ANALYSING THE IMPACT OF STOCK SPLIT ON EQUITY SHARE BEHAVIOUR OF AVANTI FEEDS LTD. (BSE: 512573)

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Abstract: **Stock split is one of the many available alternatives in hands of the company to regulate the overall dynamics of their equity shares. Stock split is usually used to enhance liquidity and to make the shares more affordable for their share holders, as splitting an existing share would reduce the market price per share in the proportions of the split, but would ensure no change in the existing market capitalization of such shares. As the number of total shares of the company increases, the price per share goes down. The study is an attempt to study the behaviour of the share prices of Avanti feeds Ltd. (BSE code: 512573) before and after the share went through a split.**

Key words: stock split, turnover, shares, volatility, aquaculture

INTRODUCTION:

On November 13th 2015, Avanti Feeds Ltd informed BSE that the Company has fixed applied a stock split for their equity share of Rs. 10/- each into 5 equity shares of Rs. 2/- each. The effective date for such sub division was to be 26th November 2015. The recorded share price of Avanti feeds ltd on 24th November 2015 was Rs. 2640/- which was then readjusted to Rs. 531/- as an open price on 26th November 2015.

Avanti Feeds is the leading manufacturer of Prawn and Fish Feeds and Shrimp Processor and Exporter from India. It started its commercial operations in 1993 under the able leadership of Late Sri Alluri Venkateswara Rao in technical collaboration with Pingtai Enterprise.

It has Four Prawn and a Fish Feed Manufacturing Units, certified ISO 9001:2008, in Kovvur, Vemuluru and Bandapuram in West Godavari District, Andhra Pradesh and Pardi in Valsad District, Gujarat, in India with a capacity of 4,00,000 MT per annum.

The Shrimp Processing and Exports Unit, certified ISO 22000: 2005 is located in Gopalapuram near Ravulapalem, East Godavari District Andhra Pradesh, India and confirms to HACCP, USFDA, EU & BRC Global standards. It is also an ACC Certified for best aquaculture practices.

Aquaculture as a sector has been witnessing increased interest in diversification with the inclusion of high valued species, including medium and minor carps, catfishes, murrels etc. While carp and other finfishes are grown for the domestic market, a large proportion of freshwater prawn production is exported. In contrast, the development of brackish water aquaculture has been confined to a single species, Penaeus monodon, the scientific farming of which began only recently during the early 1990s.

The industry witnessed entry of feed companies and processing houses to take advantage of the growth of aquaculture industry in India. However the number of aquaculture companies listed on the Indian stock exchanges has been very low.

In India, annual fisheries & aquaculture production increased manifolds in the recent past. Globally India now ranks second position, only after china in terms of annual fisheries and aquaculture production in the country. Aquaculture constitutes a major portion of the overall fisheries production, accounting nearly 1/3rd of the total fisheries production in India. Almost all of the production is completely consumed in the domestic market, except shrimps, which are mostly exported to the developed countries all around the world.

Consumers for fisheries products especially shrimps are mainly from the upper middle class. India, with its 1.3 billion inhabitants, is a large country and large regional differences in the aquaculture sector exist. It offers a huge development opportunity in aquaculture to improve food security and nutrition in the country. The growing middle class in the country strongly contributes to such opportunities. The aquaculture production can be divided in three sectors: fresh water aquaculture, brackish water aquaculture and marine aquaculture, which are present in different states across India

An important input factor for shrimp aquaculture is feed. There is a need for high quality feed to increase production. There are Indian feed plants who have established as a major feed provider for the shrimp aquaculture in India. Aquaculture sector on BSE currently consists of companies like Avanti feeds, Waterbase, zeal Aqua, and other. Among all the aquaculture shares, Avanti feeds ltd, currently has a highest market cap amounting to more than Rs. 11,000 Cr.

