

A Study of Stock Split and Its Impact on Goyal Aluminium Ltd and Jost's Engineering Co.Ltd

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Abstract- This study investigates the effects of stock splits on the financial performance of Goyal Aluminium Ltd and Jost's Engineering Co. Ltd. by analyzing changes in their stock prices and the presence of abnormal returns surrounding the stock split events. The research also explores whether a significant relationship exists between stock prices before and after the split using a one-way ANOVA. By examining these factors, the study aims to provide a comprehensive understanding of how stock splits impact shareholder value and market perception for these two companies. The results will offer valuable insights for investors, financial analysts, and corporate decision-makers.

Key Words: Abnormal Returns, BSC Sensex, Corporate Announcements, Stock Splits.

INTRODUCTION

Stock splits are a corporate action wherein a company increases the number of its outstanding shares by issuing more shares to current shareholders, typically in a specific ratio. While the total market value of the company remains unchanged, the price per share is adjusted downward in proportion to the split ratio, making the shares more affordable and potentially more attractive to a broader range of investors.

This study focuses on the impact of stock splits on the stock prices of two Indian companies: Goyal Aluminium Ltd and Jost's Engineering Co. Ltd. Stock splits can have various implications, including increased liquidity, a broader shareholder base, and potential changes in investor perception. However, the true effect of a stock split on a company's market value and stock performance remains a subject of debate among financial analysts and scholars.

The objectives of this study are threefold: First, to examine the changes in stock prices of Goyal Aluminium Ltd and Jost's Engineering Co. Ltd. following their stock splits. Second, to analyze

abnormal returns surrounding the stock split events to understand their impact on the companies' stock prices. Finally, the study seeks to determine if there is a statistically significant relationship between stock prices before and after the split using a one-way ANOVA.

Through this analysis, the study aims to provide a deeper understanding of how stock splits influence investor behavior and stock performance in the context of the Indian stock market, offering insights for investors, financial professionals, and corporate managers.

Need for the Study:

The study of stock splits and their impact is essential for understanding how such corporate actions influence stock prices and investor behavior, especially in the context of the Indian market. With growing retail investor participation, analyzing the effects of stock splits on companies like Goyal Aluminium Ltd and Jost's Engineering Co. Ltd. can provide valuable insights into market efficiency and investor decision-making. This research also helps corporate managers gauge the potential benefits and risks of stock splits, contributing to the broader academic discussion on this topic, particularly in emerging markets like India

OBJECTIVES

1. To Study the changes in stock prices of Goyal aluminium Ltd and Jost's engineering co.Ltd.
2. To Study abnormal returns and the impact on the stock prices of Goyal aluminium Ltd and Jost's engineering co.Ltd.
3. To study if any Relation exist between stock prices of pre and post stock split by using one - way Anova.

Research Methodology:

This chapter outlines the research methodology used to analyze the impact of stock splits on selected companies listed on the BSE. The study relies on secondary data sourced from Yahoo Finance, ensuring a robust data foundation. The statistical tools employed include standard deviation, average, variation, and one-way ANOVA, which are used to analyze stock price movements and their statistical significance. Data analysis is conducted using MS-Excel, providing a structured and reliable approach to examine the effects of stock splits. This methodology ensures the rigor and validity of the research while acknowledging its limitations.

Limitations:

This study is subject to several limitations. Firstly, it focuses exclusively on two selected companies, which may not fully represent the broader market or provide generalizable results. Additionally, the analysis is constrained to a specific timeframe, covering only six months before the stock split, and may be influenced by market conditions unique to that period. The study is also limited to stocks listed on the BSE, excluding other markets that could offer different insights. Furthermore, the research relies solely on secondary data, sourced specifically from Yahoo Finance, which may restrict the depth of the analysis. These constraints highlight the need for cautious interpretation of the findings and suggest areas for further research.

REVIEW OF LITERATURE:

1. Antunes and Oliveira (2023): In the medium term, the impact of reverse stock splits on stock liquidity remains unclear. The practical implications emphasize the importance of these findings for investors considering investments in firms undergoing reverse stock splits, providing valuable insights into post-action liquidity dynamics. Additionally, the results offer guidance for boards of directors in their decision-making processes. The study's originality stems from its focus on European stocks and its comprehensive analysis of the effects of reverse stock splits on liquidity using various methodologies.

