



---

## IMPACT OF STOCK-SPLITS ON PRICE AND LIQUIDITY OF STOCKS:

### *A STUDY BASED ON STOCK-SPLIT CASES FROM INDIAN BANKING SECTOR*

**Dr. Basab Kumar Sil**  
**Assistant Professor,**  
**Department of Commerce,**  
**Susil Kar College**  
**(Affiliated to University of Calcutta)**  
**Contact No. 9331848676**  
**Email ID: [basabsil@gmail.com](mailto:basabsil@gmail.com)**

#### *Abstract*

*Stock-split is a corporate action that allows companies to lower the face value of their shares by simultaneously increasing the number of outstanding shares, in order to keep their total capital base intact. A stock-split announcement portrays a signal to the investors of the management's optimism about the company's future earnings. Initial abnormal returns around the announcement date may be considered to be a positive reaction to that. Another objective of a stock-split is to give a boost to the company's liquidity position by increasing the volume of stock traded and reducing the bid-ask spread. In this backdrop, the present study is a humble attempt which aims at assessing the impact of stock-splits on the share price and liquidity in the specific context of Indian banks. The standard event study method is employed for assessing these impacts over different windows viz. pre and post-announcement period and pre and post-split period. On analysis, no occurrence of significant abnormal return surrounding announcement day and effective split day was noticed except for few isolated cases but the liquidity position, as represented by volume of trade and number of trades, was found to be significantly improved during the post-split period.*

**Keywords:** Abnormal Return, Announcement Day, Effective Split Day, Event Study method, Liquidity, Stock-split



## Impact of Stock-Splits on Price and Liquidity of Stocks:

### *A Study based on Stock-Split Cases from Indian Banking Sector*

#### I. Introduction

Stock-split was officially announced by the Securities and Exchange Board of India (SEBI) in March 1999. It is a corporate action that allows companies to lower the face value of their shares by simultaneously increasing the number of outstanding shares proportionately by the split ratio, so that the company's total capital base remains intact. For example, if the face value of a company's share is Rs.10 with 10,000 no. of shares outstanding and it splits its shares into face value of Rs.2 per share with a split ratio of 5 (i.e. Rs.10 : Rs.2), then the no. of outstanding shares will become 50,000 (i.e. 10,000 x 5). Nowadays, stock-splits have become a very popular corporate action in India.

Although, the primary objective of a stock-split is to keep the growing price of a share in a range to make the shares affordable and attractive to the investors, this may not be the sole objective. A stock-split announcement portrays a signal to the investors of the management's optimism about the company's future earnings. Initial abnormal returns around the announcement date may be considered to be a positive reaction to that. Another objective of a stock-split is to give a boost to the company's liquidity position by increasing the volume of stock traded and reducing the bid-ask spread. Stock-splits may also be used as a defence mechanism against hostile takeover by bringing more number of stocks into circulation.

In this backdrop, the present study is a humble attempt which aims at assessing the impact of stock-splits on the share price and liquidity in the specific context of Indian banks as there are conflicting opinions w.r.t. change in liquidity and wealth of the companies across the world.

#### II. Review of Literature

Many empirical studies have been conducted in U. S. context to ascertain the impact of stock-splits on price, return and liquidity. Although market reacts differently to stock splits in U. S. market as that of India, the methodologies used in these studies have formed the basis for development of an effective theory for such studies in Indian context. Many theories are found in the literature for explaining the effects of stock-splits. Popular amongst them are signalling theory, increased liquidity theory, optimal trading range theory, dispersion of control theory etc.

**Fama, Fisher, Jensen & Roll (1969)** had studied whether abnormal returns occurred during one month surrounding the execution dates of stock splits. Empirically they had found that stock-split announcements are usually preceded by a period associated with staggeringly high rate of returns even without having any information about the stock-split in the market. They had also found evidences of rapid market reactions to new information. Also, stock-split information had been fully reflected in stock prices by the end of the month of the split.