About stock Split:

Stock split refers to dividing a share based on its face value, there by increasing the total number of shares but with a lower face value. It is one of the common corporate actions; the companies adopt in order to change the number of outstanding shares in the market. The usual split ratio is 2 for 1, which converts the face value of a share into half of the existing face value, which would also result in revision of the market value of the shares on an exchange. It also increases the total number of shares to double of the existing number of shares, thereby keeping the total market value of the shares to be the same. One of the main objective of stock splits is to improve the liquidity of the stock in the market.

LITERATURE REVIEW

In a study entitled 'Stock Splits and Liquidity: The Case of the Nasdaq-100 Index Tracking Stock', Patrick Dennis examined the change in liquidity following a two for one stock split of the Nasdaq 100 Index Tracking Stock. In his study he found that though the post split relative bid ask spread is higher and daily turnover is unchanged, the frequency, share volume and dollar volume of small trades all increased after the split, indicating that the split improved liquidity for small trade-sizes.

'THE EFFECT OF STOCK SPLIT ON SHARE PRICES OF COMPANIES LISTED AT THE NAIROBI SECURITIES EXCHANGE' by BEATRICE AGARA, studied the role of Stock split as a technique of psychological pricing where new prices are more attractive to the new incoming retail investors as well as fulfilling to the existing shareholder. This study used an event study methodology where the effect of stock split on share price was investigated for a period of 181 days in pre and post stock split date.

'Stock split and reverse split- Evidence from India' by Ruzbeh J Bodhanwala studies why managers decide to split and reverse split their companies share and what are the kind of effects they have on the share pricing and liquidity of shares. This focuses on splits and reverse splits between 2006 and 2014. The study reached a conclusion that splitting of shares substantially increases the wealth of shareholders, but no such conclusion can be drawn for reverse splitting.

'Market Reaction to Stock Splits in Large and Liquid Stocks: Evidence from the Indian Stock Market' by Nehal Joshipura investigates market reaction to stock splits using the standard event study methodology. The study uses stock splits in large and liquid stocks in the Indian markets during the years 2001 to 2012. Studies from India on market reaction to stock splits offer mixed results.

'STOCK PRICE AND LIQUIDITY EFFECT OF STOCK SPLIT: EVIDENCE FROM INDIAN STOCK MARKET' a study by Mitesh Patel, Dr. Munjal Dave, Dr. Mayur Shah, examine the reaction of stock market and trading volume with respect to the event stock split announcement by different companies. The results showed that stock split announcement had a negative impact on stock return moreover the volume ratio also witnesses a decrease after the stock split announcement.

Mayank Joshipura, in a paper entitled 'Price and liquidity effects of stock split: An empirical evidence from Indian stock market.' Studies the price and liquidity effect of stock split, since its announcement and its effective day. The study indicated a significant abnormal return and change in liquidity due to stock splits. However with the passage of time, the stock split does not have any positive impact on shareholders wealth but it improves the liquidity of the stock.

OBJECTIVES OF THE STUDY:

- To study the behaviour of share price of Avanti Feeds Ltd. before and after the stock split.

HYPOTHESIS FOR THE STUDY

a) Ho: There is no significant difference between the rate of change in the daily share prices of Avanti feeds ltd, on BSE, before and after the effective stock split

b) Ho: There is no significant difference between the total turnover (Rs.) in the equity shares of Avanti feeds Ltd, on BSE, before and after the effective stock split.

c) Ho: There is no significant difference between the daily volatility in the share prices of Avanti feeds Ltd, On BSE, before and after the effective stock split.

DATA AND ITS SOURCE:

- The study is based on secondary historical data
- The share prices are taken from the website of BSE i.e. www.bseindia.com
- The effective date for stock split for Avanti feeds ltd was 26th November 2015
- The study considers the period upto 6th February 2018. Equal number of trading days before the effective stock split date was considered as a pre-split period.