2. Blau et al. (2023): This study examined price movements and daily short selling behavior surrounding reverse stock splits, utilizing a difference-

in-difference identification approach. The findings indicate that the treatment stocks experience notable changes in these aspects.

3. Cox et al. (2022): This research explored retail trading activity in the context of both forward and reverse stock splits. While some theories suggest that stock splits adjust prices to an optimal range, thereby encouraging diversified ownership and sustained participation from retail investors, this study provides further insight into these dynamics.

4. Gupta and Bodla (2022): The stock split strategy is designed to enhance liquidity and accessibility for average investors by reducing the face value of shares and increasing their number through this corporate action. This study, which covers the period from 2005 to 2016 and examines 44 stock split announcements within the Indian Banking and IT sectors, reveals a significant difference in Average Abnormal Returns before and after the announcement of stock splits.

5. KP and Paramashivaiah (2022): This study posits that stock splits are used as a mechanism to reduce the prevailing stock price, making shares more accessible to small investors and attracting a broader investor base. Although stock splits are theoretically not expected to produce abnormal returns, in practice, they often do, aligning with signaling hypothesis theory. Corporate actions like stock splits are typically viewed as cosmetic events that do not directly affect a firm's investments or capital structure, offering a unique opportunity to evaluate their impact on shareholder returns.

6. Li et al. (2023): This research suggests that companies can strategically use stock splits to capture attention and disseminate information, aiming to counteract price distortion caused by investors' anchoring bias towards 52-week highs.

Objective 1: To study the changes in the stock price of Goyal aluminium limited and Jost's engineering Limited.

In this study, secondary data was utilized, with stock prices collected from Yahoo Finance. To analyze the changes in stock prices following the stock split, several key parameters were considered, including average trade volume, risk, return, and the PE ratio. These factors were selected to provide a comprehensive understanding of the stock price dynamics and the impact of the stock split on the selected companies.

1. Average Trade Volume: Trade volume measures the total number of shares or contracts exchanged for a security within a specific period. High trading activity leads to higher trade volumes, while low activity results in lower volumes. Traders use trade volume as a key factor in technical analysis, especially when evaluating market transactions. Significant price movements accompanied by high volumes can indicate strong trading signals and bolster confidence in a security's valuation.

Formula: Average = Sum of observations (before/after)/ Number of observations

Table :1	Volume of trade	
	<i>Pre stock split</i>	<i>Post stock split</i>
Goyal Aluminium Limited	262004.1	140451.3
Jost's Engineers Company Limited	3894.008	6461.84

Interpretation: The average trade volume for Goyal Aluminium Limited decreased from 262,004.1 shares pre-stock split to 140,451.3 shares post-stock split, indicating reduced trading activity. Conversely, Jost's Engineers Company Limited saw an increase in average trade volume from 3,894.008 shares to 6,461.84 shares, suggesting heightened trading activity after the stock split. This shows that the impact of a stock split on trading volume can vary between companies.

2. Stock Return Pre and Post Stock Split:

A financial return, or simply a return, represents the profit or loss generated from an investment over a specific period. Returns can be expressed nominally, showing the change in the dollar value of an investment over time, or as a percentage, calculated by dividing the profit by the initial investment. Returns can also be presented as net outcomes, taking into account any associated fees.

Table:2	Stock Return	
	<i>Pre stock split</i>	<i>Post stock split</i>
Goyal Aluminium Limited	0.002374	-0.03351
Jost's Engineers Company Limited	-0.00438	-0.00211

Interpretation: Post-stock split, Goyal Aluminium Limited's return dropped from a slight positive (0.002374) to a negative (-0.03351), indicating a decline in performance. In contrast, Jost's Engineers

Company Limited showed a slight improvement, with its negative return improving from -0.00438 to -0.00211

3. Systematic risk Pre and Post the stock split.

According to the Financial Industry Regulatory Authority, "The Realities of Investment Risk," risk is often assessed quantitatively by analyzing historical behaviors and outcomes. In finance, standard deviation is a commonly used metric associated with risk. It provides insight into the variability of asset prices in relation to their historical averages over a given period.

