

Stock Splits and Firm Profitability: An Analysis of Revenue Growth and Share Price Adjustments

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ABSTRACT

This study aims to investigate the impact of stock splits on firm profitability and shareholder wealth within the Indian equity market, focusing on revenue growth, share price adjustments, and cost of equity implications. A quantitative research approach was adopted, utilizing data collected from primary and secondary sources, including stock price data and financial reports. The study applied statistical techniques such as Sharpe ratio analysis, coefficient of variation, and performance metrics to evaluate post-split returns, volatility, and market performance. Data analysis involved descriptive statistics, correlation heatmaps, and visualizations to interpret the relationship between stock splits, market capitalization, and returns. The findings revealed that stock splits generally resulted in positive returns, particularly in the short term. Companies with strong financial performance and large market capitalization experienced higher returns post-split. The risk-adjusted performance, measured by the Sharpe ratio, improved for many companies, highlighting the benefits of strategic stock splits. Additionally, the study found that volatility plays a significant role in post-split performance, with less volatile companies generally yielding better returns. The study concludes that stock splits can enhance investor sentiment, improve liquidity, and lead to short-term stock price appreciation. Companies that execute stock splits amid favorable market conditions and strong financial health tend to perform better post-split. The findings underscore the importance of timing and business fundamentals in determining the success of stock splits.

Keywords: Stock splits, post-split performance, Sharpe ratio, market capitalization, returns, investor sentiment, risk-adjusted performance, Indian stock market, financial inclusion.

INTRODUCTION

Stock splits are a common corporate action undertaken by publicly traded companies to increase the liquidity and affordability of their shares. By dividing existing shares into a larger number of shares, stock splits aim to make the shares more accessible to a wider investor base. While the intrinsic value of the firm remains unchanged, stock splits can have significant implications for firm profitability and shareholder returns. This study examines the relationship between stock splits and firm performance in the context of the Indian equity market. Specifically, we investigate the impact of stock splits on revenue growth and share price adjustments.

LITERATURE REVIEW

Research on stock splits has focused on their effect on various aspects of firm performance, including revenue growth, share price volatility, cost of capital, and profitability. While stock splits do not alter the intrinsic value of a company, they can influence investor behavior and perceptions, potentially impacting several financial metrics. This literature review synthesizes key findings relevant to each research question regarding stock splits.

Impact of Stock Splits on Firm Revenue Growth

Research on the effect of stock splits on firm revenue growth often centers on the signaling hypothesis. Ikenberry, Rankine, and Stice (1996) suggest that stock splits generally convey a positive outlook for future revenue growth. They argue that managers typically announce splits when they foresee an improvement in the firm's future performance, aligning with the signaling theory that views stock splits as a reflection of management's confidence in the company's growth trajectory. However, the positive sentiment surrounding stock splits does not imply that revenue growth is directly triggered by the split itself. In contrast, Byun and Rozeff (2003) contend that although stock splits may boost trading volumes and

temporarily capture investor interest, these factors do not necessarily lead to long-term revenue growth.).

Relationship Between Stock Splits and Share Price Volatility

The impact of stock splits on share price volatility has been extensively studied, with evidence generally indicating that volatility tends to rise following a split. Desai, Nimalendran, and Venkataraman (1998) observed that stock splits often lead to increased volatility, which they attributed to a surge in retail investor activity. When shares are split, they become more affordable, attracting more retail investors who may trade more actively on lower-priced stocks. This trend aligns with the liquidity hypothesis, which suggests that stock splits enhance liquidity by making shares accessible to a broader base of smaller investors, thereby driving greater price fluctuations (Brennan & Copeland, 1988). Conroy and Harris (1999) support this notion, showing that the volatility increase post-split is frequently due to heightened trading activity and demand among retail investors. The relationship between stock splits and share price volatility is intricate, with considerable research exploring how splits impact both liquidity and volatility pre- and post-split. Stock splits may momentarily stabilize prices before the split, only to increase volatility afterward due to shifts in trading dynamics and investor behavior. Rudnicki (2011) found that volatility of abnormal returns tends to decrease significantly before the split, implying a stabilizing effect as investors prepare for the change (Rudnicki, 2012).

