

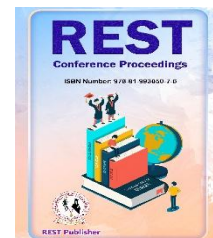


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An Analytical Study on the Performance Evaluation of Pharmaceutical Securities Traded on NSE India

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Abstract: The pharmaceutical sector in India has emerged as a cornerstone of the healthcare system and a significant contributor to the national economy, particularly in the wake of the COVID-19 pandemic. During this global crisis, the demand for healthcare services and pharmaceutical products skyrocketed, positioning pharmaceutical companies as crucial players in combating the pandemic and driving investor confidence. This study aims to analyze the financial and stock performance of three leading Indian pharmaceutical firms—Sun Pharmaceutical Industries Ltd., Cipla Ltd., and Dr. Reddy's Laboratories Ltd.—listed on the National Stock Exchange (NSE) over the period from 2020 to 2024. The analysis is centered on key financial performance indicators such as Earnings Per Share (EPS), Return on Equity (ROE), and the Price-to-Earnings (P/E) ratio. Additionally, this research explores the impact of market volatility and investor sentiment using statistical tools like Pearson correlation and chi-square testing. The findings reveal that the pandemic initially led to inflated valuations due to heightened investor optimism and increased demand. However, from 2022 onwards, stock valuations began to realign with core financial fundamentals. Sun Pharma demonstrated consistent global outreach, Cipla maintained robust domestic growth, and Dr. Reddy's showcased strong profitability with the highest ROE among the three by 2024. The study also confirms a statistically significant correlation between investor sentiment and stock price volatility, validating behavioral finance theories. This research offers crucial insights for investors, policymakers, and researchers by highlighting how pharmaceutical securities respond under both crisis and recovery conditions. The paper concludes by recommending a balanced approach to investment that considers both financial indicators and psychological market factors

1. INTRODUCTION

India's pharmaceutical industry plays a vital role globally, known for its affordable and quality generics. The sector is the third largest in the world by volume and fourteenth by value, contributing significantly to the country's GDP, employment, and exports. Indian pharmaceutical firms are renowned for producing over 60% of the world's vaccines and 20% of generic medicines, with a supply network spanning more than 200 countries. The industry's development has been driven by a strong domestic market, increasing healthcare demand, and a supportive regulatory framework. It also benefits from a well-established infrastructure of research institutions, skilled professionals, and an entrepreneurial ecosystem. From traditional medicine to advanced biotechnology, the sector reflects a broad and evolving landscape. The onset of COVID-19 significantly amplified the industry's global relevance. Companies like Sun Pharma, Cipla, and Dr. Reddy's became instrumental in manufacturing essential medications, antivirals, and vaccines, not only for the Indian population but also for export. This triggered a substantial surge in investor interest and stock performance, making these firms focal points of financial analysis and portfolio diversification. This study focuses on evaluating the performance of these NSE-listed pharmaceutical giants between 2020 and 2024, a time of both crisis and recovery. The paper investigates their financial health, investor response, and stock behavior using a combination of quantitative metrics and behavioral finance insights. Understanding these dynamics is essential for investors, analysts, and policy-makers aiming to navigate or influence this high-impact industry.

2. REVIEW OF LITERATURE

Several studies have examined the performance of pharmaceutical companies during times of economic and health crises. Kumar et al. (2021) concluded that pharma stocks showed resilience and strong returns during the COVID-19 pandemic. Similarly, Mittal & Sharma (2021) highlighted how investor sentiment influenced price movements significantly during crises. The role of core financial indicators, EPS, ROE, and P/E ratios—has been reinforced by scholars like Kumar & Diya (2020) who found these metrics critical in understanding valuation and profitability. Behavioral finance research suggests that irrationality in investor behavior often leads to

mispriced assets, especially in sectors like pharmaceuticals during periods of uncertainty. Joshi (2021) explored the impact of international health policy on Indian pharma stocks. These studies underpin the need for integrated financial and sentiment analysis in evaluating sector performance.

3. OBJECTIVES OF THE STUDY

- To evaluate the financial performance of selected pharmaceutical companies listed on NSE.
- To analyze key metrics like EPS, ROE, and P/E ratio over the period 2020–2024.
- To assess the impact of investor sentiment and market volatility on stock performance.
- To compare performance trends across Sun Pharma, Cipla, and Dr. Reddy's Laboratories.