**Grinblatt, Masulis and Titman (1984)** had presented evidences of positive reaction of stock prices to stock dividends and stock-split announcements that are not influenced by other



simultaneous firm-specific announcements. They had also evidenced significant positive abnormal returns on and around the effective dates of stock dividends and stock-splits. Both post-announcement and post-split returns were found to be higher for stock dividends than for stock-splits.

**Lamoureux and Poon (1987)** had tested a model of market reaction to stock-splits and argued that with the announcement of a stock-split, the market recognizes that subsequent to the effective split day the daily number of trades along with the volume of shares traded will increase, this increase in volume will result in an increase in the noisiness of the security's return process, the increase in noise will raise the tax-option value of the stock, and it is this value that will generate the announcement effect of stock-splits.

**Lakonishok and Lev (1987)** had studied stock-split effects around announcement dates of 1015 sample firms during 1963 to 1982. They had found significant average abnormal returns for splitting firms during five years preceding the split announcement. They had argued that stock-split and stock dividend bring the stock price to a favourable and optimal trading range which leads to increase in demand for the stock and a positive stock price effect.

**Brennan and Copeland (1988)** had developed a model regarding behaviour of stock-splits, where they had argued that a split serves as a costly signal of the private information of the managers as stock trading costs depend upon stock prices. From empirical evidences the relationship was established. Their signalling model was based on announcement date mean adjusted returns for a sample of 967 companies that went for stock-splits. They had concluded that the managers will go for stock-splits only if they feel optimistic that the future share price will increase, at least won't decrease.

**Asquith, Healy and Palepu (1989)** had examined whether stock splits convey information about earnings. They had studied a sample consisting of 121 stock-split cases during the period 1970 to 1980. The study revealed the fact that splitting firms had superior earning performance during the pre-split years. They argued that before the stock-split announcement, market perceives these increase in earnings to be temporary, whereas with the stock-split announcement, investors start to perceive that these increase in earnings during pre-announcement period have become permanent and will continue in post-announcement period as well.

**Conroy, Harris and Benet (1990)** had examined the effects of stock-splits on bid-ask spreads for companies listed in New York Stock Exchange between January 1981 and April 1983. They argued that increase in percentage spread after split represents liquidity cost to investors. These spread increases are directly related to decreases in post-split share prices that partly explains the observed increase in return variability after splits. The evidence, thus, suggests a liquidity cost of a stock-split that must be compared against any other perceived benefits of the stock-split before announcing it.

**Ikenberry, Rankine and Stice (1996)** had examined abnormal returns for one year and three years during post-split period on the basis of a sample of 1,275 two-for-one stock splits announced by the firms in New York Stock Exchange and American Stock Exchange between



1975 and 1990. The results indicated significant post-split abnormal returns of 7.93% in the first year and 12.15% percent in first three years, though the post-announcement abnormal return was found to be 3.38% only, indicating that market has under-reacted to split announcements.

**Dennis and Strickland (2003)** had studied the effect of stock-splits on liquidity and abnormal stock returns on the basis of 1392 firms listed in NYSE, AMEX and NASDAQ in between January 1990 and December 1993. The data is collected for each sample stock for 8 quarters before and after the stock-split. While assessing the role of institutional investors in the given stock scrips, they had found that the abnormal return was associated with the stocks during the pre-split period w.r.t. the proportion of institutional ownership only.

**Dash and Gouda (2007)** had studied the overall impact of stock splits on stock returns considering a sample of 24 stock-split cases for stocks listed in the National Stock Exchange (NSE) which took place between January 2006 and August 2007. The pre-announcement period returns from the stocks are compared with the returns during post-split period. Strong evidence for an increase in liquidity of the stocks after the split was found.

**Dhar and Chhaochharia (2008)** had studied the effect of stock-split and bonus issue by using event study methodology for a period of 40 days prior to event day and 40 days after event day considering 90 stock-splits cases and 82 bonus issues of the stocks listed in BSE 500 covering the period April 2001 to March 2007. They had assessed whether average abnormal returns occurred surrounding announcement day and found positive average abnormal returns in the post event period. The study also supported the signalling hypothesis which is consistent with the findings in developed stock markets.