Formula = $\sigma = \sqrt{\frac{1}{N} \sum_{i=1}^N (X_i - \mu)^2}$

Beta Values Pre and Post the stock split

Table :3	Systematic Risk	
	Pre- split	Post- split
Goyal Aluminium Limited	0.098075	0.096164
Jost's Engineers Company Limited	8.003206	0.24468

Interpretation: Before the stock split, Goyal Aluminium Limited had a beta of 0.098075, indicating a slight negative correlation with the market. After the split, the beta slightly decreased to 0.096164, suggesting reduced systematic risk and less sensitivity to market movements. In contrast, Jost's Engineers Company Limited had a beta of 8.003206 before the split, showing a strong positive market correlation. After the split, the beta dropped significantly to 0.24468, indicating a major shift in systematic risk, with the stock's returns becoming negatively correlated with the market. In summary, Goyal Aluminium Limited saw a minor reduction in systematic risk post-split, while Jost's Engineers Company Limited experienced a significant change, shifting to a negative market correlation.

P/E ratio Pre and Post the stock split

The (P/E) ratio evaluates a company's stock price in relation to its earnings per share (EPS). Also known as the price or earnings multiple.

Table: 4	PE Ratio	
	Pre- split	Post- split
Goyal Aluminium Limited	285.66	53.87
Jost's Engineers Company Limited	25.87	34.59

Interpretation: Before the stock split, Goyal Aluminium Limited had a PE ratio of 285.66, suggesting strong investor interest. After the split, the PE ratio dropped to 53.87, indicating decreased investor interest. Conversely, Jost's Engineers Company Limited had a PE ratio of 25.87 before the split, reflecting a positive market correlation. After the split, the PE ratio rose significantly to 34.59, indicating increased investor interest. In summary, Goyal Aluminium Limited saw a decline in investor interest post-split, while Jost's Engineers Company Limited experienced a notable increase in investor interest following the split.

Objective 2: To analyze the abnormal return and its impact on the stock prices of Goyal Aluminium Limited and Jost's Engineers Company Limited.

Abnormal Return: Abnormal returns, which may be unusual or suspicious, can indicate irregularities or potential manipulation. It is essential to distinguish abnormal returns from "alpha," or the excess returns achieved through actively managed investments.

Data Source: Secondary data is collected from the Yahoo Finance website.

Tool: Excel is used to apply the CAPM model to calculate abnormal returns.

Formula: $\text{Abnormal Return} = \text{Actual Return} - \text{Expected Return}$.

Abnormal return Pre and Post the stock split

Table: 5	Abnormal return	
	Pre stock split	Post stock split
Goyal Aluminium Limited	54	41070.26

Jost's Engineers Company Limited	6.69833	-1.157
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Interpretation: After the stock split, Goyal Aluminium Limited saw a sharp increase in abnormal returns from 54 to 41,070.26, indicating a strong positive market reaction. In contrast, Jost's Engineers Company Limited's abnormal returns dropped from 6.69833 to -1.157, suggesting a negative market response post-split.

Objective 3: To study if any Relation exist between stock prices and stock split by using one-way Anova

Null hypothesis: There is no relation between the stock split and stock prices.

Alternative hypothesis: There is a relation between the stock split and stock prices.

To justify this objective, we are using one-way Anova One-Way ANOVA, or analysis of variance, assesses the averages of multiple distinct groups to ascertain if there exists statistical proof indicating significant differences among the respective population averages. This statistical method falls under the category of parametric tests.

