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"Impact Of Reverse Stock Split Announcements Of Bse Listed Companies On Stock Returns And Trading Volume"

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Abstract:

Corporate actions of companies listed in stock market plays a major role in fluctuations of share prices. As a part of it companies announces two types of stock splits such are Forward stock split and Reverse stock split. Generally investors perceive stock split announcements in a positive way. Hence, it is interesting area for researchers. Thus, here we tried to study the impact of reverse stock splits on stock returns and trading volume with reference to cumulative abnormal returns (CAR) and cumulative average abnormal returns (CAAR) and changes in trading volume by selecting 30 reverse stock splits announced by companies listed in Bombay Stock Exchange during the period of 2015 to 2022.

This is a quantitative research and purposive sampling method used. The source of data used in this research is secondary data obtained from BSE, CMIE Prowess database, Moneycontrol.com and Yahoo finance. The Single factor Market model, Event study methodology, Paired sample t-test used for analysis with the help of SPSS and MS Excel. An Event window of 61(t-30 to t+30) days and Estimation window period of 252 days prior to reverse stock split announcements used to analyse stock returns and changes in trading volume. The findings of the study reveal that reverse stock splits resulted positive returns on stocks and significantly impacts on trading volume of stocks.

Keywords: Corporate actions, Stock splits, Reverse stock split, Stock returns, Trading volume, Event window, Single factor market model.

1. Introduction:

Reverse stock split is a corporate announcement relating to reduction of outstanding number of shares by increasing face value of stock price without making any changes in stocks market capitalization.

Reverse stock split is a technical operation it has no effect on firms nominal value so it is important to understand the reasons for announcement by management. There are various reasons for it such are by increase stock price and place stock in a attractive price range for investors, to come out from the name of penny stock, to meet requirements to stock exchange for avoid problem of delisting, to decrease volatility and number of shareholders of firm (Francisco Antunes, 2023).

Announcement of reverse stock splits is not a common like forward splits and more attention was given to reverse splits compare to forward splits in previous research. West et al (2020) mentioned in their study that usually market reacts positively for forward splits and negatively for reverse splits. Hence management has to take a decision of reverse stock splits carefully to avoid negative reaction for stock prices.

Forward stock splits will considered as good news for investors and typically reverse stock splits viewed as negative signals (Frank W Bacon and Kate M Spradlin, 2019). In the view of investors forward splits considered as indicators for growth and ensure raise in prices of stock and opposite in reverse stock splits. But stock prices react differently for both splits.

Reverse stock split is a less popular corporate action as compare to forward stock splits (Edwin Hendra et al, 2019), reverse stock split is a cosmetic decision by reducing outstanding number of shares with higher share prices. It should not affect on the market capitalization of the firm and future cash flows. The available literature discussed forward splits across periods but reverse splits have not concentrated by academic community since from the first classic study by Fama et al 1969.

Many of the previous studies showed negative market reactions in market price of stock for reverse stock splits and in general investors and public considers its as an unfavorable decision of the firm so that management of companies has consider various aspects of stock to decide about reverse splits.

Signaling hypothesis, Optimum trading range hypothesis and Liquidity hypothesis explains the how information of stock split announcements conveys and how market reacts for the same. Signaling hypothesis conveys positive prospects of firm, optimum trading range hypothesis pushes stock prices preferable to investors and liquidity hypothesis increases the volume of trading stocks in market (Edwin Hendra et al, 2019).

The idea behind the announcements of reverse stock splits is to bring share prices to higher range and reduce number of shares. Final result should increase price and reduce volume of trading (Rubez J Bodhanawala, 2016).

This study analyse the impact of reverse stock split announcements on stock returns and changes trading volume of BSE listed companies.

2. Review of Literature:

Francisco Antunes (2023) analyzed the reverse stock splits effects on the liquidity of European stocks by considering 35 reverse stock splits of 30 firms covered in STOXX Europe 600 index from 2015 to 2019. Short term window for 1 month and medium term window for 6 months used and Turnover ratio used to measure liquidity of stocks. Researcher founds that reverse stock splits increases firms liquidity of stock in short term but not clear conclusion on effect of reverse splits on liquidity of stock in medium term analysis.

