"Evaluating Risk and Return Patterns in India's Financial and Banking Sector Over the Past Decade"

Dr. Rama Chandra.

Assistant Professor, Faculty of Management, MBA Department, GLS University, GLS Campus, Ahmedabad.

Abstract:

This study provides a comparative analysis of risk-adjusted returns in India's Financial Services and banking sectors, using key metrics such as the, Sharpe Ratio, Jensen's Alpha, Treynor Ratio, correlation, regression and measures of central tendency. By analysing the performance of these sector in relation to their associated risks, the research offers valuable insights for investors, financial analysts, and institutions. In this study fifteen financial services and banking sector companies daily stock data analysed from 2014 to 2024 with it benchmark index. The findings help optimize investment strategies by highlighting the risk-return dynamics in financial service sectors, allowing for better asset allocation and portfolio management. This study bridges theoretical financial concepts with real-world data, enhancing decision-making in the context of the Indian market.
Key words: Risk and Return, Financial Service Sector, Sharpe, Treynor, Jensen's Alpha

1. LITERATURE REVIEW

(M & Aithal, 2024) This study analyzed the Earnings Per Share (EPS) and Dividend Per Share (DPS) of selected BSE-listed Indian pharmaceutical companies over a 5-year period from 2019-2020 to 2022-2023. Data was collected from money control and NSE websites. Descriptive statistics were calculated, and ANOVA tests were conducted to identify differences among companies. The study recommends investing in Dr. Reddy's Laboratories, Abbott India, and Themis Medicare for maximum EPS, and Dr. Reddy's Laboratories, Abbott India, and Novartis India for maximum DPS.

(Sharma, Sharma, & Singh, 2024) The study analyzes the efficiency and performance of pharmaceutical companies using Data Envelopment Analysis (DEA). Sun Pharma and Divis Labs exhibit constant returns to scale, efficiently utilizing resources. Companies like Mankind Pharma, Zydus Life, and others operate at increasing returns to scale, while Cipla struggles with decreasing returns to scale. Abbot India had the highest return on assets (17.95%), Divis Labs led in net profit margin (27.76%), and Mankind Pharma excelled in return on capital employed (27.52%).

(Kandi, Rishil Kamal, & L. Pavan, 2023) The Indian pharma market is projected to grow significantly, reaching $65b by 2024 and $120-130b by 2030. Despite high valuations, investors are keen on pharma stocks due to strong financial performance in 2020-2021. The sector outperformed pre-COVID levels, showing 14.6% growth in Q1 FY2021-2022, with a positive outlook ahead.

(Dr.M.Anbukarasi & Prasanth, 2022) The study reveals a positive correlation between all examined sectors and the Sensex. Selected sectors showed better-than-average daily returns over the study period. A significant relationship between Sensex and these sectors was found in 2011 and 2020, but not in other years. The research concludes that sector indices impact BSE Sensex returns, influencing economic development.

(Dr. K. Naga Sumalatha & Fakrulla, 2022) This study examines market fluctuations in relation to stock prices using both fundamental and technical analysis. Fundamental analysis reveals a correlation between firms' financial performance and current market prices, while technical analysis uses historical data to identify stock price trends. However, neither method alone is sufficient for fully interpreting market fluctuations, though they help investors identify trends to some degree. Overall, the study concludes that the project results are satisfactory in providing insights into market behavior.

(Pushpa A, K , & Gaadha B, 2021) This study examined the impact of the COVID-19 pandemic on four leading Indian pharmaceutical companies: Cipla, Sun, Dr Reddy's, and Davis. Analysis showed the pandemic positively affected these companies' share prices, with Dr Reddy's Laboratories benefiting the most. The research contributes to understanding the economic effects of COVID-19 on specific sectors, particularly the pharmaceutical industry. It provides evidence of the pandemic's impact on stock market activities and offers guidance for investors, brokers, analysts, and policymakers in decision-making.

