the 200 DMA, the broader trend remains bearish.
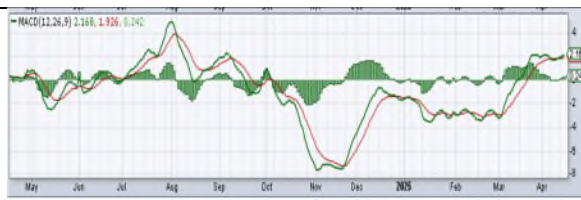
21

MACD line is above the Signal line, Histogram green bar is positive – A bullish cross over is forming, indicating an upward momentum.

RSI is 62.82, Moderate uptrend, stock gaining strength.

As per Bollinger Band, the price is above the middle band or 20 day moving average, indicating a bullish trend in the long term.

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- Hold / Buy
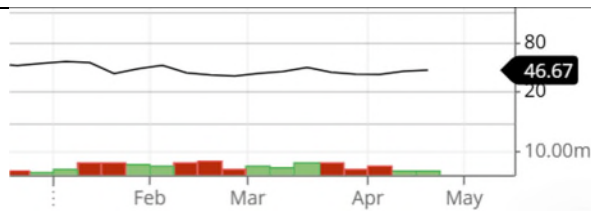- Long-term investors should wait for a confirmed breakout above 200 DMA and RSI > 55–60.

13.6. UNO Minda:
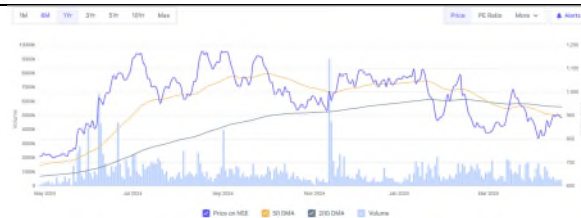
200 DMA > 50 DMA > Price– long term trend is bearish or downtrend.

MACD line is above the Signal line, Histogram green bar is positive – A bullish cross over is forming, indicating an upward momentum.

22

RSI is 46.67, No strong trend.

As for Bollinger Band, the price is below the middle band or 20 day moving average, indicating a bearish trend in the long term.

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- Hold
- Long-term investors should wait for a confirmed breakout above 200 DMA and RSI > 55–60.

13.7. Jindal Stainless ltd:

200 DMA > 50 DMA > Price– long term trend is bearish or downtrend.

MACD line is above the Signal line, Histogram green bar is positive – A bullish cross over is forming, indicating an upward momentum.
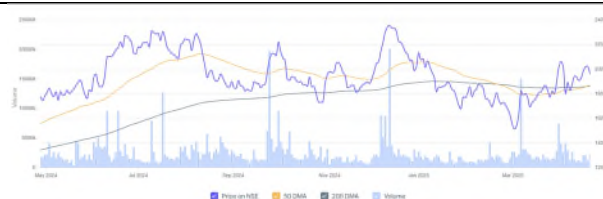
RSI is 39.58, No strong trend.

23

As for Bollinger Band, the price is below the middle band or 20 day moving average, indicating a bearish trend in the long term.

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- Hold
- Long-term investors should wait for a confirmed breakout above 200 DMA and RSI > 55–60.

13.8.   Indraprastha Gas Ltd:

200 DMA > 50 DMA > Price– long term trend is bearish or downtrend.

MACD line is below the Signal line, Histogram green bar is negative – A bearish cross over is forming, indicating an downward momentum.

RSI is 41.17, No strong trend.

As for Bollinger Band, the price is below the middle band or 20 day moving average, indicating a bearish trend in the long term.

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- Hold

24

- Long-term investors should wait for a confirmed breakout above 200 DMA and RSI > 55–60.

13.9. Mangalore Refinery:

200 DMA > Price> 50 DMA– long term trend is bearish or downtrend.

MACD line is intersecting the Signal line, Histogram green bar is negative – A bearish cross over is forming, but upward trend will form.

RSI is 55.11, good for continuation of an uptrend.

As for Bollinger Band, the price is below the middle band or 20 day moving average, indicating a bearish trend in the long term.
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- Hold
- Long-term investors should wait for a confirmed breakout above 200 DMA

13.10. Godawari Power & Ispat Ltd:

Price > 200 DMA > 50 DMA– long term trend is bullish or uptrend. 50 DMA will cross 200 DMA soon.

25

MACD line is above the Signal line, Histogram green bar is positive – A bullish cross over is forming.

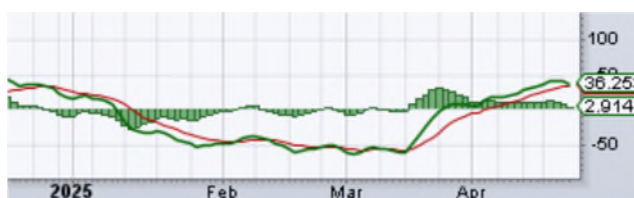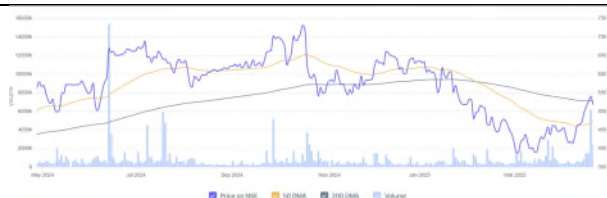RSI is 52.93, good for continuation of an uptrend.