Dr.Prabhakar U Rane (2022) in the study titled "Implications of stock splits in India" discussed theoretical framework- concept, types, reasons & stages in announcement and guidelines for stock splits in India. He concluded that stock splits effects volume of trading for short period of time and do not ensure abnormal returns after announcement. Companies should not split their stocks frequently to manipulate share prices and confuse market in India.

Maya Yuliana et al (2022) analyzed the effect of stock prices, liquidity and trading volume on stock splits using regression model by considering 41 companies listed in IDX from 2015 to 2020. Stock prices, liquidity partially significant affects positively on stock splits and trading volume has no significant negative effect on stock spslits.

Radha Vyas (2021) studied the impact of stock splits on stock performance in India by calculating CAR and CAAR of 10 stock splits listed in BSE in 2021 using Market model and event window for 81 days with an estimation window of 30 days. Researcher concluded that there is no significant impact of stock splits on CAR and CAAR.

Three expected return models- Market model, Market adjusted model and Mean adjusted model used for analyze AAR and CAAR on event day of bonus issues and stock splits in Indian stock market. Stock split events results abnormal returns on event day similarly in all models but it's varied in sample classifications (Nagendra Marishetty et al, 2020).

West et al (2020) concludes that market usually reacts significantly positive for forward stock splits and reacts negatively for announcement of reverse stock splits.

Frank W Bacon and Kate M Spradlin (2019) used Risk-Adjusted event study method to test affect of stock split announcements on stock prices considering 50 NYSE/NASDAQ splits from 2012 to 2018 and they suggested that investors not able to make typical returns on stock split announcements and supports semi-strong form of efficiency. Investors react differently based on nature of stock splits.

Stock return behaviour in prior and after announcements of reverse stock splits examined by Edwin Hendra et al (2019) founds positive abnormal returns before announcement and it declines to negative in post period. They strongly agreed that there is a insider trading activities exist in Indonesian stock market and reverse stock splits event follows the prediction of optimum trading range hypothesis.

The various motivations behind announcement of reverse stock splits examined for different price levels of stock and identified that avoid the problem of delisting from stock exchange and liquidity enhancement are considered as main motives for reverse split (Fredrick and Mavis Adjei, 2017).

Ruzbeh J Bodhanawala (2016) highlighted the reasons why management decide to split and reverse split companies shares and studied their effect on stock prices and liquidity. Researcher opines that stock splits increases wealth of shareholders substantially but no such happening in reverse stock splits.

3. Reverse Stock Split Announcements in India:

Table-1: Details of Reverse Stock Splits announced companies listed in India

Year	No of Reverse stock splits	Companies listed only in BSE	Companied in both BSE and NSE
2011	10	6	4
2012	10	7	3
2013	6	5	1
2014	6	5	1
2015	7	6	1
2016	10	9	1
2017	21	21	0
2018	7	6	1
2019	4	4	0
2020	2	2	0
2021	5	5	0
2022	1	1	0
Total	89	77	12

Source: BSE and NSE, CMIE Prowess and Moneycontrol.com.

Figure-1: Details of Reverse Stock Splits announced companies listed in India from 2011 to 2022.