**Koustubh Kanti Ray (2011)** had examined the effect of bonus issues and stock-splits on abnormal returns and liquidity of Indian stocks by following the event study method. The results revealed that the Indian stock market reacts to the stock split announcements, but not to bonus issues. While assessing change in liquidity of the stocks between pre and post-split period, significant change in liquidity was observed at 1% level due to stock-splits whereas at 5% level of significance both bonus issues and stock-splits showed significant changes in liquidity over these periods.

**Joshiyura (2013)** had studied the price and liquidity effect on stocks surrounding the stock-split announcement day and effective stock-split day by using standard event study method. On analysis it was revealed that, though there is some positive abnormal return occurred surrounding stock-split announcement day and effective split day, it reversed in just a few days after the event day and ultimately generated significant negative abnormal returns in longer post-split period. However, a significant improvement was found in liquidity surrounding stock-split announcement day and effective stock-split day. So they had concluded that stock splits didn't have any positive impact on the shareholders' wealth but it had improved the liquidity of the stock significantly.

**Hua and Ramesh (2013)** had examined the response of stock price to the stock-split announcement and also conducted a test of market efficiency in Colombo Stock Exchange taking



a sample of 64 events comprising of 52 companies from 14 different sectors of the emerging market during 2009 to 2012 by employing standard event study methodology. They had found statistically significant average abnormal return at 5% level on the stock-split announcement day and hence concluded that stock splits have a significant signalling and information content in the Colombo Stock Exchange. Further, the large negative cumulative average abnormal return was also observed during 10 days post announcement. The result supports the semi-strong form of efficient market hypothesis for the sample companies during the study period as stock prices react so fast to public information that investors cannot earn an abnormal return by trading in the stocks following the stock split announcement day.

**Bodhanwala (2016)** had tried to explore the rationale behind the corporate actions of stock-splits and reverse splits and their impact on price and liquidity of the stocks by considering 104 stock-splits and reverse splits between 2006 and 2014. On analysing, he had concluded that splitting of shares substantially increases the wealth of shareholders, but no such conclusion could be drawn for reverse splitting.

**Ansary and Hussien (2017)** had studied the effect of stock-split on share prices, liquidity, and return volatility. They had also investigated into the efficiency of the stock market in response to stock-split announcement and declaration of stock dividend. They had adopted the event study approach for assessing the impact of these corporate actions on the stock performance for a period of 30 days prior to and post announcement day. They had evidenced that the announcement of both stock-split and the stock dividend had a positive impact on stock prices.

### **III. Objective of the Study**

First, to assess whether there is any abnormal return occurred for the selected companies during 30 trading days from the date of announcement

Second, to assess whether there is any abnormal return occurred for the selected companies during 30 trading days immediately succeeding the effective split date.

Finally, to assess whether there is any significant difference in average return, average volume of trade and average no. of trades of the sample companies between –

- (i) 30 trading days immediately preceding the effective split date and
- (ii) 30 trading days immediately succeeding the effective split date

### **IV. Research Methodology**

**First, Sample Selection:** The list of Indian banks went for stock-splits since March 1999 till the end of 2019 has been populated from [www.moneycontrol.com](http://www.moneycontrol.com) and subsequently verified from NSE India website [www.nseindia.com](http://www.nseindia.com) along with the respective announcement dates and effective split dates. 16 cases were found as follows:



