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INVESTIGATING THE LINK BETWEEN CIPLA STOCK PERFORMANCE AND NIFTY-FIFTY INDEX

Dr. Sahifa Mazgaonkar
Assistant Professor, M. L. Dahanukar College of Commerce, Mumbai
sahifam@mldc.edu.in

ABSTRACT
Investigating the Cipla Stock Performance along with Nifty-Fifty Index. This study explores how Cipla's share price relates to the Nifty-Fifty. Index over a one-year period from September 18, 2023, to September 16, 2024. Using daily Closing prices for both Cipla and the Nifty-Fifty index, the research seeks to establish the strength and importance of the correlation. The results indicate a highly positive correlation, suggesting that Cipla's stock prices are moving in tandem with overall market trends captured by the Nifty-Fifty index. This correlation suggests the significance of overall market movements when examining individual stock performance. Such a study is informative to investors and market analysts for enhancing investment strategies and making portfolio management decisions. Understanding the interconnectivity of Cipla's stock with the rest of the market will help investors predict better movements in the market and make the necessary portfolio adjustments. This research adds to the understanding of stock market behavior in India, providing actionable insights for more informed and effective financial strategies.

Keywords - Nifty Fifty, Cipla, Correlation etc.

1. INTRODUCTION

The stock market is an essential financial platform through which shares of publicly quoted companies are traded. It plays a great role in the economy because it channels savings into productive investments, thus promoting economic development. Stock prices, which measure the value of a firm's shares, vary due to several factors, such as market demand, company performance, and general economic conditions. Investors keep track of the price of stocks to make sound investment decisions whether to buy or sell shares. (Madhuri Devi & Hinduja, 2018)

In the last decade or so, the Indian stock market has been seen as one of the most phenomenal, being one of the best global financial markets. Its huge exchanges, such as the Bombay Stock Exchange (BSE) and the National Stock Exchange (NSE), have allowed the market capitalization as well as trading volumes in India to grow highly. The growth is a consequence of a strong economy and rising foreign investments, along with more people entering the retail investor ranks. The Nifty-Fifty index is a benchmark of overall market performance, comprising 50 of the largest and most liquid stocks on the NSE.

With such rapid growth, it is essential to research the relationship between individual stock performances and broader market indices. This paper, "Investigating the Link Between Cipla Stock Performance and Nifty-Fifty Index," is aimed at finding out the relationship between Cipla's stock prices and the Nifty-Fifty index. It will help investors, market analysts, and financial strategists understand this relationship. It can help make informed investment decisions, design effective portfolio management strategies, and understand market dynamics better.

Understanding the correlation between Cipla's stock performance and Nifty-Fifty Index would be essential for any kind of financial decision. High correlation indicates that the stocks are moving in similar patterns, thus reducing diversification benefits, while low or negative correlation indicates potential as a hedge against market volatility. It helps in optimizing portfolios, assessing risk, timing the market, rotating sectors, benchmarking performance, and developing hedging strategies. Discussing the impact of correlation analysis on financial decisions could make the academic focus more profound, highlighting the significance of the study in most aspects of investment.

This study aims at contributing to the broader knowledge of stock market behavior in India by analyzing the correlation between Cipla's stock performance and the Nifty-Fifty index, and thereby providing practical applications for investors and overall market efficiency.

2. OBJECTIVES OF THE STUDY

1. *To analyse the relationship between the daily closing prices of Cipla and the Nifty-Fifty index.*
2. *To find out the strength and significance of the correlation between Cipla's stock performance and the Nifty-Fifty index.*
3. *To understand insights into how movements in the broader market index (Nifty-Fifty) are associated with the stock performance of Cipla.*

3. PERIOD OF THE STUDY AND DATA COLLECTION

This period of the study ranges from September 18, 2023 to September 16, 2024. The secondary data was collected from the website of the National Stock Exchange (NSE). It includes the closing prices on daily basis for Cipla and the Nifty-Fifty Index for the period considered. The analysis is directed towards understanding the relationship between these

two variables, so that the insights can be gathered about how the stock of Cipla performs in accordance with the broader market index.

3.1. SIGNIFICANCE OF THE STUDY

The importance of this paper is that it might actually help to provide some precious insights into the correlation that exists between the stock performance and Nifty-Fifty indexes for Cipla, so that investors and other market analysts can take sound decisions about their investment portfolio. This study is just one more contribution to the comprehensive knowledge of the behavior of the Indian stock market, highlighting exactly how individual stock performance follows broader market trends. Moreover, the results can help develop efficient portfolio management strategies that allow financial strategists to be better in predicting market movements and, hence, make changes in their portfolios. The study thus emphasizes the analysis of individual stock performance against the background of general market dynamics, which would thus give a holistic view for the enhancement of investment decision-making processes.