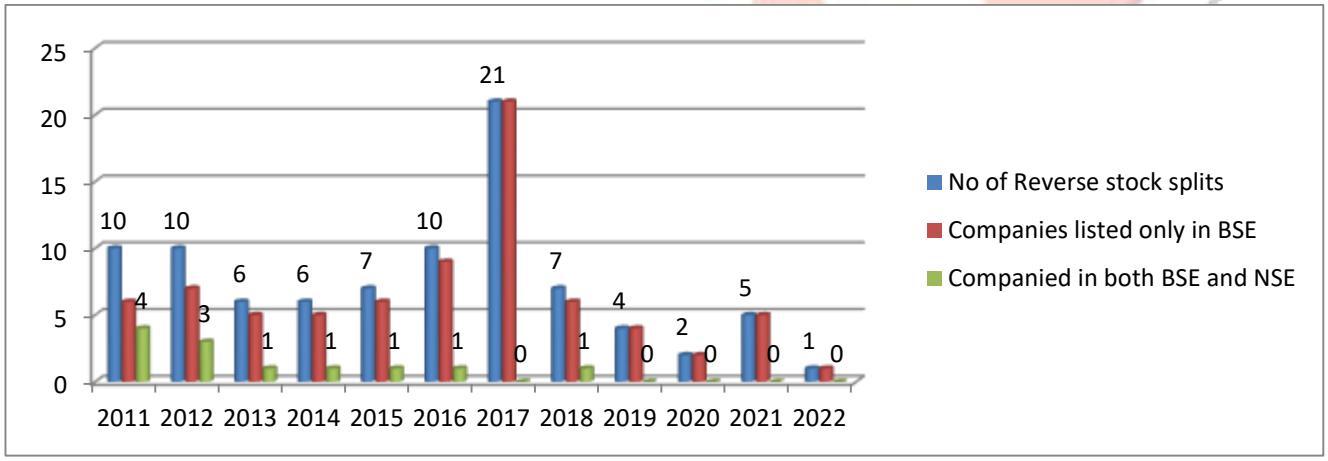


Table-1 and Figure-1 shows the details of reverse stock splits announced by companies listed in India. Majority of the reverse splits (86.51%) announced by companies listed only in Bombay stock exchange and 12 splits announced by companies listed in both BSE and NSE. From the above it is clear that companies listed NSE is giving less preference for reverse splits.

4. Methodology and Design:

4.1 Objectives of the study

1. To analyse the impact of reverse stock split announcements on stock returns.
2. To examine the impact of reverse stock split announcements on trading volume.
3. To test the significance of CAR, CAAR, CATV and CAATV of BSE listed companies.

4.2 Hypotheses

H1: There is no significant impact of reverse stock split announcements on cumulative abnormal returns (CAR) of selected companies (H0: CAR=0, HA: CAR≠0)

H2: There is no significant impact on trading volume around the announcement of reverse splits.

H3: Cumulative abnormal returns (CAAR) and trading volume (CAATV) significantly different from zero.

4.3 Sample

This study's sample consists of companies that announced reverse stock splits among listed in BSE during the period 2015 to 2022. Companies which are not trading frequently are eliminated. 30 companies have announced reverse stock splits during the study period considered and selected as sample. In Table 2 we present the number of reverse stock splits firms that performed in the sample period selected for study and it is possible to verify that 2016 and 2017 was the years in which more reverse stock splits were announced.

Table 2: Year wise sample reverse stock splits

Year	No of Reverse splits	Sample %
2015	04	13%
2016	07	23%
2017	08	27%
2018	04	13%
2019	02	7%
2020	01	3.5%
2021	03	10%
2022	01	3.5%
Total	30	100%

Source: Authors elaboration

Table 3: Reverse splits by split factor

Split Factor	No of Reverse splits	Sample %
1:10	21	70%
2:10	05	17%
5:10	02	7%
10:100	01	3.5%
10:1000	01	3.5%
Total	30	100%

In Table 3 we present the split factors of the reverse stock splits in the sample. It is possible to observe that the split factors concentrate on two factors: [1:10], representing 70% of the sample and [2:10] representing 17% of the sample.

4.4 Data Collection

Announcement of reverse stock splits information collected from CMIE prowess database and Money control.com. Data relating to adjusted closing stock price, adjusted closing index price, stock and index trading volume obtained from BSE website and Yahoo finance.

4.5 Event Study

The present study uses the Event study methodology, a standard methodology which is proposed by Fama et al., (1969) to examine the presence of abnormal returns around the announcement of event. Single factor Market model is used to calculate the abnormal returns and changes in trading volume of stocks. The S & P BSE 500 is taken as the proxy for the market index. The daily adjusted closing prices and trading volume are considered for Event window 61 trading days, 30 days prior and 30 days post to event. For using market model 61 days event window, t-30 to t+30, where t0 is the split announcement date is selected. For determining estimation period 252 trading days are chosen which end 30 days before announcement so as to avoid the any effect of information leakage on stock prices and trading volume.