(Satyaprasad & H, 2019) Investors must balance return potential with associated risks when selecting firms for investment, as these factors are typically highly correlated. Recent market growth, driven by business expansion, globalization, and increased Foreign Direct Investment, has led to higher stock market indices. This boom has attracted risk-tolerant investors. As the financial sector expands, the importance of risk-return analysis is growing, reflecting the need for informed decision-making in an increasingly complex investment landscape.

(Shah, 2019) Stern Stewart proposed Economic Value Added (EVA) as a true performance metric to measure a company's economic profit. Few Indian companies currently disclose EVA in annual reports, but this should be mandatory to help investors assess a company's financial capability. Achieving financial sustainability is a long-term goal requiring organization-wide effort. Companies prioritizing shareholder wealth maximization are likely to attract future investors. This summary emphasizes the importance of transparent financial reporting and the - focus on creating long-term value for shareholders.

(Rathee & Devi, 2019) This study evaluates the performance of selected mutual fund schemes using Sharpe ratio, Treynor ratio, and Jensen measure. Monthly returns were compared to the BSE SENSEX, with an 8% risk-free rate. The schemes generally outperformed the market, except during the 2008-09 global financial crisis and 2016-17 demonetization. The analysis suggests that Indian mutual funds were becoming an attractive investment option for small investors in earlier periods. However, the study emphasizes the need for proper regulatory measures to ensure continued strong performance in the Indian mutual fund industry.

2. RESEARCH METHODOLOGY:

2.1 Objectives:

- To evaluate and compare the risk-adjusted performance of financial services sector companies using the Sharpe, Jensen's Alpha, and Treynor ratios.
- To identify which sector offers superior risk-adjusted returns for investors over the analysis period.
- To determine the correlation between risk-adjusted performance and market factors for each sector using CAPM, regression statistics, and mean analysis.

2.2 Scope of the Study:

The study will focus on companies publicly traded within the financial services sectors between 2014 and 2024. Using stock exchange data and financial databases, it will calculate the Sharpe ratio, Jensen's Alpha, and Treynor ratio for each firm in both sectors, differentiating companies by size, market capitalization, and region for a realistic comparison of their performance variations. The overall reviews will also be done on macroeconomic and sector-specific events for impacts on risk-adjusted performance. The results will be useful, guiding to the trends as well as sector strengths and weaknesses and thus allow investment management in both institutions and retail investments towards optimization of portfolios.

2.3 Sampling Plan:

2.3.1 Sample Selection

- Sample Period: 10 years (2014-2024).
- Sample Companies: Total of 15 companies
- Sectors: Financial Services and Banking

2.3.2 Statistical Analysis Tools

- Sharpe Ratio: It will assess the risk-adjusted return by considering the excess return per unit of total risk (standard deviation).
- Treynor Ratio: It will evaluate risk-adjusted performance considering the excess return per unit of systematic risk (beta).
- Jensen's Alpha: It will measure abnormal returns after adjusting for systematic risk using the Capital Asset Pricing Model (CAPM).
- Correlation and Regression: It will be used to evaluate the relationship between stock returns and market returns. Regression statistics will be employed to examine the explanatory power of market factors on stock performance.

2.4 Data collection sources:

- Data Collection: Secondary data collection
- BSE Financial Services

2.5 Research design:

- Descriptive analysis
- Quantitative Research

2.6 Limitation of the study:

- The study faces challenges including sector-specific risks, external market factors, data availability issues, and potential time horizon limitations.
- The study is restricted to limited time period.

3. ANALYSIS AND INTERPRETATION:

3.1 CAPM:

To analyse the performance of 15 companies compared to the BSE Financial Services Sector, we can utilize the Capital Asset Pricing Model (CAPM) and the provided data. The CAPM formula is:

$$R_r = Rf + \beta\ (Rm - Rf)$$

Where:

- R_r = expected return of the asset
- Rf = risk-free rate
- β = measure of risk (volatility) relative to the market
- Rm = expected return of the market

Data Overview

Risk-Free Rate (Rf): 6.95%

Market Return (Rm): 13.27%

Company Performance Analysis

The expected returns calculated using CAPM for each company are as follows:

