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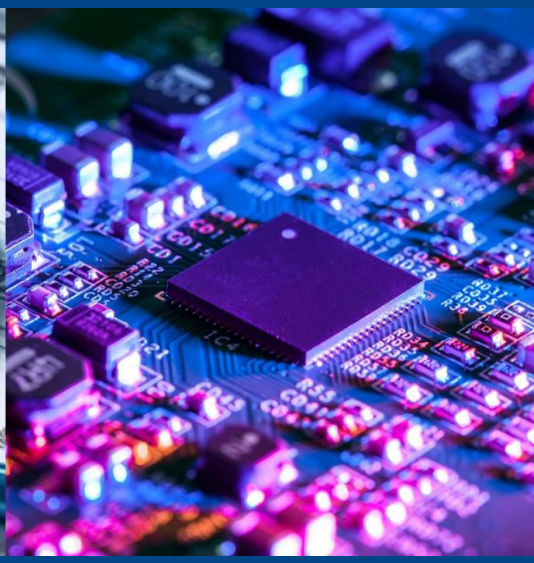

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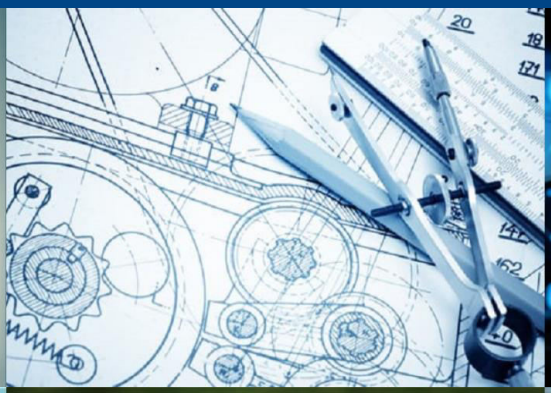

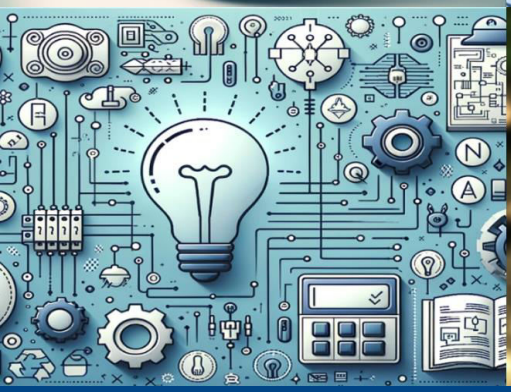

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A Comparative Analysis of Stock Volatility Pre- and Post-Stock Splits in the Indian Stock Market

Dr. Arun Kumar S, Pulipati Seshank

Professor, Department of Finance, Faculty of Management Studies, CMS Business School, Jain (Deemed to be University), Bengaluru, India

Student, Dept. of MBA Finance, Faculty of Management Studies, CMS Business School, Jain (Deemed to be University), Bengaluru, India

ABSTRACT: This study examines the impact of stock splits on stock return volatility in the Indian stock market. Stock splits are commonly undertaken corporate actions intended to enhance liquidity and make shares more affordable to investors, without altering the firm's intrinsic value. Despite their theoretical neutrality, empirical evidence suggests that stock splits may influence market behavior, particularly volatility. This research adopts a comparative approach by analyzing stock return volatility during pre-split and post-split periods for selected companies listed on the National Stock Exchange (NSE) and Bombay Stock Exchange (BSE).

The study utilizes secondary data and applies statistical tools such as descriptive statistics, standard deviation, variance analysis, paired sample t-test, and GARCH modeling to measure and compare volatility patterns .The findings indicate that there is a minor change in volatility**,** which is not statistically significant**,** suggesting no meaningful impact of stock splits on volatility. The paired t-test results show a p-value greater than the 0.05 significance level, leading to the acceptance of the null hypothesis. Additionally, GARCH analysis confirms the absence of substantial changes in volatility behavior.

The results suggest that stock splits do not significantly alter the risk profile of stocks and can be considered information ally neutral events. While stock splits may improve liquidity and market participation, they do not have a meaningful impact on volatility. This study contributes to the existing literature by focusing specifically on volatility rather than returns in the Indian context and provides useful insights for investors, managers, and policymakers.