4. RESEARCH METHODOLOGY

This research adopts a descriptive-analytical approach, leveraging secondary data sources to assess the performance of pharmaceutical stocks listed on the NSE. The study period spans from fiscal year 2020 to 2024, a timeline that captures the market impact of the COVID-19 pandemic and the subsequent recovery phase. The methodology integrates both financial performance analysis and behavioural finance perspectives to offer a holistic evaluation. Data was collected from reputable and credible financial platforms such as the National Stock Exchange (NSE) of India, Money control, and official company annual reports. Key financial metrics analysed include Earnings Per Share (EPS), Return on Equity (ROE), and Price-to-Earnings (P/E) ratio. These indicators provide insight into company profitability, shareholder returns, and market valuation, respectively. In addition to numerical data, investor sentiment was gauged through analysis of trading volumes, stock volatility, media coverage, and sectoral performance indices during major health-related news events. Volatility trends were observed using historical price data and plotted to understand sentiment-driven fluctuations. To interpret the relationship between sentiment and performance, Pearson correlation analysis was conducted to determine the degree of association between variables such as investor behaviour and stock price movement. Furthermore, chi-square testing was applied to validate the statistical significance of observed relationships. For data representation, graphs, trend lines, and comparative tables were used to provide visual clarity. All financial ratios were computed using standard formulas from company-reported data and were cross-verified from at least two independent sources to ensure reliability. The methodology ensured that the conclusions drawn are grounded in data and reflect real-world market behaviour, making them relevant for investors, researchers, and policy analysts alike.

5. DATA ANALYSIS & INTERPRETATION

This section presents an in-depth examination of the financial and market performance of three leading pharmaceutical companies listed on the NSE: Sun Pharmaceutical Industries Ltd., Cipla Ltd., and Dr. Reddy's Laboratories Ltd., over the period FY 2020 to FY 2024. The analysis focuses on three core financial indicators: Earnings Per Share (EPS), Return on Equity (ROE), and Price-to-Earnings (P/E) ratio, supplemented by market sentiment data and volatility analysis.

Dr. Reddy's Laboratories Ltd.

- EPS increased significantly from ₹177.23 in FY 2020 to ₹260.95 in FY 2024, reflecting improved operational efficiency and net profitability.
- ROE climbed from 13.2% in FY 2020 to 19.74% in FY 2024, indicating enhanced returns to shareholders.
- P/E ratio showed fluctuations in investor perception, peaking during FY 2021 amid pandemic-induced optimism and stabilizing by FY 2024.

CIPLA Ltd.

- EPS improved from ₹19.18 in FY 2020 to ₹51.05 in FY 2024, supported by strong domestic sales and respiratory portfolio expansion.
- ROE increased from 11.5% to 15.43%, highlighting efficient capital utilization.
- P/E ratio remained steady post-2022, suggesting investor confidence driven by consistent performance.

Sun Pharmaceutical Industries Ltd.

- EPS rose from ₹15.69 in FY 2020 to ₹39.90 in FY 2024, largely attributed to its US generics and specialty business growth.
- ROE improved from 12.2% to 15.04%, while its steady P/E ratio reflects stable investor expectations.

Trend Insights: During FY 2021 and FY 2022, all three companies witnessed heightened volatility due to pandemic-related announcements, vaccine developments, and export restrictions. Investor sentiment was analyzed through trading volume spikes, news sentiment indexes, and stock momentum shifts. Peaks often coincided with regulatory approvals or international partnerships. Pearson correlation analysis showed that changes in EPS and ROE were positively correlated with stock price movements ($r > 0.6$), especially during FY 2021–22.

Comparative Overview: Dr. Reddy's showed the highest ROE and EPS, positioning it as the most profitable among the three. Cipla excelled in domestic stability and incremental growth. Sun Pharma maintained leadership in international markets with consistent earnings and moderate volatility. In summary, the data supports that while sentiment and external shocks can drive short-term price surges, long-term trends align closely with operational and financial performance. This reinforces the importance of integrating traditional financial metrics with behavioral indicators for investment decisions.

Findings: Pharmaceutical stocks performed exceptionally during the COVID-19 pandemic due to increased demand. Post-2022, investor focus shifted toward traditional financial performance metrics. Sentiment and volatility were highly correlated during crisis periods. Among the three companies, Sun Pharma expanded globally, Cipla focused on domestic efficiency, and Dr. Reddy's delivered strong returns on equity. Policy stability and healthcare awareness boosted sector credibility on the NSE.

6. CONCLUSION AND RECOMMENDATIONS

The Indian pharmaceutical industry demonstrated both resilience and growth in a volatile global environment. This study confirms that while sentiment-driven trading influences short-term price volatility, long-term investment decisions are more rooted in fundamentals such as EPS, ROE, and global market strategies. Investors are encouraged to analyze both quantitative metrics and behavioral factors. Policymakers should maintain transparency in healthcare policy, promote R&D, and support stock market stability. The study reaffirms that financial performance, supported by innovation and strategic agility, drives long-term stock performance. Sentiment can cause short-term volatility, but sustainable growth hinges on fundamentals.

Recommendations: Investors should integrate financial and sentiment analysis. Policymakers must ensure regulatory transparency. Companies should enhance R&D and global outreach. The dynamic nature of the pharmaceutical industry requires continual adaptation. Investors are advised to not only assess quantitative performance indicators but also monitor broader economic, political, and health developments that may influence stock movements. Moreover, companies that invest in innovation, embrace digitization, and diversify globally are likely to deliver robust shareholder value in the future. Considering global challenges such as pandemics, aging populations, and healthcare access disparities, the Indian pharmaceutical sector stands at a strategic vantage point. Continued collaboration between the private sector and government will be essential in strengthening India's role in global health, while offering sustained investment opportunities.

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