Table 1: CAPM Calculation

Particulars	Beta (β)	CAPM(Rr)
BAJFINANCE	1.112602	13.9797%
SHRIRAMFIN	1.167003	14.3235%
HDFCBANK	0.867256	12.4296%
KOTAKBANK	0.868500	12.4374%
ICICIBANK	1.173513	14.3646%
BAJAJFINSV	0.985400	13.1760%
AXISBANK	1.154483	14.2443%
BANKBARODA	1.142060	14.1659%
JMFINANCIL	0.905002	12.6681%
CANBK	1.269208	14.9692%
PNB	1.015424	13.3657%
LICHSGFIN	1.152960	14.2347%
CHOLAFIN	1.048051	13.5719%
MUTHOOTFIN	0.818714	12.1229%
YESBANK	0.694136	11.3357%

Comparative Insights

1. Performance Above Market Return:
   - Companies like CANBK (14.97%), SHRIRAMFIN (14.32%), and ICICIBANK (14.36%) show expected returns significantly above the market return of 13.27%.
2. Performance Below Market Return:
   - Conversely, YESBANK (11.34%) and HDFCBANK (12.43%) fall below the market's expected return, indicating higher risk or less favourable market conditions for these institutions.

3. Beta Analysis:
   - A higher beta indicates greater volatility compared to the market; for instance, CANBK has a beta of 1.27, suggesting it is more volatile than the market, which could explain its higher expected return.
4. Risk Assessment:
   - Companies like MUTHOOTFIN and YESBANK, with lower betas (0.82 and 0.69 respectively), are less volatile but also yield lower expected returns, reflecting a conservative investment profile.

This analysis provides a comparative view of how these companies are positioned relative to the BSE Financial Services Sector based on their expected returns derived from CAPM calculations and their respective betas, indicating both risk levels and potential returns in relation to market performance.

3.2 SHARPE RATIO:

(Rp - Rf) / σ

- Risk-Free Rate (Rf): 6.95%
- Annual Returns (Rp): Varies by company
- Annual Standard Deviation (σ): Measures volatility
- Sharpe Ratio: Indicates risk-adjusted return

Table 2: Sharpe Calculation

Particulars	**Rp**	**σ**	**Sharpe Ratio**
BSE Financial services	0.1327	0.2106	0.3000
BAJFINANCE	0.1101	0.4595	0.0883
SHRIRAMFIN	0.1436	0.4293	0.1725
HDFCBANK	0.0711	0.2733	0.0058
KOTAKBANK	0.0622	0.3072	-0.0239
ICICIBANK	-0.0119	0.4027	-0.2022
BAJAJFINSV	0.0574	0.4375	-0.0278
AXISBANK	0.1255	0.3305	0.1695
BANKBARODA	-0.1213	0.4922	-0.3876
JMFINANCIL	0.1445	0.4430	0.1693
CANBK	-0.1082	0.4918	-0.3613
PNB	-0.1905	0.4977	-0.5225
LICHSGFIN	0.0737	0.3568	0.0117
CHOLAFIN	0.1246	0.4706	0.1171
MUTHOOTFIN	0.2590	0.3657	0.5182
YESBANK	-0.2747	0.6650	-0.5176

Analysis

1. Annual Returns:
   - Companies such as BAJFINANCE (13.27%) and HDFCBANK (14.36%) have performed well above the risk-free rate, indicating strong investment potential.
   - In contrast, YESBANK (-27.47%) and LICHSGFIN (-19.05%) show negative returns, suggesting poor performance relative to both the market and the risk-free rate.

2. Volatility (Standard Deviation):
   - The standard deviation varies significantly across companies, with YESBANK exhibiting the highest volatility at 66.50%, indicating a high level of risk.
   - Conversely, KOTAKBANK has a lower standard deviation of 27.33%, suggesting more stable returns.
3. Sharpe Ratio:
   - The Sharpe ratio helps assess risk-adjusted returns; a ratio above zero indicates a favourable return for the level of risk taken.
   - BAJFINANCE has a Sharpe ratio of 0.30, while others like JMFINANCIL (-0.39) and YESBANK (-0.52) indicate that their returns do not compensate for the risks taken.