4.6 Plan of Analysis

Event study methodology and parametric test used to perform statistical analysis. It is performed using the SPSS and MS Excel. The objective of event studies is to analyze the values of variables prior and post announcement of an event, the most suitable parametric test is t-students test for paired samples which allows the comparing mean values.

For analysis of the impact of reverse stock split announcements on stock performance, the CAR, CATV, CAAR and CAATV around the announcement date of reverse stock splits are calculated and t-test was applied to study impact of reverse stock split announcements.

5. Analysis and Results:

Table-4: AARs and CAARs for 61-Days Event Window

Event Window	AAR	t Value	CAAR	t Value
-30	-0.054	-0.220	-0.054	-0.220
-29	0.438	3.125*	0.385	1.939***
-28	-0.056	-0.315	0.328	1.065
-27	0.065	0.368	0.393	1.119
-26	0.212	1.126	0.605	1.438
-25	0.079	0.317	0.684	1.122
-24	0.098	0.517	0.782	1.560
-23	0.267	1.305	1.049	1.813***
-22	0.167	0.838	1.215	2.037**
-21	-0.229	-1.346	0.986	1.831***
-20	-0.165	-1.255	0.821	1.885***
-19	-0.202	-1.194	0.619	1.055
-18	-0.239	-1.191	0.380	0.525
-17	0.078	0.475	0.458	0.746
-16	-0.102	-0.621	0.356	0.557
-15	0.043	0.228	0.399	0.531
-14	0.157	0.860	0.556	0.737

Table-5: AATV and CAATV for 61-Days Event Window

Event Window	AATV	t Value	CAATV	t Value
-30	-0.100	-2.404**	-0.100	-2.404**
-29	-0.157	-6.140*	-0.257	-7.107*
-28	-0.016	-0.131	-0.272	-1.316
-27	0.031	0.240	-0.241	-0.925
-26	0.072	0.875	-0.169	-0.923
-25	0.050	0.257	-0.120	-0.251
-24	0.117	0.630	-0.002	-0.005
-23	-0.062	-0.932	-0.064	-0.342
-22	0.199	0.814	0.135	0.184
-21	1.698	0.938	1.833	0.320
-20	-0.115	-2.333**	1.718	10.469*
-19	-0.138	-2.739**	1.580	9.065*
-18	0.212	0.937	1.792	2.201**
-17	0.660	0.957	2.452	0.949
-16	-0.041	-0.447	2.412	6.824*
-15	-0.079	-1.840***	2.333	13.655*
-14	-0.115	-4.514*	2.218	21.046*

-13	-0.084	-0.501	0.473	0.667
-12	0.088	0.556	0.561	0.812
-11	0.064	0.383	0.625	0.834
-10	0.224	1.174	0.849	0.970
-9	0.017	0.093	0.866	0.990
-8	0.025	0.190	0.891	1.407
-7	0.334	2.340**	1.226	1.751***
-6	0.306	1.800***	1.532	1.803***
-5	0.155	0.946	1.687	2.020**
-4	0.192	1.156	1.878	2.180**
-3	0.067	0.467	1.945	2.558**
-2	0.347	2.188**	2.293	2.681*
-1	-0.495	-2.416**	1.798	1.603
0	0.093	0.471	1.891	1.725***
1	0.402	1.250	2.292	1.261
2	0.627	2.142**	2.919	1.737***
3	0.211	0.913	3.130	2.327**
4	-0.317	-1.338	2.813	2.007**
5	0.146	0.568	2.959	1.915***
6	0.121	0.520	3.080	2.177**
7	-0.410	-1.864***	2.670	1.969**
8	-0.416	-1.931***	2.254	1.675***
9	0.036	0.178	2.290	1.770***
10	-0.103	-0.604	2.187	2.002**
11	-0.167	-0.894	2.020	1.667***
12	-0.123	-0.728	1.897	1.712***
13	0.696	0.882	2.593	0.496
14	-0.121	-0.770	2.472	2.352**
15	-0.259	-1.178	2.213	1.483
16	-0.059	-0.266	2.154	1.415
17	-0.546	-2.867*	1.608	1.219
18	-0.122	-0.576	1.486	1.000
19	-0.088	-0.367	1.398	0.828
20	-0.383	-1.783***	1.015	0.662
21	-0.114	-0.453	0.901	0.496
22	-0.363	-1.173	0.538	0.239
23	-0.349	-1.593	0.189	0.118
24	-0.479	-2.019**	-0.289	-0.165
25	-0.145	-0.548	-0.435	-0.219
26	-0.035	-0.169	-0.470	-0.296
27	-0.169	-0.726	-0.639	-0.360
28	-0.326	-1.431	-0.965	-0.552
29	-0.214	-1.023	-1.179	-0.727
30	-0.343	-1.993**	-1.522	-1.132