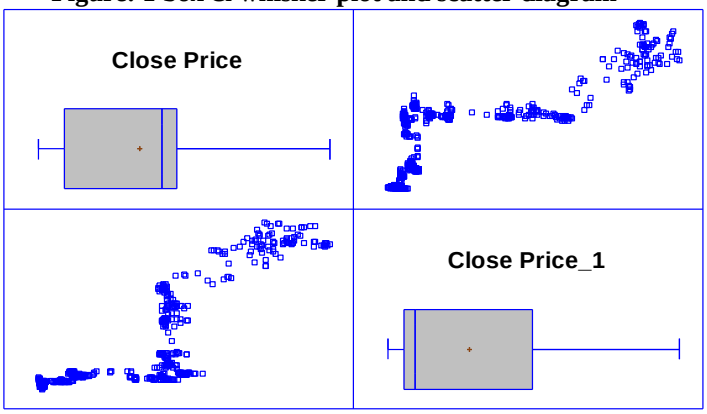
DATA ANALYSIS:

I **A summary of the Closing prices for pre and post split period.**

Table: 1 Summary Statistics

	Close Price(pre)	*Close Price_1(post)*
Count	546	546
Average	1299.55	1061.11
Standard deviation	861.486	799.5
Coeff. of variation	66.2914%	75.3457%
Minimum	206.95	344.8
Maximum	3327.0	2885.05
Range	3120.05	2540.25
Stnd. skewness	4.14854	9.78071
Stnd. kurtosis	-3.3498	-2.44418

Figure: 1 box & whisker plot and scatter diagram

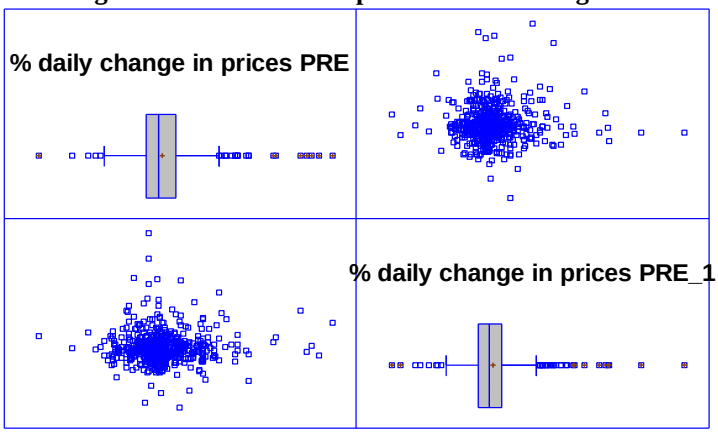


A summary of Daily % Change in share prices for Pre and Post split period

Table: 2 Summary Statistics

	% daily change in prices PRE	*% daily change in prices PRE_1*
Count	545	545
Average	0.00522182	0.00303717
Standard deviation	0.0342872	0.0277534
Coeff. of variation	656.614%	913.79%
Minimum	-0.130713	-0.100913
Maximum	0.192784	0.199989
Range	0.323496	0.300902
Stnd. skewness	12.4562	15.5133
Stnd. kurtosis	25.5635	40.3769

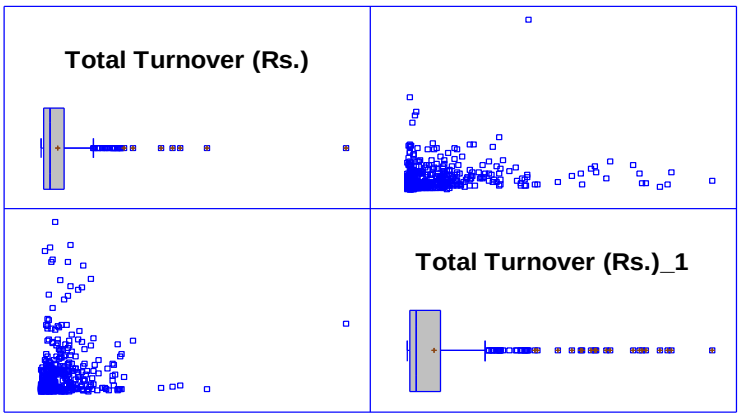
Figure: 2 box & whisker plot and scatter diagram