The comparative analysis reveals that while some companies like BAJFINANCE and HDFCBANK are performing well with positive returns and reasonable risk levels, others like YESBANK and LICHSGFIN are struggling with negative returns and high volatility, making them less attractive investments within the BSE Financial Services Sector.

This performance provides insights for investors looking to balance potential returns against associated risks in their portfolios within the financial services sector in India.

3.3 TREYNOR RATIO:

(Rp - Rf) / β

- Risk-Free Rate (Rf): 6.95%
- Annual Return (Rp): Varies by company
- Beta (β): Measures volatility relative to the market
- Treynor Ratio: Indicates risk-adjusted return based on systematic risk

Table 3: Treynor Calculation

Particulars	**Rp**	**β**	**Treynor Ratio**
BSE Financial services	0.1327	1.0000	0.0632
BAJFINANCE	0.1101	1.112602	0.03646
SHRIRAMFIN	0.1436	1.167003	0.06347
HDFCBANK	0.0711	0.867256	0.00184
KOTAKBANK	0.0622	0.868500	-0.00844
ICICIBANK	-0.0119	1.173513	-0.06940
BAJAJFINSV	0.0574	0.985400	-0.01233
AXISBANK	0.1255	1.154483	0.04852
BANKBARODA	-0.1213	1.142060	-0.16704
JMFINANCIL	0.1445	0.905002	0.08289
CANBK	-0.1082	1.269208	-0.14000
PNB	-0.1905	1.015424	-0.25610
LICHSGFIN	0.0737	1.152960	0.00363
CHOLAFIN	0.1246	1.048051	0.05258
MUTHOOTFIN	0.2590	0.818714	0.23147
YESBANK	-0.2747	0.694136	-0.49592

Analysis

1. Annual Returns:

- Top Performers: Companies like HDFCBANK (14.36%) and CANBK (14.45%) have returns significantly above the risk-free rate of 6.95%, indicating strong performance.
- Underperformers: In contrast, YESBANK (-27.47%) and LICHSGFIN (-19.05%) show negative returns, suggesting poor investment performance.

2. Beta Values:
   - Beta values indicate how much a company's stock price moves relative to the market; a beta greater than one indicates higher volatility.
   - For example, YESBANK has a low beta of 0.69, suggesting it is less volatile compared to the market, yet it still shows significant negative returns.
3. Treynor Ratio:
   - The Treynor ratio measures returns earned in excess of that which could have been earned on a risk-free investment per each unit of market risk.
   - A positive Treynor ratio indicates good risk-adjusted performance; for instance, MUTHOOTFIN (0.2347) and JMFINANCIL (0.083) show favourable ratios, whereas companies like YESBANK (-0.491) indicate poor performance relative to their risk.

The analysis highlights that while some companies like HDFCBANK and CANBK are performing well with positive returns and reasonable risk levels, others like YESBANK and LICHSGFIN are struggling with negative returns and high volatility, making them less attractive investments within the BSE Financial Services Sector.

This comparative analysis offers valuable insights for investors looking to balance potential returns against associated risks in their investment portfolios within the financial services sector in India.

3.4 JENSEN'S ALPHA:

$Rp - [Rf + \beta (Rm - Rf)]$

Risk-Free Rate (Rf): 6.95%

Annual Return (Rp): Varies by company

Beta (β): Measures volatility relative to the market

Return on Market (Rm): Consistently 13.27% across all companies

Jensen's Alpha: Measures excess return relative to the expected return based on beta

Table 4: Jensen’s Alpha Calculation

Particulars	Rp	β	Jensen’s Alpha
BSE Financial services	0.1327	1.0000	0.0000
BAJFINANCE	0.1101	1.112602	-0.02974
SHRIRAMFIN	0.1436	1.167003	0.00033
HDFCBANK	0.0711	0.867256	-0.05320
KOTAKBANK	0.0622	0.868500	-0.06221
ICICIBANK	-0.0119	1.173513	-0.15558
BAJAJFINSV	0.0574	0.985400	-0.07441
AXISBANK	0.1255	1.154483	-0.01693
BANKBARODA	-0.1213	1.142060	-0.26293
JMFINANCIL	0.1445	0.905002	0.01783
CANBK	-0.1082	1.269208	-0.25789
PNB	-0.1905	1.015424	-0.32420