**Table: 1**  
**Stock Splits in Indian Banking Sector**

Stock Split Cases	Related Banks	Codes used for Reference	Announcement Date	Stock-Split Date	Old Face Value (INR)	New Face Value (INR)
1	HDFC Bank	HDFC1	22.05.2019	19.09.2019	2	1
2	Yes Bank	YES	26.07.2017	21.09.2017	10	2
3	Karur Vysya Bank	KVB	19.09.2016	17.11.2016	10	2
4	Bank of Baroda	BOB	27.09.2014	22.01.2015	10	2
5	State Bank of India	SBI	24.09.2014	20.11.2014	10	1
6	Punjab National Bank	PNB	19.09.2014	18.12.2014	10	2
7	ICICI Bank	ICICI	09.09.2014	04.12.2014	10	2
8	Corporation Bank	CORPB	08.08.2014	22.01.2015	10	2
9	Jammu & Kashmir Bank	J&KB	12.06.2014	04.09.2014	10	1
10	Axis Bank	AXIS	25.04.2014	28.07.2014	10	2
11	Federal Bank	FEDB	04.06.2013	17.10.2013	10	2
12	HDFC Bank	HDFC2	18.04.2011	14.07.2011	10	2
13	South Indian Bank	SIB	25.05.2010	23.09.2010	10	1
14	Kotak Mahindra Bank	KMB	11.05.2010	13.09.2010	10	5
15	State Bank of Mysore	-	17.05.2008	07.01.2009	100	10
16	City Union Bank	CUB	28.04.2007	23.01.2008	10	1

Source: [www.moneycontrol.com](http://www.moneycontrol.com) and [www.nseindia.com](http://www.nseindia.com)

Out of these 16 cases, requisite data for State Bank of Mysore is not available in NSE website. Therefore, the final sample consists of only 15 cases. It can be noticed that HDFC Bank went for two stock splits during the study period. For the purpose of further referencing we have used certain codes against each stock-split case as shown in the table.

**Second, Data Collection:** The requisite data for these 15 stock-split cases is collected from NSE website. These data consists of –

(i) Historical stock prices at the close of each trading day for all the stock-split cases for the following windows:

- Starting from one year prior to the announcement date till the date just preceding the announcement date,
- 30 trading days starting from the announcement date,
- 30 trading days immediately preceding the effective split date and
- 30 trading days immediately succeeding the effective split date



(ii) Historical data on NIFTY Bank index, compiled and published by NSE, from [www.niftyindices.com](http://www.niftyindices.com) for the following windows:

- Starting from one year prior to the announcement date till the date just preceding the announcement date for each stock-split case,
- 30 trading days starting from the announcement date for each stock-split case,
- 30 trading days immediately succeeding the effective split date for each stock-split case

(iii) Historical data on volume of trade and number of trades on each trading day for all the stock-split cases for the following windows:

- 30 trading days immediately preceding the effective split date and
- 30 trading days immediately succeeding the effective split date

**Finally, Data Analysis:** Based on the objectives of the study, the following research questions have been formulated for different windows and the event study method, which is considered as a standard approach in the field of financial economics since its publication by Fama, Fisher, Jensen & Roll (1969), is adopted to answer these questions:

**Table: 2**  
**Research Questions / Hypotheses**

30 trading days from the date of Announcement	30 trading days immediately preceding the effective split date	30 trading days immediately succeeding the effective split date
1. Is there any significant abnormal return occurred during this period? $H_0: \mu_{AAR,(ad+30)} = 0$ $H_1: \mu_{AAR,(ad+30)} \neq 0$		2. Is there any significant abnormal return occurred during this period? $H_0: \mu_{AAR,(sd+30)} = 0$ $H_1: \mu_{AAR,(sd+30)} \neq 0$
		3. Is there any significant difference in average return over these two periods? $H_0: \mu_{AR,sd-30} = \mu_{AR,sd+30}$ $H_1: \mu_{AR,sd-30} \neq \mu_{AR,sd+30}$
		4. Is there any significant difference in average volume of trade over these two periods? $H_0: \mu_{Vol,sd-30} = \mu_{Vol,sd+30}$ $H_1: \mu_{Vol,sd-30} \neq \mu_{Vol,sd+30}$
		5. Is there any significant difference in average no. of trades over these two periods? $H_0: \mu_{Trades,sd-30} = \mu_{Trades,sd+30}$ $H_1: \mu_{Trades,sd-30} \neq \mu_{Trades,sd+30}$



*AR* stands for Average Return, *AAR* stands for Average Abnormal Return, *Vol* stands for Volume of Trade, *Trades* stands for No. of Trades, *ad* stands for Announcement Date and *sd* stands for Effective Split Date.