3.2. LIMITATIONS OF CORRELATION FOR PREDICTING FUTURE STOCK PERFORMANCE

A significant drawback to relying on correlation analysis is the potential overreliance on historical data, which fails to accurately predict the performance of stocks in the future. The correlations from past trends might miss unforeseen market disruptions or idiosyncratic shocks that can disrupt Cipla's stock in unpredictable ways. Without a word to the contrary, the study might actually contribute to investors having too much confidence in the past patterns, without realizing that the financial markets can be highly dynamic and, at times, unpredictable. In conclusion, it should be acknowledged that historical correlations may indeed have value, but these values should be augmented with forward-looking analyses and taking into consideration possible market anomalies.

4. REVIEW OF LITERATURES

Selvam, Indhumathi, and Lydia (2012) analyzed the influence of inclusion and exclusion of stock in the S&P CNX Nifty index, and it was observed that such inclusion and exclusion events only cause short-term price effects on the stock without any long-term valuation. The study also came to a conclusion that the Indian equity market reacts negatively to these

changes in the index and excess returns cannot be earned using such information. Joshi (2017) examined the effects of dividend announcements on Nifty 50 companies' stock prices and found that dividend declarations have a highly significant impact on stock prices. A paired sample t-test analyzed the data of 37 companies using which the research could verify that dividend announcements were necessary factors for the stock market investors. In this, Pandey, Samanta, and Kumar (2017) empirically researched, which showed a relation of the Nifty index with a number of other sectoral indices of NSE in which the majority of the sectors were under its influence except the Realty and PSU sectors. This research illustrates the need to understand this correlation between stock indices with better investment strategies. Vora (2018) investigates the impact of financial performance indicators, such as Return on Investment (ROI), Return on Assets (ROA), Return on Equity (ROE), and Earnings per Share (EPS), on the market price of Nifty 50 companies' shares. The study shows a very strong positive correlation between EPS and market price, while ROA, ROI, and ROE have weaker correlations. Multiple regression analysis explains 76.5% of the variation in market price due to these variables. The study by Jain, Gupta, and Singh (2018) explores the relationship of macroeconomic variables with stock prices of financial sector companies in NIFTY 50. Their research underscores the accuracy of stock prediction models and underlines the relevance of these models for investors, sellers, and other stakeholders in making informed decisions. The findings show how data analytics can be used for recommending optimal investment strategies by predicting the precise value of the stocks. Priya and Arabinda (2019) analyzed the stock prices on the Bombay Stock Exchange (BSE) of three firms in the construction industry —DLF, Gammon India, and Hindustan Construction Company—using certain statistical methods, such as simple moving average (SMA) and relative strength index (RSI). The research indicates that DLF performed the best, Gammon the worst, suggesting investors use indicators like RSI and money flow index to make a buy or sell decision. Singh and Kumar (2020) analyze the dynamic relationship between Nifty-Fifty and sectoral indices of the National Stock Exchange with unit root and Granger-causality tests. According to their findings, strong uni-directional and bi-directional linkages exist between sectors such as banking, financial services, and metal, while there are no significant linkages for FMCG and IT sectors with other sectors. The study's insights are important for portfolio reallocation and risk management. Natarajan et al. (2021) investigate the dynamic relationship between macroeconomic variables - gold price, oil price, exchange rate-and the NIFTY stock index. It is found by regression and Granger causality tests that gold price has direct influence on NIFTY, whereas indirect influence was found of exchange

rate and oil price. The results highlight the interconnectedness of asset prices with stock market performance. Kumar, Patel, and Garg (2022) explored the short- and long-term relationships between the Nifty Index and ten sectoral indices of NSE, finding no long-term association but identifying a short-term relationship between Nifty Index and Nifty Media. The study also highlighted that Nifty Pharma was the least sensitive to changes, while Nifty Private Banks were the most sensitive.