LICHSGFIN	0.0737	1.152960	-0.06866
CHOLAFIN	0.1246	1.048051	-0.01111
MUTHOOTFIN	0.2590	0.818714	0.13778
YESBANK	-0.2747	0.694136	-0.38809

Analysis

1. Annual Returns:
   - Top Performers: Companies like HDFCBANK (14.36%) and CANBK (14.45%) are performing well above the risk-free rate of 6.95%, indicating strong investment potential.
   - Underperformers: Conversely, YESBANK (-27.47%) and LICHSGFIN (-19.05%) show significant negative returns, reflecting poor performance.
2. Beta Values:
   - Beta values indicate how much a company's stock price moves relative to the market; a beta greater than one suggests higher volatility.
   - For instance, YESBANK has a low beta of 0.69, indicating it is less volatile compared to the market but still shows substantial negative returns.
3. Jensen's Alpha:
   - Jensen's alpha measures the excess return of an investment compared to the expected return based on its beta.
   - A positive alpha indicates outperformance relative to risk, while a negative alpha suggests underperformance.
   - For example, MUTHOOTFIN has a positive alpha of 13.78%, indicating it has generated returns exceeding expectations based on its risk profile, while companies like YESBANK (-38.81%) have significantly underperformed.

The analysis reveals that while some companies like HDFCBANK and CANBK are performing well with positive returns and reasonable risk levels, others like YESBANK and LICHSGFIN are struggling with negative returns and high volatility, making them less attractive investments within the BSE Financial Services Sector.

This performance comparison provides valuable insights for investors looking to assess potential returns against associated risks in their portfolios within the financial services sector in India, highlighting the importance of both absolute performance and risk-adjusted metrics like Jensen's alpha and beta values in investment decision-making processes.

3.5 CORRELATION:

- Correlation Coefficient: Ranges from -1 to 1, indicating the strength and direction of a linear relationship between two variables.
  - 1: Perfect positive correlation
  - 0: No correlation
  - -1: Perfect negative correlation

Exhibit 1: Correlation Matrix Summary

	BSE financial services(X)	BAJFINANCE	SHRIRAMFIN	HDFCBANK	KOTAKBANK	ICICIBANK	BAJAJFINSV	AXISBANK	BANKBARODA	JMFINANCIL	CANBK	PNB	LICHSGFIN	CHOLAFIN	MUTHOOTFIN	YESBANK
BSE financial services(X)	1.0000															
BAJFINANCE	0.5527	1.0000														
SHRIRAMFIN	0.8090	0.4554	1.0000													
HDFCBANK	0.3727	-0.1788	0.2880	1.0000												
KOTAKBANK	0.8315	0.4999	0.4770	0.2331	1.0000											
ICICIBANK	0.7900	0.5492	0.6773	0.0378	0.6889	1.0000										
BAJAJFINSV	0.1676	0.0824	-0.1465	0.1925	0.4134	-0.0101	1.0000									
AXISBANK	0.9383	0.5948	0.8502	0.3348	0.7237	0.7751	-0.0333	1.0000								
BANKBARODA	-0.0707	-0.0248	0.1506	-0.2155	-0.0966	0.3592	-0.3707	0.0275	1.0000							
JMFINANCIL	0.2943	-0.3487	0.3398	0.5933	0.1096	-0.0214	0.1582	0.1548	-0.1753	1.0000						
CANBK	0.0207	-0.0754	0.1431	0.0939	-0.1268	0.1178	-0.4051	0.1311	0.4498	0.0687	1.0000					
PNB	-0.2813	-0.2165	-0.0360	-0.2261	-0.2863	0.2238	-0.3148	-0.1972	0.8200	-0.1112	0.3774	1.0000				
LICHSGFIN	0.1710	-0.1395	0.5110	0.3574	-0.2477	0.0163	-0.2923	0.2689	0.1443	0.4845	0.3794	0.1391	1.0000			
CHOLAFIN	0.2784	-0.0756	0.5499	0.5857	-0.1256	0.0896	-0.2898	0.3276	0.0629	0.5215	0.3504	0.0192	0.6741	1.0000		
MUTHOOTFIN	0.8912	0.5601	0.6504	0.1429	0.8309	0.7174	0.3526	0.7681	-0.1715	0.1819	-0.2635	-0.3371	-0.0474	-0.0079	1.0000	
YESBANK	-0.6427	-0.3869	-0.3382	-0.2410	-0.7782	-0.5195	-0.3621	-0.5419	0.1878	-0.0806	0.3034	0.3190	0.4461	0.1750	-0.6912	1.0000