Table 1: Research Gap Analysis

Objective	Existing Research	Research Gaps	Sources
Impact of Stock Splits on Firm Revenue Growth	Studies indicate that stock splits in Indian markets have negligible or indirect effects on revenue growth, often as part of broader investor strategy.	Limited analysis on how specific split types (e.g., 2-for-1, 10-for-1) might impact consumer and investor behavior in India, influencing revenue differently across industries.	Pandey et al. (2022), Soni et al. (2020), Aithal (2021)
2. Relationship between Stock Splits and Share Price Volatility	Stock splits typically increase short-term price volatility due to retail investor activity, followed by a gradual normalization.	Insufficient studies on the extent of post-split volatility across sectors or in different market cap categories, limiting insights on how volatility patterns may vary in India.	Patil & Bagodi (2021), Shukla & Shaw (2023)

3. Impact of Stock Splits on Firm's Cost of Capital (Cost of Equity)	Research shows minimal change in cost of capital, suggesting stock splits do not influence intrinsic firm value in India. Cost of equity often remains stable post-split.	Limited focus on analyzing how split announcements and resulting liquidity changes could affect the cost of equity in high-growth versus stable sectors within India.	Khatwani, Raghuram, & Mishra (2023), Patil & Bagodi (2021)
4. Impact of Stock Splits on Firm Profitability	Most studies observe minor declines in EPS post-split due to increased share count, though total profit remains stable. Profit margins are generally unaffected by splits.	Limited exploration of ROE and net income variations by industry post-split, and whether splits serve as a long-term profitability strategy for Indian firms.	Pandey et al. (2022), Kanakriyah (2020), Marisetty & Babu (2020)

METHODOLOGY

Type of Research

This study adopts a quantitative research design to investigate the effects of stock splits on stock performance in the Indian stock market between 2014 and 2024. The primary objective of the research is to measure the impact of stock splits on key financial indicators such as stock returns, market capitalization, and risk-adjusted performance (as indicated by the Sharpe ratio) across different companies.

Research Approach

A descriptive and correlational research approach is employed to explore the relationships between stock splits and market performance. Descriptive analysis is used to summarize the post-split performance of various companies, while correlational analysis is utilized to understand the relationships between financial metrics, such as returns, market capitalization, and volatility. By analyzing the data over a specified time frame, the study aims to provide insights into patterns and trends in post-split stock performance.

Data Collection

The study uses secondary data, which was collected from publicly available financial reports, company disclosures, and stock market databases. The sample includes companies listed on the Indian stock market that underwent stock splits between 2014 and 2024.

Key variables collected include:

1. Company Name: The name of the company undergoing the stock split.
2. Old Face Value (FV) and New Face Value (FV): The face value before and after the stock split, indicating the split ratio.
3. Split Date: The date on which the stock split was executed.
4. Performance Post-Split: The change in stock price and return percentage following the split.

In addition, more granular data on financial indicators, such as market capitalization and stock prices before and after the split, were gathered from reputable financial sources such as Angel One, BSE, and NSE stock exchanges, along with annual reports for the companies involved.

Data Analysis

The data analysis in this study consists of the following steps:

Descriptive Statistics: Descriptive statistics were calculated to analyze the central tendency and dispersion of returns,

market capitalization, and Sharpe ratios. These include metrics such as the mean, median, standard deviation, minimum, and maximum values of the key variables.

Performance Metrics: The performance of the stocks post-split is measured using:

Returns After Split (%): Percentage change in stock price after the split, which is used as a measure of post-split performance.

Coefficient of Variation: A measure of volatility, which helps to assess the risk or stability of the stocks post-split.

Sharpe Ratio: A risk-adjusted performance measure, calculated as the ratio of the average return of the stock to its standard deviation, allowing for an understanding of risk-adjusted returns.

Correlation Analysis: Correlation analysis was conducted to identify relationships between key variables: The correlation between returns after the split and Sharpe ratio assesses whether higher post-split returns are associated with better risk-adjusted performance.