Mittal and Sharma (2021) studied the impact of COVID-19 on stock returns in India's healthcare and pharmaceutical sector, using daily closing prices from May 2019 to April 2020. Their event study revealed significant abnormal returns in this sector. However, when compared to other sectors, these returns were not statistically significant, indicating a complex influence of the pandemic that requires further sector-specific investigation. Nikhitha M. H. and Satyendra P. Singh (2022) analysed the risk and return profiles of prominent stocks in India's automobile and pharmaceutical sectors. They assessed total risk, beta factors, and both systematic and unsystematic risks, using the Sharpe's ratio for risk-adjusted returns. Their findings showed that pharmaceutical stocks, particularly Abbott India Ltd., offered higher returns with lower risk compared to automobile stocks, highlighting the importance of considering both risk and return in investment decisions, consistent with modern portfolio theory.

Lobo and Bhat (2022) conducted a systematic literature review on share price movements in the Indian Pharmaceutical Industry from 1953 to 2021, highlighting research gaps, particularly pre- and post-Covid-19. The review has dealt with essential and technical analysis, volatility, and risk-return dynamics. Financial performance, volatility persistence, monthly share price behavior, share price trend forecasting, and factors that would influence share value are critical gaps in this regard. Thus, the paper underscores the continuous research needs for the comprehension of the factors influencing the movements of shares and subsequently enhancing the arena of capital markets. Khan and Joy (2023) examine the relationship between the Nifty 50 index and macroeconomic variables, such as inflation and interest rates, using regression techniques from early 2017 to mid-2023. The authors conclude that neither of these variables is a good predictor of the Nifty 50, thereby underlining the intricacy of stock market behavior and the necessity of identifying other influencing factors. Their research focuses on the general investigation of variables that determine stock market movements, consistent with the idea that no single variable determines market trends.

Chauhan, Gupta, and Shridhar (2023) analyzed how macroeconomic variables influence the dynamics of stock markets and, hence, the investment decisions. Considering the studies from 2010 to 2020, it was observed that Nifty 50 Index moves in tandem with most indicators, such as the prices of gold, changes in the exchange rate, consumer price index, and interest rates. Their study underscores the fact that financial markets are dynamic and require multiple economic factors for a rational investment decision. It underscores the complex interplay between economic conditions and stock market behavior, urging investors to stay vigilant and adaptable. The review of the literature shows that stock returns in the healthcare and pharmaceutical industry in India exhibit complex interaction between macroeconomic determinants, financial performance, and market behavior. Cumulatively, the findings illustrate that an in-depth appreciation of a myriad of variables interacting within and across the parameters influences stock market dynamics, stressing that the continued research be an impetus for investment decisions and better projections against a backdrop of dynamically shifting economic trend.

5. DATA ANALYSIS AND RESULTS

The following section illustrates the detailed analysis of data collected. This detailed analysis aims to find the relation of Cipla's performance in terms of stocks with the Nifty-Fifty index for the given period.

Table No. 1- Descriptive Statistics

	Nifty-Fifty	*Cipla*
N	*247*	*247*
Mean	*22189*	*1395*
Median	*22147*	*1425*
Standard deviation	*1755*	*143*

Source: Researcher's compilation from secondary data

Table shows the descriptive statistics for daily closing prices of Nifty-Fifty and Cipla for the period September 18, 2023, to September 16, 2024. The length of the sample for both datasets is 247 daily observations. For Nifty-Fifty, the average daily closing price was ₹22,189 with a median at ₹22,147 and standard deviation at ₹1,755, which indicates variability from the mean. The mean daily closing price for Cipla is ₹1,395, median at ₹1,425, and a standard deviation of ₹143, thus suggesting relatively lesser variability as compared to Nifty-Fifty. These statistics present an overall view of central tendency and dispersion of daily closing prices of both Nifty-Fifty and Cipla during the stipulated period.

Table No. 2 - Test of Normality

	Nifty Fifty	*Cipla*
N	*247*	*247*
Shapiro-Wilk W	*0.952*	*0.939*
Shapiro-Wilk p	*< .001*	*< .001*

Source: Researcher's compilation from secondary data

The table presents the results of the Shapiro-Wilk test for normality on the daily closing prices of Nifty Fifty and Cipla from September 18, 2023, to September 16, 2024. Both datasets have 247 observations. The Shapiro-Wilk W values for NiftyFifty and Cipla are 0.952 and 0.939, respectively, with p-values less than 0.001 for both. These p-values indicate that the null hypothesis of normality is rejected for both datasets, meaning that the daily closing prices of Nifty Fifty and Cipla do not follow a normal distribution.