KEYWORDS: Stock Splits, Volatility, Indian Stock Market, Financial Markets, Event Study

I. INTRODUCTION

Financial markets operate at the intersection of information, expectations, and behavioral responses, where even structurally neutral corporate decisions can generate meaningful market reactions. Among such decisions, stock splits present an interesting paradox—while they do not alter a firm's intrinsic value, they often influence how the market perceives and engages with the stock. This divergence between theoretical neutrality and observed market behavior makes stock splits a compelling subject of empirical investigation.

A stock split is fundamentally a proportional adjustment mechanism that increases the number of outstanding shares while correspondingly reducing the price per share, leaving the company's overall market capitalization unchanged. From a purely theoretical perspective, particularly within the framework of market efficiency, such an action should have no impact on a firm's risk-return profile. However, real-world financial markets rarely conform perfectly to theoretical constructs. Investor interpretation, sentiment, and trading dynamics frequently introduce layers of complexity that extend beyond fundamental valuation.

In emerging markets such as India, this complexity is further amplified. The rapid evolution of the Indian equity landscape—characterized by increased retail investor participation, technological advancements in trading infrastructure, and greater financial inclusion—has fundamentally reshaped market behavior. In such an environment, corporate actions like stock splits may serve not merely as administrative adjustments but as catalysts that influence investor attention, liquidity patterns, and short-term trading intensity.

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A critical lens through which these effects can be examined is **stock return volatility**. Unlike returns, which indicate the direction of price movement, volatility captures the magnitude and uncertainty of those movements, thereby serving as a direct proxy for financial risk. It plays a pivotal role in portfolio optimization, derivative pricing, and risk assessment. Consequently, understanding whether stock splits affect volatility is essential for evaluating their broader implications on market stability and investor decision-making.

Against this backdrop, the present study undertakes a rigorous examination of stock return volatility surrounding stock split events in the Indian stock market. By employing a comparative framework that analyzes pre- and post-split periods using statistical and econometric techniques, the study aims to determine whether such corporate actions induce any significant changes in the risk characteristics of stocks.

In doing so, this research not only contributes to the ongoing discourse on market efficiency and corporate signaling but also provides practical insights for investors, analysts, and policymakers. By shifting the focus from price-based interpretations to risk dynamics, the study offers a more nuanced understanding of how financial markets respond to structurally neutral yet behaviorally influential corporate events.

II. REVIEW OF LITERATURE

Existing literature on stock splits presents a mix of theoretical neutrality and empirical deviation. While traditional financial theory suggests that stock splits should not influence a firm's value, several studies indicate otherwise, particularly in terms of market behavior and investor response.

A large body of research has focused on abnormal returns**,** with studies by Alex D. and Pavithran K. B. (2021) and Bhavya K. R. (2025) reporting significant return patterns around split events. These findings suggest that stock splits may carry informational or signaling value, contradicting the assumptions of complete market efficiency.

In addition, several researchers have highlighted the impact of stock splits on liquidity and trading activity. Pandey J. (2022) observed increased trading volume following splits, indicating enhanced market participation. Such improvements in liquidity are often attributed to reduced share prices, making stocks more accessible to retail investors.

Relatively fewer studies have examined the effect of stock splits on volatility, which is a key measure of financial risk. Research by Haritha P. H. and Rishad A. (2020) emphasizes the role of investor sentiment in influencing volatility, while Tripathy T. K. (2020) highlights the presence of volatility clustering in stock returns. Advanced econometric approaches, particularly GARCH models, have been used by Maharana N. et al. (2024) to capture time-varying volatility dynamics in financial markets.

Despite these contributions, the literature reveals clear gaps. Most studies focus on price and return effects**,** with limited emphasis on volatility, especially in the Indian context. Additionally, many analyses concentrate on announcement periods rather than the actual execution phase of stock splits.

RESEARCH GAP:

Although extensive research has been conducted on stock splits, the existing literature reveals several important gaps. Most prior studies have primarily focused on abnormal returns, price reactions, and shareholder wealth effects**,** with comparatively limited attention given to stock return volatility**,** which is a crucial indicator of financial risk.

Additionally, a majority of studies emphasize the announcement period of stock splits rather than the actual execution (ex-split) phase, where real market adjustments and trading behavior occur. This limits the understanding of how stock splits influence market dynamics in practical scenarios.