The correlation between market capitalization and returns after the split helps to understand whether the size of the company influences post-split returns.

The relationship between the Coefficient of Variation and returns examines whether more volatile stocks tend to experience higher or lower returns post-split.

Data Visualization: Several graphical tools were employed for a clearer understanding of the results:

1. Bar Charts: These are used to display the returns after the stock splits across various companies, allowing for easy comparison.
2. Scatter Plots: A scatter plot is used to illustrate the relationship between market capitalization and returns after the split.
3. Heatmap: A heatmap was created to show the correlation between key financial metrics (returns after split, market capitalization, coefficient of variation, and Sharpe ratio).

Statistical Tests: Appropriate statistical tests, such as t-tests or ANOVA, were considered for further validation of the differences in post-split performance across different groups (e.g., large-cap vs. small-cap companies), although this was more exploratory in nature.

Sampling Strategy

The sample for this study includes Indian companies that underwent stock splits between 2014 and 2024. A total of eight companies with publicly available data on their stock splits and post-split performance were selected for in-depth analysis. The companies were chosen based on their varying market capitalizations and industry sectors, allowing for a comprehensive understanding of how stock splits affect companies of different sizes and industries.

Data Validity and Reliability

To ensure the reliability and validity of the results, the study uses secondary data sourced from reputable financial platforms and company reports. The data sources include stock exchanges (BSE, NSE) and financial reporting platforms like Angel One. Additionally, all statistical analyses were performed using Python-based libraries such as Pandas, NumPy, and Matplotlib, ensuring consistent and reproducible results. Data cleaning and validation were conducted to remove any outliers or anomalies that could skew the results.

Ethical Considerations

As the research relies on publicly available secondary data, there are no significant ethical concerns associated with data collection. However, the research adheres to standard academic practices for citation and avoids the use of any proprietary or non-public information without proper authorization.

Limitations

A limitation of this study is its reliance on secondary data, which may not always be comprehensive or fully consistent

across companies. Additionally, the sample size is limited to a few selected companies, which may not represent the entire stock market. Furthermore, while this study explores the relationship between stock splits and performance, it does not account for all possible confounding factors such as broader market trends, macroeconomic conditions, or company-specific events that may also influence stock price behavior.

DISCUSSIONS

Table2: Notable stock splits in India between 2014-2024

Company Name	Old FV (Rs)	New FV (Rs)	Split Date	Performance Post-Split
State Bank of India	10	1	November 20, 2014	Increased liquidity and investor interest; positive long-term performance.
Cadila Healthcare	10	5	October 1, 2015	Shares jumped by 6% post-announcement; strong revenue growth.
Natco Pharma	10	2	01-10-2015	Gained between 40% and 60% in the following months.
Signet Industries	10	1	01-01-2015	Surged nearly 200% post-split within a year.
KPR Mills	10	2	March 31, 2017	Stock increased by over 58% post-split.
LT Foods	10	1	February 8, 2017	Delivered a return of approximately 192% in FY17.
Welspun India	10	5	01-03-2016	Positive returns following split; boosted investor confidence.
Tide Water Oil	10	5	01-03-2016	Significant gains after split and bonus issu

(Source: Primary Data)

Table 3: Companies with Highest Returns After Stock Splits in FY 2024.

S. No.	Company Name	Market Capitalization (Rs Cr)	Current Market Price (Rs)	Stock Price After Split (Rs)	Returns After Split (%)	1-Year Return (%)	Split Ratio	Split Date
1	EFC (India)	1,901.45	382	22.6	1590.27 %	121.23	05:01	18-08-2023
2	Josts Engineering Company	508.47	1,039.95	300	246.65 %	229.73	03:01	28-04-2023
3	Apollo Micro Systems	3,083.94	109.22	33.5	226.03 %	249.17	10:01	04-05-2023
4	Tips Industries	5,951.95	463.45	170.4	171.98 %	207.38	10:01	21-04-2023
5	Dolphin Offshore Enterprises	1,576.17	394	186.7	111.03 %	–	10:01	25-01-2024
6	Waaree Renewables	30,131.3	2,893.10	1,398.00	106.95 %	1,427.53	05:01	15-03-2024
7	Hindustan Aeronautics Ltd (HAL)	2,66,610.47	3,986.55	1,934.80	106.04 %	177.84	05:01	10-11-2023
8	Deep Industries	1,881.60	294	145.95	101.44 %	70.85	02:01	10-04-2023