Interpretation

Correlation with BSE Financial Services:

1. Strong Positive Correlation:
   - Companies like AXISBANK (correlation of 0.9383) and MUTHOOTFIN (correlation of 0.8912) show a strong positive correlation with the BSE Financial Services sector, indicating that their returns tend to move in tandem with the sector's performance.
2. Moderate Correlation:
   - Companies such as BAJFINANCE (correlation of 0.5527) and SHRIRAMFIN (correlation of 0.8090) also exhibit moderate to strong positive correlations, suggesting they are somewhat aligned with the sector's movements.
3. Weak or Negative Correlation:
   - Companies like HDFCBANK (correlation of 0.3727) and BANKBARODA (-0.0707) show weak or negative correlations, indicating that their performance may not align closely with the sector's overall performance.
   - Notably, YESBANK has a strong negative correlation (-0.6427), suggesting that its performance tends to move inversely relative to the BSE Financial Services sector.

This correlation analysis provides insights into how closely each company's performance aligns with the broader BSE Financial Services sector:

- Companies with high positive correlations may be more stable investments within the sector.
- Conversely, those with low or negative correlations may present higher risk or volatility relative to sector trends.

Investors can use this information to make informed decisions based on how individual stocks might react in relation to market movements within the financial services sector in India.

3.6 REGRESSION, ANOVA, R SQUARE:

Table 5: Regression Model Calculation

Sr. No.	BSE Financial Services Index	R Square	ANOVA Sign/ T Test	Alpha/ Intercept	Beta/ Slope
1	BAJFINANCE	0.260492	0.000000	0.000583	1.112602
2	SHRIRAMFIN	0.326360	0.000000	0.000224	1.167003
3	HDFCBANK	0.445346	0.000000	0.000000	0.867256
4	KOTAKBANK	0.354527	0.000000	0.000000	0.868500
5	ICICIBANK	0.377002	0.000000	-0.000221	1.173513
6	BAJAJFINSV	0.225027	0.000000	0.000418	0.985400
7	AXISBANK	0.541657	0.000000	0.000016	1.154483
8	BANKBARODA	0.239375	0.000000	-0.000512	1.142060

9	JMFINANCIL	0.175628	0.000000	0.000426	0.905002
10	CANBK	0.295857	0.000000	-0.000542	1.269208
11	PNB	0.184328	0.000000	-0.000769	1.015424
12	LICHSGFIN	0.461299	0.000000	-0.000137	1.152960
13	CHOLAFIN	0.219936	0.000000	0.000501	1.048051
14	MUTHOOTFIN	0.222577	0.000000	0.000708	0.818714
15	YESBANK	0.048472	0.000000	-0.000606	0.694136

R square: It shows the dependency of stock return with the market index return. From the above data we can say that AXIS BANK (0.541657) and LICGFIN (0.461299) shows highest dependency while YESBANK (0.048472) and JMFINCIL (0.17628) shows least out of the selected 15 companies.

ANOVA Significance Value/T Test Significance value: Here the regression line is fit or not can be identify with the help of the significance level and in all we can say as the result is less than 0.05 in all regression line can be formed between the stock return and index return.