A summary of total turnover (In Rs.) for Pre and Post split period

Table: 3 Summary Statistics

	Total Turnover (Rs.)	*Total Turnover (Rs.)_1*
Count	546	546
Average	7.29018E6	1.85908E7
Standard deviation	1.02842E7	2.96108E7
Coeff. of variation	141.07%	159.277%
Minimum	105559.	373252.
Maximum	1.30717E8	2.08963E8
Range	1.30612E8	2.0859E8
Stnd. skewness	46.2565	30.718
Stnd. kurtosis	204.157	58.6121

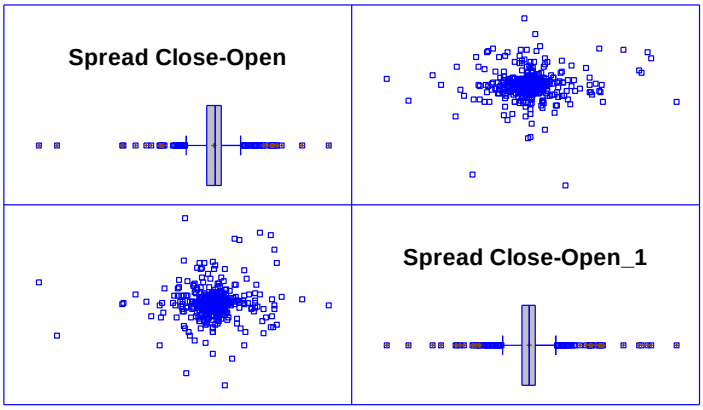


A summary of Daily spread for Pre and Post split period

Table: 4 Summary Statistics

	Spread Close-Open	*Spread Close-Open_1*
Count	546	546
Average	-6.33608	-2.56209
Standard deviation	50.0593	34.8277
Coeff. of variation	-790.067%	-1359.35%
Minimum	-398.5	-203.65
Maximum	250.5	204.35
Range	649.0	408.0
Stnd. skewness	-11.6938	5.34755
Stnd. kurtosis	66.9162	45.3981

Figure: 4 box & whisker plot and scatter diagram



II

RATE OF CHANGE %

Two Sample Comparison - PRE & POST

Sample 1: PRE
Sample 2: POST

Sample 1: 545 values ranging from -0.130713 to 0.192784
Sample 2: 545 values ranging from -0.100913 to 0.199989

Comparison of Means

95.0% confidence interval for mean of PRE: 0.00522182 +/- 0.00288503 [0.00233679, 0.00810684]
95.0% confidence interval for mean of POST: 0.00303717 +/- 0.00233525 [0.000701919, 0.00537243]

95.0% confidence interval for the difference between the means
Assuming equal variances: 0.00218464 +/- 0.00370345 [-0.00151881, 0.00588809]

t test to compare means

Null hypothesis: mean1 = mean2
Alt. hypothesis: mean1 NE mean2

Assuming equal variances: t = 1.15617 P-value = 0.247609

Do not reject the null hypothesis for alpha = 0.05.

Table: 5 Comparison of Standard Deviations

	PRE	*POST*
Standard deviation	0.0342872	0.0277534
Variance	0.00117561	0.00077025
Df	544	544

Ratio of Variances = 1.52627

95.0% Confidence Intervals
Standard deviation of PRE: [0.0323653, 0.0364536]
Standard deviation of POST: [0.0261978, 0.0295069]
Ratio of Variances: [1.28993, 1.80592]

F-test to Compare Standard Deviations

Null hypothesis: sigma1 = sigma2
Alt. hypothesis: sigma1 NE sigma2

F = 1.52627 P-value = 0.00

Reject the null hypothesis for alpha = 0.05.