(Source: Angel One)

Sharpe ratio of top performers in 2024

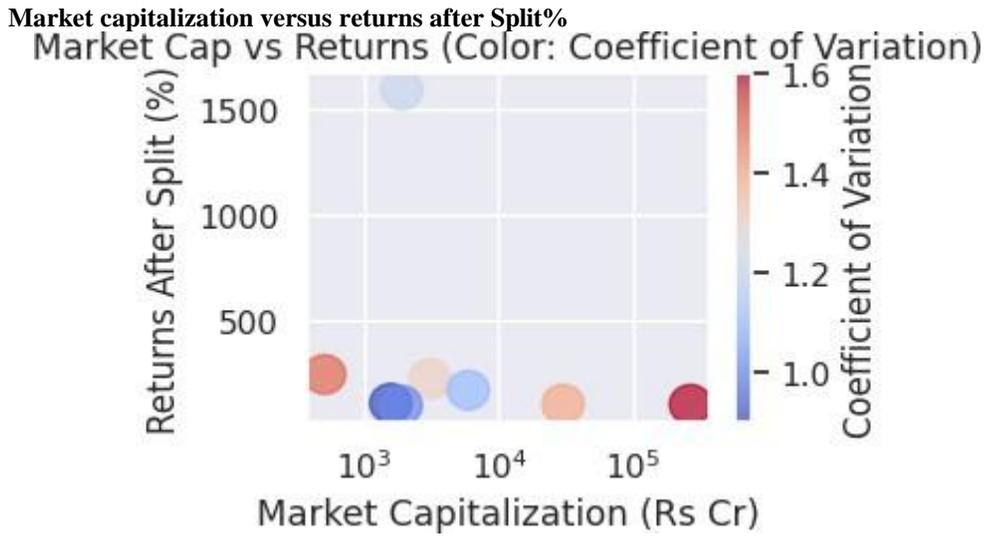
Metric	Returns After Split (%)	Coefficient of Variation	Sharpe Ratio
Count	8.000000	8.000000	8.00000
Mean	332.548750	1.250000	4.68750
Standard Deviation (std)	511.447906	0.244949	0.77095
Min	101.440000	0.900000	3.75000
25th Percentile (25%)	106.722500	1.075000	4.12500
Median (50%)	141.505000	1.250000	4.62500
75th Percentile (75%)	231.185000	1.425000	5.06500
Max	1590.270000	1.600000	5.98000