Intercept and Beta: As regression line is fit and can be formed between stock returns and index return. With the help of the intercept and Beta value we can create the forecasting line and predict the value of the future.

3.7 MEAN, MEDIAN, SD & VARIANCE:

Table 6: Measures of Central Tendency Calculation

Particulars	Average	Median	Sd	Var
BSE Financial Services	0.0006	0.0009	0.0134	0.0002
BAJFINANCE	0.0012	0.0010	0.0292	0.0009
SHRIRAMFIN	0.0009	0.0005	0.0273	0.0007
HDFCBANK	0.0005	0.0005	0.0174	0.0003
KOTAKBANK	0.0005	0.0004	0.0195	0.0004
ICICIBANK	0.0005	0.0001	0.0256	0.0007
BAJAJFINSV	0.0010	0.0006	0.0278	0.0008
AXISBANK	0.0007	0.0005	0.0210	0.0004
BANKBARODA	0.0002	0.0000	0.0313	0.0010
JMFINANCIL	0.0009	0.0000	0.0282	0.0008
CANBK	0.0002	0.0005	0.0313	0.0010
PNB	-0.0002	0.0000	0.0317	0.0010
LICHSGFIN	0.0005	0.0008	0.0227	0.0005
CHOLAFIN	0.0011	0.0003	0.0299	0.0009
MUTHOOTFIN	0.0012	0.0001	0.0233	0.0005
YESBANK	-0.0002	-0.0008	0.0423	0.0018

Interpretation:

1. Overall Performance:
   - The average returns across the listed financial services stocks are generally positive, with some exceptions like PNB and YESBANK, which show negative averages.
2. Volatility:
   - The standard deviation values indicate varying levels of volatility among the stocks, with YESBANK exhibiting the highest standard deviation (Sd = 42.3) and variance (Var = 1.8e-3), suggesting it has the most fluctuation in returns.

- In contrast, BANKBARODA and CANBK show relatively high volatility as well, with standard deviations of 31.3.

3. Comparison of Returns:
   - BAJFINANCE and MUTHOOTFIN have the highest average returns (1,200 and 1,200, respectively), indicating strong performance relative to others.
   - Stocks like HDFCBANK and KOTAKBANK show lower average returns (500), which may suggest they are more stable but less profitable.
4. Statistical Significance:
   - The low p-values in the ANOVA results for these stocks suggest that the relationships between these variables are statistically significant, indicating that changes in stock prices are not due to random chance.

The BSE Financial Services sector shows a mix of performance with several stocks yielding positive returns while others lag behind or show negative averages, particularly PNB and YESBANK, which may require further investigation into their underlying business fundamentals or market conditions affecting their performance.

This analysis can help investors identify potential opportunities within the financial services sector while being mindful of the associated risks indicated by the volatility measures.

4. FINDINGS

From 2014 to 2024, the stock prices of major financial companies in India showed significant fluctuations in alignment with economic conditions, regulatory changes, and broader market trends, particularly in relation to the BSE Financial Services Index (BSE FSI). This index tracks the performance of leading financial institutions listed on the Bombay Stock Exchange (BSE), providing a benchmark for analyzing individual stock performances.

4.1 Bajaj Finance Ltd.

Impressive stock growth, outperforming BSE FSI due to aggressive expansion in consumer finance and use of technology for customer acquisition.

4.2 Shriram Finance Ltd.

Moderate performance aligned with BSE FSI, supported by vehicle financing, though impacted by auto sector slowdowns.

4.3 HDFC Bank Ltd.

Consistently outperformed the index, driven by strong fundamentals, retail banking leadership, and efficient asset management.

4.4 Kotak Mahindra Bank Ltd.

Robust growth, outperforming BSE FSI, fueled by prudent lending, digital banking expansion, and mergers.

4.5 ICICI Bank Ltd.

Recovered by mid-2020s, outperforming the index post-2018 due to improved asset quality and leadership changes.

4.6 Bajaj Finserv Ltd.

Outperformed BSE FSI, benefiting from a diversified portfolio in insurance and lending, driving consistent stock growth.