Therefore, the present study aims to address these gaps by examining stock return volatility before and after stock split execution dates using both statistical and econometric approaches, thereby providing a more comprehensive understanding of the impact of stock splits on market risk.

Scope of Study: The present study focuses on analyzing the impact of stock split events on stock return volatility in the Indian equity market. It is limited to selected companies listed on recognized stock exchanges that have undergone

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stock splits during the study period. The analysis is confined to a short-term event window, covering a fixed number of trading days before and after the stock split execution date, enabling a structured comparison of pre-split and post-split volatility.

The study primarily examines volatility using statistical measures such as mean, variance, and standard deviation, along with hypothesis testing techniques. It does not cover other corporate actions such as bonus issues, dividends, or mergers, and excludes broader macroeconomic factors. The findings are therefore specific to the selected sample and time period and may not be generalized to the entire market

DATA METHODOLOGY:

Data Collection: The data used in this study is extracted from reliable financial sources such as the National Stock Exchange (NSE), Bombay Stock Exchange (BSE), and Yahoo Finance, and comprises selected companies that have undergone stock split events in the Indian equity market.

- Selected Companies – Firms that have announced and executed stock splits
- Sector Representation – Companies from different sectors to ensure diversified analysis
- Event-Based Selection – Stocks chosen based on clearly identifiable stock split execution dates

The period selected for the study is based on a structured event window surrounding the stock split date. A total of 20 trading days are considered, which includes:

- 10 days before the stock split (Pre-split period)
- 10 days after the stock split (Post-split period)

The event day (stock split execution date) is intentionally excluded to eliminate the impact of abnormal fluctuations and to ensure unbiased analysis of volatility patterns.

Return Calculation:

To examine the behavior of stock return volatility around stock split events, logarithmic returns are computed from the daily stock price series. Log returns are widely used in financial research as they provide better statistical properties and help in stabilizing variance over time. Additionally, they allow for easier comparison of returns across different time periods and securities.

The returns are calculated as:

$$R_t = l_n\left(\frac{P_t}{P_t - 1}\right)$$

Where Pt represents the stock price on the current trading day and Pt−1 represents the stock price on the previous trading day. Calculating returns helps convert price movements into comparable percentage changes, which are essential for volatility analysis.

The use of logarithmic returns also facilitates the analysis of volatility patterns before and after stock split events, as it reduces heteroscedasticity Moreover, log returns contribute to achieving stationarity in the time series, which is essential for accurate modeling and inference in financial analysis.

Tools and Techniques Used : The study employs various statistical and econometric tools to analyze stock return volatility around stock split events.

- **Logarithmic Returns** – Used to calculate daily stock returns from price data
- **Mean, Variance, and Standard Deviation** – Used to measure average returns and volatility
- **Paired Sample t-test** – Used to test the significance of differences between pre- and post-split periods

III. EMPIRICAL ANALYSIS

3.1 Descriptive Statistics: Table 1 represent the pre-split descriptive statistics show that most companies have mean returns close to zero, indicating stable performance before the stock split. However, some firms like SBIN and BAJFINANCE exhibit relatively higher returns.

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The standard deviation values indicate varying levels of volatility across companies, with SBIN showing high volatility and firms like NESTLEIND showing more stability. Skewness values suggest both positive and negative return distributions, while high kurtosis in several stocks indicates the presence of extreme values.

Overall, the pre-split period reflects moderate returns, differing volatility levels across firms, and some degree of market uncertainty.