As for Bollinger Band, the price is above the middle band or 20 day moving average, indicating a bullish trend in the long term.

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- A strong buy signal
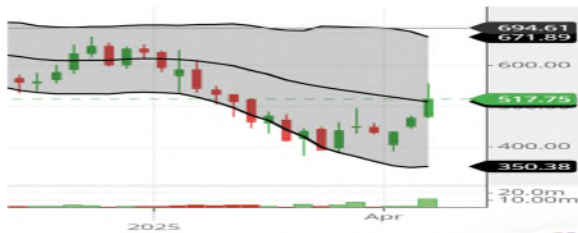- Bullish in long term.

13.11. Raymond Ltd:

200 DMA > price > 50 DMA– long term trend is bearish. 50 DMA will cross 200 DMA soon. Price will cut the 200 DMA line, will show a bullish cross over.

MACD line is above the Signal line, Histogram green bar is positive – A bullish cross over is forming.
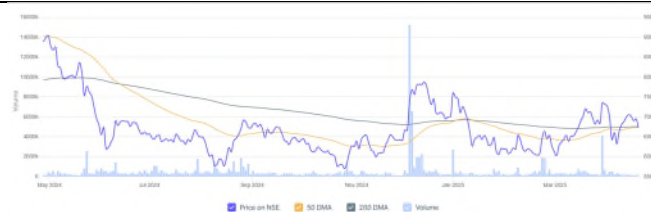
26

RSI is 47.06, good for continuation of an uptrend.

As for Bollinger Band, the price is at the middle band or 20 day moving average line, indicating a bullish trend in the long term.

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- Hold till the price cut the 200 DMA line.

13.12.   Elecon Engineering:

200 DMA > price > 50 DMA– long term trend is bearish. 50 DMA will cross 200 DMA soon. Price will cut the 200 DMA line, will show a bullish cross over.

MACD line is above the Signal line, Histogram green bar is positive – A bullish cross over is forming.

RSI is 50.78, good for continuation of an uptrend.

27

As for Bollinger Band, the price is at the middle band or 20 day moving average line, indicating a bullish trend in the long term.

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- Hold till the price cut the 200 DMA line & MACD crosses the signal line.

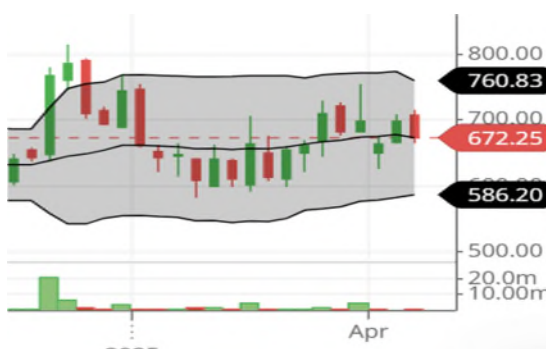### 13.13. Maharashtra Seamless Ltd:

Price >200 DMA >50 DMA– long term trend is bullish.

MACD line intersects the Signal line, Histogram green bar is negative – A bearish cross over is forming.

RSI is 50.11, good for continuation of an uptrend.

As for Bollinger Band, the price is at the middle band or 20 day moving average line, indicating a bearish trend in the long term. As the volume is not increasing.

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- Long-term investors should wait for a confirmed breakout above 200 DMA and RSI > 55–60.

28

13.14.   Ganesh Housing:

Price > 50 DMA > 200 DMA– long term trend is bullish.

MACD line is above the Signal line, Histogram green bar is positive – A bullish cross over is forming.

RSI is 48.25, good for continuation of an uptrend.

As for Bollinger Band, the price is below the middle band or 20 day moving average line, indicating a bearish trend in the long term.
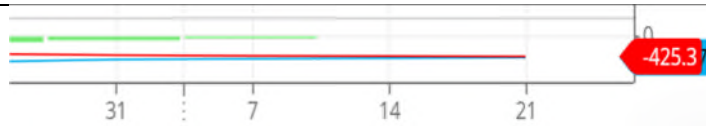
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- Long-term investors should wait for RSI > 55–60 and price crosses the mid line.

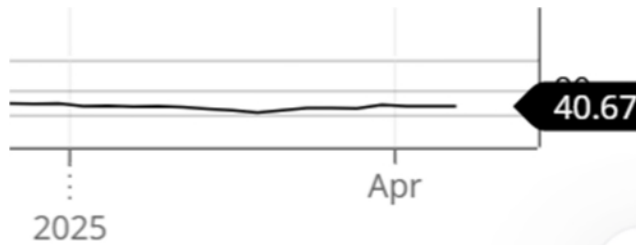### 13.15.   Bengal & Assam Company Ltd:

200 DMA > 50 DMA > Price– long term trend is bearish.

29

MACD line is below the Signal line,– A bearish cross over is forming.