Two Sample Comparison - Total Turnover (Rs.) & Total Turnover (Rs.)_1

Sample 1: Total Turnover (Rs.)
Sample 2: Total Turnover (Rs.)_1

Sample 1: 546 values ranging from 105559. to 1.30717E8
Sample 2: 546 values ranging from 373252. to 2.08963E8

Comparison of Means

95.0% confidence interval for mean of Total Turnover (Rs.): 7.29018E6 +/- 864549. [6.42563E6, 8.15473E6]
95.0% confidence interval for mean of Total Turnover (Rs.)_1: 1.85908E7 +/- 2.48925E6 [1.61015E7, 2.10801E7]

95.0% confidence interval for the difference between the means
Assuming equal variances: -1.13006E7 +/- 2.62926E6 [-1.39299E7, -8.67136E6]

t test to compare means

Null hypothesis: mean1 = mean2
Alt. hypothesis: mean1 NE mean2

Assuming equal variances: t = -8.42399 P-value = 0

Reject the null hypothesis for alpha = 0.05.

Table: 6 Comparison of Standard Deviations

	Total Turnover (Rs.)	*Total Turnover (Rs.)_1*
Standard deviation	1.02842E7	2.96108E7
Variance	1.05765E14	8.76801E14
Df	545	545

Ratio of Variances = 0.120626

95.0% Confidence Intervals
Standard deviation of Total Turnover (Rs.): [9.70828E6, 1.09334E7]
Standard deviation of Total Turnover (Rs.)_1: [2.79525E7, 3.14799E7]

Ratio of Variances: [0.101963, 0.142706]

F-test to Compare Standard Deviations
Null hypothesis: sigma1 = sigma2
Alt. hypothesis: sigma1 NE sigma2

F = 0.120626 P-value = 0

Reject the null hypothesis for alpha = 0.05.

Two Sample Comparison - Spread Close-Open & Spread Close-Open_1

Sample 1: Spread Close-Open
Sample 2: Spread Close-Open_1

Sample 1: 546 values ranging from -398.5 to 250.5
Sample 2: 546 values ranging from -203.65 to 204.35

Comparison of Means
95.0% confidence interval for mean of Spread Close-Open: -6.33608 +/- 4.20826 [-10.5443, -2.12782]
95.0% confidence interval for mean of Spread Close-Open_1: -2.56209 +/- 2.92781 [-5.4899, 0.365726]

95.0% confidence interval for the difference between the means
Assuming equal variances: -3.77399 +/- 5.11517 [-8.88916, 1.34118]

t test to compare means
Null hypothesis: mean1 = mean2
Alt. hypothesis: mean1 NE mean2

Assuming equal variances: t = -1.44607 P-value = 0.148156

Do not reject the null hypothesis for alpha = 0.05.

Table: 7 Comparison of Standard Deviations

	Spread Close-Open	*Spread Close-Open_1*
Standard deviation	50.0593	34.8277
Variance	2505.93	1212.97
Df	545	545

Ratio of Variances = 2.06594

95.0% Confidence Intervals
Standard deviation of Spread Close-Open: [47.2558, 53.2191]
Standard deviation of Spread Close-Open_1: [32.8773, 37.0261]

Ratio of Variances: [1.7463, 2.44409]

F-test to Compare Standard Deviations
Null hypothesis: sigma1 = sigma2
Alt. hypothesis: sigma1 NE sigma2

F = 2.06594 P-value = 0

Reject the null hypothesis for alpha = 0.05.

FINDINGS:

The study considers for parameters for studying the price behaviour of Avanti feeds ltd pre and post stock split announcement. Following are the parameters:

- Closing price of share of Avanti feeds ltd on BSE.
- Daily percentage change in share prices of Avanti feeds ltd
- Total turnover in terms of value (Rs.) of Avanti feeds Ltd on BSE
- Daily spread (high price – low price) of share prices of Avanti feeds ltd on BSE.