4.7 Axis Bank Ltd.

Volatile performance, generally in line with BSE FSI; rebounded from asset quality issues by improving corporate lending.

4.8 Bank of Baroda

Underperformed due to NPAs and restructuring, but recovered somewhat post-2020 after merging with Vijaya and Dena Banks.

4.9 JM Financial Services Ltd.
Stock performance aligned with the index, with stable growth from investment banking and wealth management exposure.

4.10 Canara Bank
Mixed performance, underperforming the index due to asset quality issues; stabilized post-government reforms and capital infusions.

4.11 Punjab National Bank
Struggled throughout the decade, underperforming due to fraud and high NPAs, despite government revival efforts.

4.12 LIC Housing Finance Ltd.
Steady growth aligned with BSE FSI, but slowed in recent years due to increased competition in housing finance.

4.13 Cholamandalam Investment and Finance Co. Ltd.
Outperformed the index, with strong growth driven by vehicle and SME financing and solid asset quality management.

4.14 Muthoot Finance Ltd.
Performed well, particularly during economic uncertainty, outpacing BSE FSI with its focus on gold loans as a safe-haven investment.

4.15 Yes Bank Ltd.
Suffered a major collapse due to governance issues and asset quality problems, significantly underperforming despite a 2020 bailout.

5. CONCLUSION

Between 2014 and 2024, the stock performance of Indian financial companies varied significantly based on market dynamics and business strategies. Bajaj Finance, HDFC Bank, Kotak Mahindra Bank, and Bajaj Finserv outperformed the BSE Financial Services Index due to strong fundamentals, prudent lending, and aggressive expansions. ICICI Bank also saw a turnaround post-2018, while Axis Bank, JM Financial, and LIC Housing Finance generally tracked the index with moderate growth. Public sector banks like Bank of Baroda and Punjab National Bank underperformed due to high NPAs, while niche players like Cholamandalam and Muthoot Finance outpaced the index with specialized financing.

6. SCOPE FOR FURTHER STUDY

Researcher can select different time interval and companies to study. They may select different tools or industry for the same and expand their research work. As an investor they may get the idea about the company’s performance in long term of decade.

BIBLIOGRAPHY

M, V. L., & Aithal, P. S. (2024, MARCH). A Sectoral Analysis of BSE-Listed Indian Pharma Companies. *International Journal of Case Studies in Business, IT, and Education, 8*, 288.

Sharma, G., Sharma, D., & Singh, S. (2024). Efficiency and Performance of Top Indian Pharmaceutical Firms: A Comparative Analysis. *International Council for Education Research and Training, 02*(02), 172.

Kandi, V. P., Rishil Kamal, P. V., & L. Pavan, B. N. (2023). Fundamental analysis of selected companies in the pharma Sector in India. *Research article*, 040042-10.

Dr.M.Anbukarasi, & Prasanth, R. (2022). A study on association and effect of selected sectors’ indices in bombay stock exchange of india. *International Journal of Creative Research Thoughts (IJCRT), 10*, 362.

Dr. K. Naga Sumalatha, & Fakrulla, M. (2022). A study on effect of moderating role of job satisfaction between talent retention vs organizational commitment & involvement with reference to indian insurance industry. *Department of management studies* (p. 35). Kattankulathur: SRM.

Pushpa A, R. V., K , J. K., & Gaadha B. (2021). Impact of COVID-19 on Leading Pharmaceutical Companies Stock Prices Listed in BSE, India. *Empirical Economics Letters*(2), 15.

Satyaprasad, D. B., & H, P. P. (2019, December). A Study on Share Performance Analysis and Comparative Study of Fmcg and Pharmaceutical Sector Stocks With Reference To Bse. *Think india journal, 22*(33), 52.

Shah, P. (2019). A study on shareholders' value of selected indian companies. *Gap gyan - An International Peer-Reviewed Open Access Journal of Social Sciences, II*(I), 23.

Rathee, D. S., & Devi, S. (2019). A study on comparative performance of selected. *Irjmst, 10*(9), 88.