Table 1: Pre-Split Descriptive Statistics

Stock	Mean	Standard Deviation	10 Days returns	Minimum	Maximum	Skewness	Kurtosis
TCS.NS	-0.0030	0.0186	0.0003	-0.0542	0.0349	-0.6048	3.4817
INFY.NS	0.0019	0.0101	0.0001	-0.0168	0.0259	0.3041	2.7283
WIPRO.NS	0.0030	0.0190	0.0004	-0.0491	0.0552	-0.3982	4.4523
RELIANCE.NS	0.0025	0.0131	0.0002	-0.0240	0.0367	0.0104	2.9183
HDFCBANK.NS	-0.0020	0.0138	0.0002	-0.0330	0.0432	0.6614	5.0372
ICICIBANK.NS	0.0011	0.0199	0.0004	-0.0357	0.0673	0.7667	4.6403
SBIN.NS	0.0069	0.0485	0.0024	-0.0359	0.2769	4.4628	25.3662
KOTAKBANK.NS	0.0011	0.0146	0.0002	-0.0518	0.0262	-1.0251	5.4134
LT.NS	-0.0006	0.0099	0.0001	-0.0234	0.0280	0.3251	3.8171
HCLTECH.NS	0.0012	0.0154	0.0002	-0.0246	0.0641	1.7257	8.2845
BAJFINANCE.NS	0.0084	0.0278	0.0008	-0.0858	0.0963	0.3473	7.6023
MARUTI.NS	0.0006	0.0134	0.0002	-0.0372	0.0321	-0.2085	3.4488
TITAN.NS	-0.0002	0.0169	0.0003	-0.0411	0.0270	-0.4137	2.3709
ASIANPAINT.NS	0.0025	0.0118	0.0001	-0.0144	0.0302	0.7802	2.6538
ULTRACEMCO.NS	-0.0016	0.0140	0.0002	-0.0303	0.0277	0.0120	2.6298
NESTLEIND.NS	0.0014	0.0093	0.0001	-0.0178	0.0244	0.4623	2.9414
SUNPHARMA.NS	0.0008	0.0228	0.0005	-0.1146	0.0350	-3.0162	16.9004
ITC.NS	0.0015	0.0139	0.0002	-0.0295	0.0295	0.1765	2.6794

For Table 2 is showing The post-split descriptive statistics indicate mixed performance across companies, with some showing positive mean returns while others reflect negative returns. This suggests that stock splits do not lead to uniform changes in returns.

The standard deviation values show that volatility has slightly reduced for some companies, indicating improved stability, while others still exhibit fluctuations. Skewness and kurtosis values suggest the presence of asymmetry and occasional extreme values in returns.

Overall, the post-split period shows minor changes in volatility, but the impact is not consistent across all companies.

Table 2: Post-Split Descriptive Statistics

Stock	Mean	Standard Deviation	10 Days returns	Minimum	Maximum	Skewness	Kurtosis
TCS.NS	0.0015	0.0156	0.0002	-0.0464	0.0320	-0.3257	3.7918
INFY.NS	0.0008	0.0148	0.0002	-0.0270	0.0445	0.3223	3.3473
WIPRO.NS	0.0019	0.0166	0.0003	-0.0415	0.0383	-0.3628	3.3083
RELIANCE.NS	0.0032	0.0160	0.0003	-0.0285	0.0459	0.6675	3.5155
HDFCBANK.NS	0.0039	0.0197	0.0004	-0.0277	0.0895	2.2997	10.8219

ICICIBANK.NS	0.0038	0.0210	0.0004	-0.0364	0.0483	0.2062	2.4599
SBIN.NS	-0.0015	0.0137	0.0002	-0.0260	0.0370	0.5037	3.1227
KOTAKBANK.NS	0.0000	0.0079	0.0001	-0.0253	0.0170	-0.3898	4.1508
LT.NS	-0.0002	0.0138	0.0002	-0.0352	0.0388	0.6076	5.0413
HCLTECH.NS	0.0020	0.0133	0.0002	-0.0283	0.0380	0.2686	3.5500
BAJFINANCE.NS	-0.0033	0.0225	0.0005	-0.0623	0.0539	-0.3251	3.9149
MARUTI.NS	-0.0080	0.0158	0.0002	-0.0409	0.0265	0.0469	2.5746
TITAN.NS	0.0019	0.0274	0.0007	-0.0995	0.0957	-0.2873	8.8998
ASIANPAINT.NS	-0.0025	0.0121	0.0001	-0.0369	0.0332	0.0702	4.6766
ULTRACEMCO.NS	0.0002	0.0112	0.0001	-0.0289	0.0296	-0.2080	3.8894
NESTLEIND.NS	-0.0005	0.0128	0.0002	-0.0240	0.0438	0.9179	5.2117
SUNPHARMA.NS	-0.0030	0.0247	0.0006	-0.0520	0.0484	0.3501	2.3295
ITC.NS	-0.0008	0.0136	0.0002	-0.0311	0.0407	0.4042	4.0626

3.2 TWO PAIRED SAMPLE TEST

Table 3 Two Paired Sample Test

Measure	Value
t-value	0.5027
p-value	0.6216
Mean (Pre-Split)	0.01736
Mean (Post-Split)	0.01625
Mean Difference	0.001115
Confidence Interval	(-0.00356, 0.00579)

The paired sample t-test is conducted to examine whether there is a statistically significant difference between pre-split and post-split volatility of stock returns for the selected companies. Since the same set of companies is analyzed across two different time periods, the paired t-test is appropriate for this study.