The study considers 546 daily price information each for pre split period and post split period. Pre split period witnessed a minimum daily closing price of Rs. 206.95 as against a post split daily closing price of Rs. 344.80, indicating a significant rise in the minimum share price observed for Avanti feeds ltd. on the other hand the maximum level achieved by the shares in pre and post period were Rs. 3327 and Rs. 2885.05 respectively.

Daily percentage change in the share prices of Avanti feeds ltd, saw a largest drop upto an extent of -13.07% in the pre split period as compared to -10.09% in the post split period. The largest single day gain in both the period were observed to be relatively similar at 19.27% and 19.99% for the pre and post split period respectively.

The total turnover in terms of value for the shares of Avanti feeds ltd, showed a big positive change with respect to the stock split decision. The minimum total daily turnover experienced an over 3 times rise in the post split period as compared to pre split. Similarly the maximum turnover also increased by nearly 2 times in the post split period.

Daily spread calculates the daily volatility range during a single trading session. This range is obtained by getting the difference between the highest price achieved by the share on a given day and its lowest price on the same day. The study shows a significant reduction in the range of the daily spread in the post split period both in terms of the minimum and maximum range. It signifies that the stock split has brought in more stability in the share of Avanti feeds ltd.

Stock split is seen as a tool to effectively manage the market price of the shares, ensuring it does not reach a level which makes it beyond the reach of the common investors. However it must also be ensured that stock split announcement should not detoriate the fundamental strengths of the stock.

Following below are the findings for the hypothesis framed for this study.

Ho	Result	ACCEPT / REJECT Ho
There is no significant difference between the rate of change in the daily share prices of Avanti feeds ltd, on BSE, before and after the effective stock split	**Comparison of Means** t = 1.15617 P-value = 0.247609	**Accept (as p > 0.05)**
	Comparison of Standard Deviations F = 1.52627 P-value = 0.00	**Reject (as p < 0.05)**
There is no significant difference between the total turnover (Rs.) in the equity shares of Avanti feeds Ltd, on BSE, before and after the effective stock split	**Comparison of Means** t = -8.42399 P-value = 0.00	**Reject (as p < 0.05)**
	Comparison of Standard Deviations F = 0.120626 P-value = 0.00	**Reject (as p < 0.05)**
There is no significant difference between the daily volatility in the share prices of Avanti feeds Ltd, On BSE, before and after the effective stock split.	**Comparison of Means** t = -1.44607 P-value = 0.148156	**Accept (as p > 0.05)**
	Comparison of Standard Deviations F = 2.06594 P-value = 0.00	**Reject (as p < 0.05)**

CONCLUSION

A stock split directly affects the market price of a share. However the impact of stock splits must be observed in long run to estimate the true behaviour of the share price in context to the stock split decision. In case of Avanti feeds ltd, stock split of 2 for 1 was carried out, with regards to which the above study was undertaken to understand the behaviour of share prices post stock split. Parameters like the closing price of the stock, daily percentage change in share prices, total turnover, and daily spread in share prices were studied.

Stock split is seen as a tool to effectively manage the market price of the shares, ensuring it does not reach a level which makes it beyond the reach of the common investors. However it must also be ensured that stock split announcement should not detoriate the fundamental strengths of the stock.

From the results of the statistical tests applied on the share prices of pre and post split periods, it was found that there were no significant differences in the rate of change in daily share prices as well as the daily volatility in the share prices of Avanti feeds ltd. however in terms of the total turnover in terms of value, the null hypothesis was rejected, signifying that there was a significant difference in the pre and post split period.

The total turnover of Avanti feeds ltd, after the announcement of stock split has recorded an overall increase thereby exhibiting a positive impact of stock splits on the share prices of Avanti feeds ltd.

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