RSI is 40.67, good for continuation of an uptrend.

As for Bollinger Band, the price is below the middle band or 20 day moving average line, indicating a bearish trend in the long term.

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- Hold

CHAPTER 14

EXTENDED ANALYSIS & COMPARATIVE INSIGHTS

14.1.   Alignment with Fama-French Three-Factor Model

According to the report's empirical findings, small-cap portfolios (such PF7, which had a return of 78.76%) consistently beat both mid-cap and large-cap portfolios in terms of Sharpe Ratio and annualized return. This is in line with the Fama-French model's "size effect," which states that small-cap companies often provide larger returns as a result of higher risk and market inefficiencies.
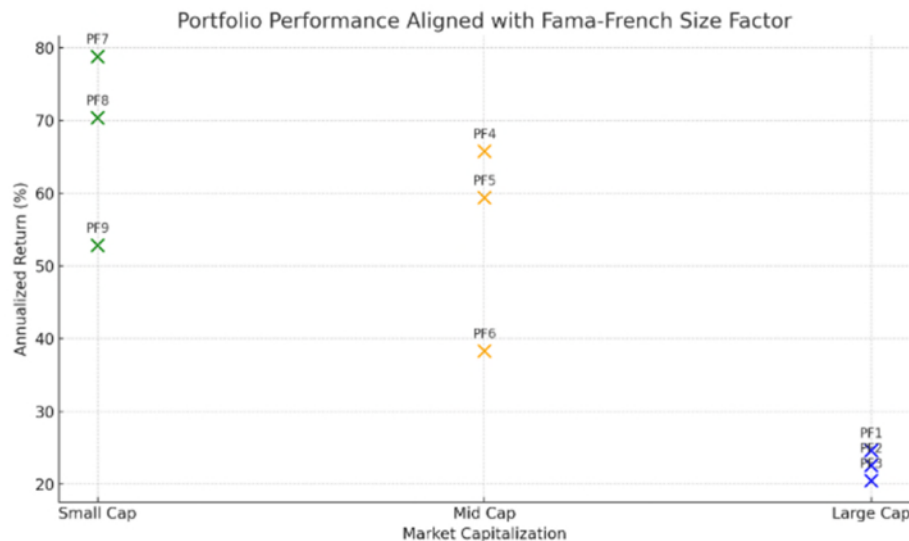
Furthermore, the presence of the value premium (HML factor) was supported by the significant value characteristics of many of the chosen companies throughout the portfolios, including lower P/E ratios and better ROE. During the fundamental analysis step of the stock screening process, these traits were highlighted.

Therefore, the better performance of smaller, value-oriented stocks in this study supports the theoretical validity of the Fama-French framework in the context of the Indian stock market in addition to reflecting real-world investing benefits. It

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emphasizes that, even in developing nations, business size and valuation measurements continue to be important explanatory factors for portfolio outcomes.

Reference: Fama, E. F., & French, K. R. (1992). The Cross Section of Expected Stock Returns. Journal of Finance, 47(2), 427–465.

https://doi.org/10.1111/j.1540-6261.1992.tb04398.x

Portfolio Performance Aligned with Fama-French Size Factor

14.2. Evidence Supporting Lev and Thiagarajan's Fundamental Signal Theory

Key financial indicators such as Return on Equity, EPS Growth, Debt-to-Equity Ratio, Profit Growth, and Asset Turnover served as the basis for the stock screening procedure in this study. These indicators closely matched the twelve fundamental signals that Lev and Thiagarajan (1993) established.

Their study shows that these signals have a strong correlation with future stock returns and contain additional information beyond profits. Portfolios built from firms with high fundamental scores, especially small-cap stocks, showed superior Sharpe Ratios and annualized returns in the current study. This validates the main findings of Lev and Thiagarajan's work in the context of the Indian equities market by demonstrating that basic indicators, when applied methodically, can successfully identify mispriced or high-potential securities.

 Reference: Lev, B., & Thiagarajan, S. R. (1993). *Fundamental information analysis. Journal of Accounting Research*, 31(2), 190–215.

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https://doi.org/10.2307/2491270

14.3.   Sharpe Ratio and Modern Portfolio Theory (MPT) Alignment

The small-cap portfolio, Portfolio PF7, outperformed the other portfolios in this analysis with the highest Sharpe Ratio of 1.972. This suggests that PF7 offers the best return when adjusted for risk and is largely consistent with the Efficient Frontier, a fundamental idea in MPT. In keeping with MPT's predictions, this lends credence to the idea that using both technical and fundamental analysis to build portfolios might produce profitable investment possibilities.

References: Markowitz, H. (1952). Portfolio Selection. The Journal of Finance, 7(1), 77–91. *https://doi.org/10.2307/2975974*

Sharpe, W. F. (1966). Mutual Fund Performance. Journal of Business, 39(1), 119–138.

https://doi.org/10.1086/294846