-13	0.064	0.469	2.281	3.963*
-12	-0.105	-1.908***	2.176	9.065*
-11	-0.142	-5.725*	2.034	18.351*
-10	-0.022	-0.278	2.012	5.454*
-9	0.193	0.618	2.205	1.505
-8	2.895	0.949	5.100	0.349
-7	-0.069	-1.615	5.031	23.949*
-6	-0.147	-4.680*	4.884	31.199*
-5	-0.104	-2.564*	4.780	22.997*
-4	-0.055	-0.839	4.724	13.750*
-3	-0.087	-1.185	4.637	11.885*
-2	-0.102	-2.388**	4.535	19.713*
-1	0.053	0.407	4.588	6.459*
0	0.004	0.028	4.592	5.801*
1	0.159	0.964	4.751	5.078*
2	-0.020	-0.277	4.731	11.578*
3	-0.089	-1.566	4.642	13.982*
4	0.293	0.773	4.935	2.203**
5	0.244	1.524	5.179	5.386*
6	-0.033	-0.223	5.147	5.764*
7	0.791	1.202	5.938	1.464
8	-0.172	-6.436*	5.765	34.469*
9	0.097	0.430	5.863	4.096*
10	-0.027	-0.209	5.836	7.064*
11	0.248	0.652	6.084	2.464**
12	-0.174	-4.825*	5.910	25.039*
13	0.650	1.081	6.560	1.646***
14	-0.129	-4.848*	6.431	36.044*
15	0.275	0.991	6.705	3.570*
16	-0.179	-6.028*	6.526	32.033*
17	-0.129	-3.376*	6.397	24.185*
18	0.291	1.056	6.688	3.469*
19	-0.105	-2.712*	6.583	23.954*
20	0.019	0.206	6.602	9.787*
21	1.308	0.913	7.911	0.766
22	-0.068	-2.002**	7.842	31.525*
23	-0.171	-5.868*	7.671	35.807*
24	0.008	0.096	7.679	12.347*
25	0.464	1.147	8.143	2.692*
26	-0.093	-1.334	8.050	15.314*
27	-0.107	-2.903*	7.942	28.162*
28	-0.114	-2.568**	7.829	23.021*
29	-0.127	-4.942*	7.702	38.766*
30	-0.110	-2.638*	7.592	23.367*

Source: Authors computation from BSE, Yahoo Finance data.
*Significance at 1% Level
**Significance at 5% Level,
*** Significance at 10% Level

The Standardized abnormal returns (SAR's) of selected companies are averaged for each day surrounding the event day i.e. 30 days before the announcement day and 30 days after the announcement day. The Average abnormal returns (AAR) are the average deviation of actual stock returns from the

expected normal returns. CAAR provides information about the average price behavior of stocks during the event window. CAAR is calculated by cumulating average abnormal returns from -30th day to + 30 day. To study the level of significance and to test the hypotheses t test was used. The Calculated Average abnormal returns (AAR), Cumulative average abnormal returns (CAAR) and t value of both AAR and CAAR for 61 days event window are shown in table. 4.

The values of AAR presented in table 4 shows that there are fluctuation in returns both positive and negative around the announcement. AAR of -29th day is positive and 17th day is negative significant at 1% level of significance. There is a 3 days (-7,-2,+2) positive it reflects that there is a chance of leakage of the information from insiders and 3 days (-1,24,30) negative returns found at 5% level of significance. AAR of days -6 is positive and +7, 8, 20th is negative at 10% significance level. The AAR's in the window period are greater than Zero hence hypothesis 1 (H0: CAR=0, HA: CAR≠0) can be rejected and it is implied that there is a significant impact of reverse splits on market prices and returns of stock.