Table No 3 - Correlation Test Statistics

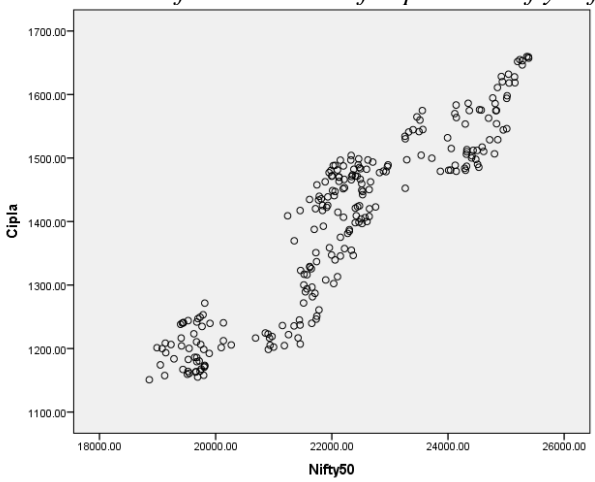
		Cipla
Nifty Fifty	*Kendall's Tau B*	*0.768*
	p-value	*< .001*

Source: Researcher's compilation from secondary data

The table shows the correlation matrix for the daily closing prices of NiftyFifty and Cipla, both in Indian Rupees (₹), from September 18, 2023, to September 16, 2024, using Kendall's Tau B. The correlation coefficient between NiftyFifty and Cipla is 0.768, indicating a strong positive relationship between the two. The p-value for this correlation is less than 0.001, suggesting that the correlation is statistically significant. This means that as the daily closing prices of NiftyFifty increase, the daily closing prices of Cipla tend to increase as well, and this relationship is unlikely to be due to random chance.

The scatter plot graph shows the relationship between the daily closing prices of Nifty-Fifty and Cipla, both in Indian Rupees (₹), from September 18, 2023, to September 16, 2024. The horizontal axis represents the Nifty-Fifty index values, ranging from approximately ₹18,000 to ₹26,000, while the vertical axis represents Cipla's closing prices, ranging from about ₹1,100 to ₹1,700. The data points form a diagonal pattern from the bottom left to the top right, indicating a positive correlation. This means that as the Nifty-Fifty index increases, Cipla's closing prices also tend to increase, which aligns with the strong positive correlation (Kendall's Tau B = 0.768) you mentioned earlier.

Figure 01 Scatter Plot of Stock Prices of Cipla and Nifty Fifty Index



Source: Researcher's compilation from secondary data

6. DISCUSSION AND FINDINGS

The research reveals a strong positive correlation between Cipla's stock performance and the Nifty-Fifty index, indicating that Cipla's stock prices tend to move in tandem with the broader market trends. This significant relation is indicating that the index rise of Nifty-Fifty is likely to increase Cipla's stock prices. This finding would be crucial for investors and market analysts to identify the influence of general movements in the market on individual stock performances.

Such positive correlation between Cipla and the Nifty-Fifty index suggests that even more attention should be paid to wider indices, instead of individual stocks while researching for investments. For the investors, this means monitoring Nifty-Fifty will enable the tracing of likely fluctuations in the stock prices of Cipla. The inter-link between both would serve the purposes of developing more informative strategies and better portfolio management. Overall, the study contributes to a deeper understanding of stock market behavior in India, emphasizing the interconnectedness of individual stocks with broader market trends.

7. CONCLUSION OF THE STUDY

This research indicates that the Nifty-Fifty index and the Cipla stock price are very strongly positively correlated. That is, Cipla's stock price has moved along with other market movements in most of the time. Hence, market movement analysis can be highly essential when assessing the individual performance of the stock. The correlation may help the

investors and the analysts analyze their investment and portfolio decisions more appropriately. An appreciation for the interconnectedness of the stock of Cipla with the broader market could help investors better forecast moves of the market and take on the right adjustments for portfolios. The study identifies that a comprehensive approach toward understanding the stock should look beyond its individual performance to overall trends in the market. Through this, the research eventually contributes to the general stock market behavior in India while providing actionable insights for potentially more informed and effective financial strategy making.

8. FUTURE SCOPE OF THE STUDY

Future studies should explore other forms of prediction of stock performances, including forward-looking analyses as well as real-time information. Other sectors and even market indices can be included to develop a better understanding of the working of the market. Further, the impact of macroeconomic factors, policy changes, and global economic events on stock performance can be analyzed to make the study more robust and practically relevant. This way, future studies will be able to provide more dynamic and robust insights into the complex nature of financial markets.

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