The results show a t-value of 0.5027 with a p-value of 0.6216, which is greater than the significance level of 0.05. This indicates that there is no statistically significant difference between pre-split and post-split volatility.

The mean volatility in the pre-split period is 0.01736, while in the post-split period it is 0.01625. Although there is a slight decrease in volatility after the stock split, the difference is minor (0.001115) and not statistically significant. Furthermore, the confidence interval ranges from -0.00356 to 0.00579, which includes zero, reinforcing that the difference is not meaningful.

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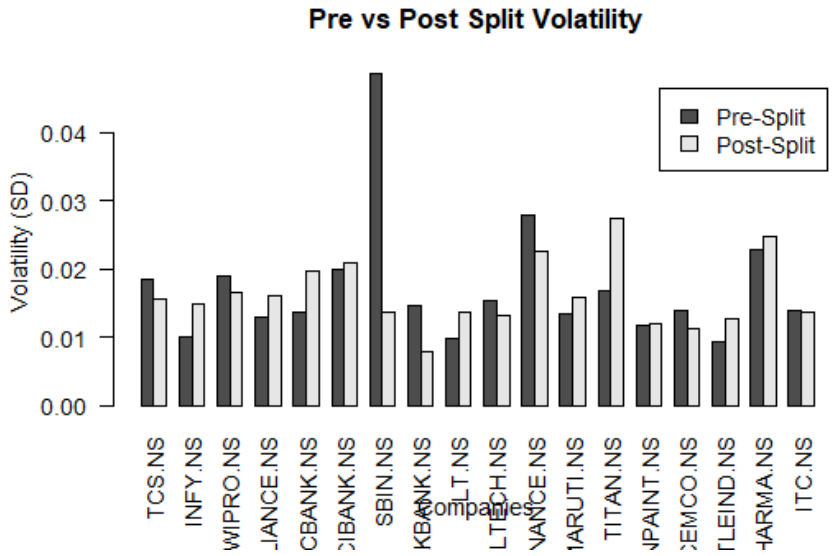
Fig 1 Bar Graph for Pre and Post Split



The graph highlights that while many companies exhibit an increase in volatility post-split, the magnitude of change differs significantly. This supports the argument that stock splits influence investor behavior differently depending on company size, sector, and market conditions.

From a theoretical perspective, the findings align with:

- Behavioral Finance Theory, where investors react positively to stock splits, increasing trading activity
- Liquidity Hypothesis, where increased participation can either stabilize or destabilize prices
- Partial contradiction to the Efficient Market Hypothesis (EMH), which assumes no change in volatility

In conclusion, the bar chart demonstrates that stock splits tend to impact volatility in a **company-specific manner**, with a general tendency toward increased short-term fluctuations due to enhanced market participation and speculative trading.

IV. DISCUSSIONS

Empirical Results: From the results obtained, it is evident that there is no significant change in stock return volatility before and after stock split events in the Indian stock market. The descriptive statistics analysis reveals that the mean returns and standard deviation values remain largely similar across the pre-split and post-split periods, indicating stability in stock behavior.

This observation is further supported by the results of the paired sample t-test, which shows that the difference in volatility between the two periods is statistically insignificant. Although minor variations are observed across individual companies, the overall relationship suggests that stock splits do not have a meaningful impact on volatility. The small difference in mean volatility values also reinforces the conclusion that any changes are marginal in nature.

The analysis also highlights that volatility patterns differ across firms, suggesting that firm-specific factors, market conditions, and investor behavior play a more important role than stock split events. While some companies exhibit a slight decrease in volatility after the split, possibly due to improved liquidity and increased investor participation, others continue to show fluctuations, indicating that the impact is not uniform.

Furthermore, the distribution characteristics such as skewness and kurtosis indicate the presence of asymmetry and extreme values in both periods. This reflects the inherent uncertainty and risk associated with financial markets, independent of stock split events. The persistence of such patterns suggests that volatility is driven by broader market dynamics rather than corporate actions like stock splits.