Figure-2: Movement of AAR's and CAAR's for 61-Days Event Window

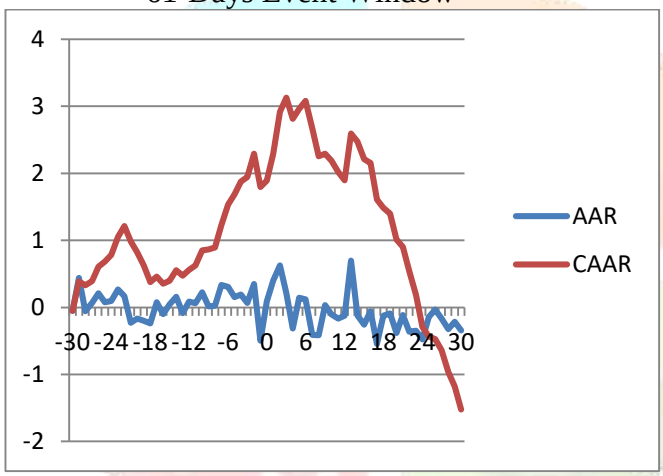
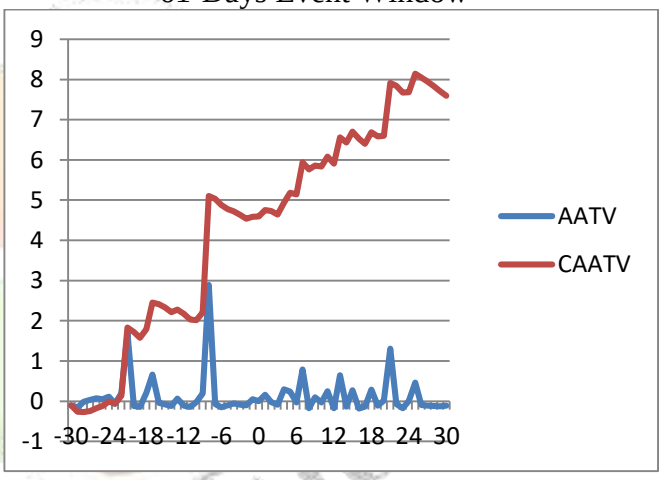


Figure-3: Movement of AATV and CAATV for 61-Days Event Window



It is observed from the above figure-2 that from +10th day to +30th day in event window resulted negative AAR's and positive returns founds after immediate announcement. CAAR are positive in whole event window except last 6 days (+24 to 30). This implies that investors could earn excess returns from reverse stock splits during the event window period.

CAAR are positively significant at 1% level for -2nd day, significant at 5% level for 9days (-22,-5,-4,-3,3,4,6,7,10) and significant at 10% for 14 days including announcement day. It is observed that from 24th day to 30th day negative CAAR's found in event window. CAAR's are significantly different from Zero hence hypothesis 3 is rejected.

Average abnormal change in trading volume (AATV) and Cumulative average abnormal change in trading volume (CAATV) presented in table-5. It is observed that t value of AATV's negatively significant for 15 days at 1% level of significance, for 5 days at 5% level of significance and for 2 days. During the 61days event window 33 days observed negative AATV and 24 days observed positive AATV.

It is observed that cumulative average abnormal change in trading volume (CAATV) positive for 53 days in event window and 8 days negative in the event window. CAATV is significantly positive at 1% level of significance for 42 days, positive at 3days at 5% level of significance and +13th day is positively significant at 10% level. It is clearly shows that reverse stock split announcements significantly impacts on trading volume as t value of CAATV is greater than 2.576 for 42 days. Therefore, the hypotheses 2 can be rejected and it is implied that there is a significant impact on volume of trading around split announcements.

It is observed from the figure-3 is that cumulative average abnormal change in trading volume (CAATV) is negative only for 8 days (-30 to -22) and positive for 53 days from -21 to +30 in event window. CAATV is significantly different from Zero hence hypothesis 3 is rejected.