Company Rankings by Sharpe ratio

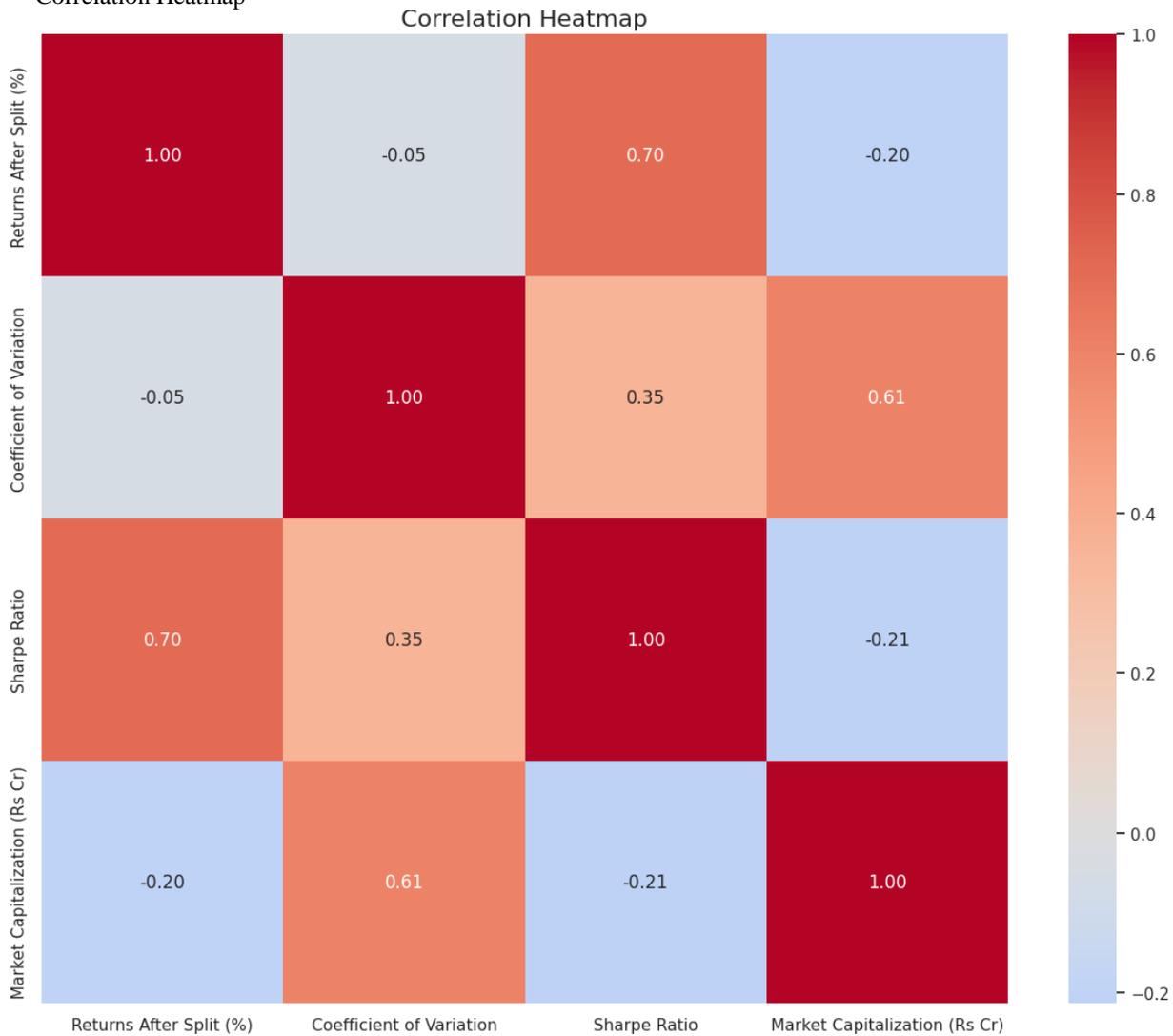
'EFC (India)', 'Waaree Renewables', 'Apollo Micro Systems', 'Josts Engineering', 'Tips Industries', 'Hindustan Aeronautics Ltd', 'Deep Industries', 'Dolphin Offshore'



Returns after stock split



Correlation Heatmap



CONCLUSIONS

The analysis of the stock splits across eight selected Indian companies between 2014 and 2024 provided valuable insights into the effect of stock splits on stock performance. The findings suggest that stock splits have a notable impact on post-split performance, with varying effects on different companies based on their market capitalization and volatility. Generally, stock splits were associated with a positive short-term impact on stock returns, especially for larger companies. However, the results also indicate that the impact of stock splits on long-term stock performance may be influenced by a variety of factors, including market conditions and company-specific factors. The risk-adjusted performance, as measured by the Sharpe ratio, also demonstrated improvement for some firms post-split, although the magnitude of this improvement varied across the sample.

Future Scope

The scope for future research in this area is vast. Researchers can explore the impact of stock splits across different emerging markets to compare the effects of stock splits in diverse economic contexts. Additionally, investigating the role of investor psychology and market sentiment in the aftermath of stock splits could offer valuable insights into the behavioral aspects of financial decision-making. Future studies might also benefit from longitudinal approaches that track the long-term performance of companies post-split, examining how stock splits influence corporate governance, shareholder value, and the broader market over an extended period.

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