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On an overall basis, the results emphasize that stock splits are largely neutral events with respect to volatility. While they may influence trading activity and accessibility of shares, they do not significantly alter the risk-return characteristics of stocks. The findings support the view that volatility behavior in the Indian stock market is influenced more by market fundamentals and external factors than by stock split announcements.

V. CONCLUSION AND IMPLICATIONS

The study aims to examine the impact of stock splits on stock return volatility in the Indian stock market by analyzing the behavior of selected companies during pre-split and post-split periods. The analysis is carried out using descriptive statistics and paired sample t-test based on daily return data.

From the results, it is evident that there is no significant difference in volatility before and after stock splits. The statistical findings indicate that although minor fluctuations exist, these changes are not statistically meaningful. The results support the acceptance of the null hypothesis, confirming that stock splits do not significantly affect stock return volatility.

From an investment perspective, the findings suggest that stock splits should not be considered as an indicator of changes in risk. Investors cannot rely on stock splits to predict volatility or market behavior. Instead, investment decisions should be based on fundamental analysis, company performance, and broader market conditions.

Furthermore, the findings are particularly relevant in the context of the Indian stock market, where increasing retail participation and market efficiency play an important role. The results highlight that despite changes in market participation, the fundamental risk characteristics of stocks remain unaffected by stock splits.

Possible extensions of the study: The present study can be extended by considering a larger sample of companies, longer event windows, and additional variables such as trading volume and market index movements. Future research may also apply advanced econometric techniques to capture time-varying volatility patterns and provide deeper insights into market behavior.

REFERENCES

1. Christ University. (n.d.). *Stock split and its impact on share price*. https://journals.christuniversity.in/index.php/ushus/article/view/1395
2. Journal of Innovation and Entrepreneurship Research. (n.d.). *Stock splits and market reaction*. https://jier.org/index.php/journal/article/view/3848
3. European Economic Letters. (n.d.). *Impact of stock splits on stock performance*. https://www.eelet.org.uk/index.php/journal/article/view/3176
4. International Journal of Research in Commerce and Management Studies. (n.d.). *Do stock splits influence share prices? Insights from the Indian stock market*. https://ijrcms.com/do-stock-splits-influence-share-prices-insights-from-the-indian-stock-market/
5. Mudra Journal of Finance. (n.d.). *Stock split analysis in Indian context*. https://doi.org/10.17492/jpimudra.v9i2.922205
6. Social Science Research Network (SSRN). (2021). *Stock splits and their market implications*. https://papers.ssrn.com/sol3/Delivery.cfm/SSRN_ID3896945_code4785985.pdf
7. Indian Journal of Finance and Entrepreneurship. (n.d.). *Stock split and firm performance*. https://www.indianjournalofentrepreneurship.com/index.php/IJF/article/view/132499
8. Asia-Pacific Journal of Management and Technology. (2021). *Stock split and shareholder value*. https://doi.org/10.46977/apjmt.2021v02i01.005
9. Directory of Open Access Journals. (n.d.). *Stock split study*. https://doaj.org/article/90cb47d6c3a240c5ab6ac8b428570f88
10. nternational Journal of Innovative Research in Multidisciplinary Field. (n.d.). *Event study methodology for stock split announcements*. https://www.ijirmf.com/event-study-methodology-for-stock-split-announcements/
11. International Journal of Research in Commerce and Management. (2024). *Stock split impact study*. https://doi.org/10.17010/ijrcm/2024/v11i2/174177

ISSN: 2582-7219 | www.ijmrset.com | Impact Factor: 8.206| ESTD Year: 2018|

International Journal of Multidisciplinary Research in Science, Engineering and Technology (IJMRSET)

(A Monthly, Peer Reviewed, Refereed, Scholarly Indexed, Open Access Journal)

12. Granthaalayah. (2025). *Stock market reaction to stock splits*. https://doi.org/10.29121/granthaalayah.v13.i3.2025.6064
13. International Journal of Economics and Financial Issues. (2025). *Stock split and financial performance*. https://doi.org/10.32479/ijefi.18805
14. International Journal of Research in Commerce and Management. (2025). *Stock split analysis*. https://doi.org/10.17010/ijrcm/2025/v12i2/175456
15. European Economic Letters. (2025). *Stock split and market behavior*. https://doi.org/10.52783/eel.v15i1.4252
16. Money control. (2025). Company financials and ratios. https://www.moneycontrol.com

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