6. Conclusion:

Several studies have done previously indicated that reverse stock splits are signaling something negative to the market but in Indian stock market reverse stock split announcements are responded well, even though it was less popular corporate action. The present study examined the impact of impact of reverse stock split announcements on stock returns and trading volume. Researcher used CAR and CAAR of selected BSE listed companies to analyse impact of reverse stock splits on stock returns. It is found that there is a significant impact of reverse stock split announcements on AAR and CAAR of selected companies. Researcher also examined the impact on trading volume, Average abnormal change in trading volume (AATV) and CAATV analyzed for selected firms. It is found that CAATV is positively significant in event window.

The study concluded that reverse stock split announcements has a measurable impact on stock returns and this study contributed to the literature of putting reverse stock splits as a potential anomaly that investors in India theoretically could exploit.

References

1. Francisco Antunes Celia Oliveira (2023), Reverse stock splits effects on the liquidity of European stocks, European Journal of Applied Business Management, 9(1), pp. 1-28, ISSN 2183-5594.
2. Dr. Prabhakar U. Rane (2022), A Study On “Implications Of Stock Splits In India”, Journal of Positive School Psychology, Vol. 6, No. 9, 1091-1097.
3. Maya Yuliana , Dwi Dewisri Kinasih , Sulistyandari (2022), The Effect of Stock Price, Stock Liquidity and Trading Volume on Stock Split on Companies Listed on IDX in 2015-2020, Asean International Journal of Business, Vol.1, No.2, 74-81, https://doi.org/10.54099/aijb.v1i2.166.
4. Radha Vyas (2021), Impact of Selected Stock Splits on Stock Performance in India, Asia-Pacific Journal of Management and Technology, Volume 2(1) 38-43, https://doi.org/10.46977/apjmt.2021v02i01.005.
5. Nagendra Marisetty , Dr. M Suresh Babu and Dr. S.V. Ramana Rao (2020), An empirical study on expected returns models with reference to bonus issues and stock splits in India, International Journal of Management (IJM), Vol 11, Issue 5, Pages: 1612- 1630.

6. West, J., Azab, C., Ma, K. C., & Bitter, M. (2020). Numerosity: Forward and reverse stock splits. Journal of Behavioral Finance, 21(3), 323–335. https://doi.org/10.1080/15427560.2019.1672168.
7. Edwin Hendra, Theresia Lesmana, and Sasya Sabrina (2019), Market Reaction on Reverse Stock Split Announcement: Empirical Evidence in Indonesian Stock Market, Proceedings of the 2nd Economics and Business International Conference - Economics and Business in Industrial Revolution 4.0, pages 154-161, DOI: 10.5220/0009200601540161.
8. Frank W. Bacon and Kate M. Spradlin (2019), Forward and Reverse Stock Splits: A Test of Market Efficiency, Journal of Applied Business and Economics Vol. 21(5), 18-28.
9. Frederick Adjei, and Mavis Adjei (2017), "Survival: A Motivation for Reverse Stock Splits." Journal of Finance and Economics, vol. 5, no. 5 (2017): 204-210. doi: 10.12691/jfe-5-5-2.
10. Ruzbeh J Bodhanwala (2016), Stock split and reverse split- Evidence from India, Great Lakes Herald, Vol 10, No 2, 26-41.
11. Asyngier, R. (2015). The effect of reverse stock split on the Warsaw Stock Exchange. Prace Naukowe Uniwersytetu Ekonomicznego We Wrocławiu, 381, 11–25.
12. Karyn Neahauser and Thomas H Thompson (2014), An examination of survivability of reverse stock splits, International Journal of Managerial Finance, DOI: 10.1108/IJMF-09-2013-0101.
13. Pawel Jamroz and Grzegorz koronkiewicz (2013), stock market reactions to the announcements and executions of stock-splits and reverse stock splits, Optimum. Studia Ekonomiczne NR 5 (65), DOI: 10.15290/ose.2013.05.65.03.
14. https://www.bseindia.com
15. https://www.moneycontrol.com
16. https://finance.yahoo.com