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Table 6: One Way Anova

Anova: Single Factor

Groups	Count	Sum	Average	Variance
Adj Close	121	2861.66	23.65008	64.58507
40.9	95	1216.57	12.806	51.62367

Table 7: ANOVA

Source of Variation	SS	df	MS	F	P- value	F crit
BetweenGroups	6258.076	1	6258.076	106.2641	1.72E-20	3.88528
Within Groups	12602.83	214	58.89175			
Total	18860.91	215				

JOST ENGINEERING COMPANY LIMITED

Table:8 One-way Anova

Groups	Count	Sum	Average	Variance
199.0648	120	26131.47	217.7622	1444.558
250.151	120	47038.84	391.9903	3514.577

Table :8 Anova

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	1821326	1	1821326	734.5339	1.06E-74	3.880827
Within Groups	590137.1	238	2479.568			
Total	2411463	239				

If the p-value is below 0.05, we reject the null hypothesis; if the p-value is above 0.05, we accept the null hypothesis.

For Goyal Aluminium Limited, the p-value is above 0.05, suggesting a relationship between the stock split and stock prices. Similarly, for Jost's Engineers Company Limited, the p-value is also above 0.05, indicating a relationship between stock prices and the stock split. Therefore, we accept the alternative hypothesis.

In comparing the two companies, both Goyal Aluminium Limited and Jost's Engineers Company Limited demonstrate a relationship between stock splits and stock prices.

Findings:

1. Trading Volume:

Goyal Aluminium Limited: The average trading volume before the stock split was 262,004.1, while after the stock split, it decreased to 140,451.3, reflecting a decline of 46.3%. This decrease suggests a potential reduction in market activity and investor interest.

Jost's Engineers Company Limited: The average trading volume before the stock split was 3,894.008, and it significantly increased to 6,461.84 after the split, representing a 37.9% increase. This increase indicates heightened market activity and growing investor interest.

2. Stock Return:

Goyal Aluminium Limited: The stock return before the stock split was -0.002, and it further decreased to -0.03 after the split, representing a decline of 1400%. This suggests a decrease in the stock price during the analyzed period.

Jost's Engineers Company Limited: The stock return before the stock split was -0.00, and it increased to 0.002 after the split, showing a 150% increase. This indicates an upward movement in the stock price during the analyzed period.

3. Abnormal Return:

Goyal Aluminium Limited: The abnormal return before the stock split was 54, and it increased significantly to 41,070.26 after the split, suggesting that the shares are performing well post-split.

Jost's Engineers Company Limited: The abnormal return before the stock split was 6.69833, and it decreased to -1.15 after the split, indicating that the shares are underperforming post-split.

P-Value: The p-value is greater than 0.05 for both companies, leading to the acceptance of the null hypothesis. This indicates that there is no significant relationship between the pre-stock split prices and post-stock split prices

CONCLUSION

In conclusion, the analysis of stock splits for Goyal Aluminium Limited and Jost's Engineers Company Limited provides valuable insights into trading volume, stock returns, and systematic risk before and after the stock split. The findings demonstrate that stock splits have distinct effects on these companies, making it essential for various stakeholders in the financial market to understand these impacts. The analysis revealed significant changes in trading volume post-split. Goyal Aluminium Limited saw a decrease in average trading volume, while Jost's Engineers Company Limited experienced a notable increase. This suggests that the stock splits had differing effects on market activity and investor interest for these companies. Finance managers and investors should carefully consider these changes to assess market participation levels and the potential implications for liquidity and trading dynamics.

The stock return analysis showed divergent performance for both companies following the stock split. Goyal Aluminium Limited experienced a negative stock return, indicating a decline in stock price, while Jost's Engineers Company Limited had a positive stock return, indicating a price increase. This highlights the importance of considering company-specific factors, industry dynamics, and market

conditions when evaluating the impact of stock splits on performance. Additionally, the PE ratio decreased for Goyal Aluminium Limited but increased for Jost's Engineers Company Limited after the stock split, suggesting varying investor sentiment and willingness to trade the stocks. The abnormal return increased for Goyal Aluminium Limited, while it decreased for Jost's Engineers Company Limited, reflecting differing performance outcomes.

Overall, this study emphasizes the need for a careful evaluation of trading volume, stock returns, and systematic risk before and after stock splits. Finance managers, investors, academicians, and other stakeholders can leverage these insights to make informed decisions, manage risk, and better understand the dynamics surrounding stock splits in the financial market. Further research in this area could deepen our understanding of corporate actions and their implications for market participants.

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