**Hypothesis 1:** Is there any significant abnormal return occurred during the post-announcement period? (i.e. to test  $H_0: \mu_{AAR,(ad+30)} = 0$  against  $H_1: \mu_{AAR,(ad+30)} \neq 0$ )

To answer this question, we have first calculated the daily return for all the stock-split cases for past one year ending on the trading day just preceding the announcement day and for the period of 30 days commencing from the announcement date i.e. from *ad* to (*ad* + 29). Daily return can be calculated as follows:

$$\begin{aligned} & \text{Daily Return from Stock (in \%)} \\ &= \frac{\text{Current Day Closing Price} - \text{Previous Day Closing Price}}{\text{Previous Day Closing Price}} * 100\% \end{aligned}$$

In the same way we have also calculated daily return from the NIFTY Bank index (which represents the bank market as we have taken our sample from Indian banking sector) for the same period.

$$\begin{aligned} & \text{Daily Return from Nifty Bank Index (in \%)} \\ &= \frac{\text{Current Day Closing Index} - \text{Previous Day Closing Index}}{\text{Previous Day Closing Index}} * 100\% \end{aligned}$$

Then we have run a linear regression between daily return from a stock and NIFTY Bank index for past one year ending on the trading day just preceding the announcement day. The process is repeated for all the stocks under study. The general form of the regression equations considered is as follows:

$$R_{i,t} = \alpha + \beta * R_{Nifty\ Bank,t} + \varepsilon_{i,t}$$

Where,  $R_{i,t}$  = Return from  $i^{th}$  stock for  $t^{th}$  day, the dependent variable

$R_{Nifty\ Bank,t}$  = Return from NIFTY Bank index for  $t^{th}$  day, the independent variable

$\alpha$  = The y-intercept

$\beta$  = Sensitivity index of return from  $i^{th}$  stock to return from NIFTY Bank index, and

$\varepsilon_{i,t}$  = Statistical error for regression

After obtaining the values of  $\alpha$  and  $\beta$  by the method of ordinary least square, the regression equation is applied to calculate the expected return ( $ER_{i,t}$ ) from each stock on a daily basis for the period of 30 days commencing from the announcement date i.e. from *ad* to (*ad* + 29). Any difference between stock's actual return over the expected return is regarded as the Abnormal Return ( $ABNR_{i,t}$ ).

$$ABNR_{i,t} = R_{i,t} - ER_{i,t}$$





In order to test whether significant abnormal return occurred during the post-announcement period or not, one sample t-tests (with test value = 0) have been conducted for all the stocks and trading days.

**Hypothesis 2:** Is there any significant abnormal return occurred during the post-split period? (i.e. to test  $H_0: \mu_{AAR,(sd+30)} = 0$  against  $H_1: \mu_{AAR,(sd+30)} \neq 0$ )

In a similar manner, we have first calculated the daily return for all the stock-split cases for the period of 30 days immediately succeeding the effective split date i.e. from  $(sd + 1)$  to  $(sd + 30)$  and we have also calculated the expected return ( $ER_{i,t}$ ) from each stock on a daily basis by applying the same regression equation, as applied in case of post-announcement period, for the said period. Any difference between stock's actual return over the expected return is regarded as the Abnormal Return.

In order to test whether significant abnormal return occurred during the post-split period or not, one sample t-tests (with test value = 0) have been conducted for all the stocks and trading days.

**Hypothesis 3:** Is there any significant difference in average return between 30 trading days immediately preceding the effective split date  $(sd - 30)$  and 30 trading days immediately succeeding the effective split date  $(sd + 30)$ ?

(i.e. to test  $H_0: \mu_{AR,sd-30} = \mu_{AR,sd+30}$  against  $H_1: \mu_{AR,sd-30} \neq \mu_{AR,sd+30}$ )

**Hypothesis 4:** Is there any significant difference in average volume of trade between 30 trading days immediately preceding the effective split date  $(sd - 30)$  and 30 trading days immediately succeeding the effective split date  $(sd + 30)$ ?

(i.e. to test  $H_0: \mu_{Vol,sd-30} = \mu_{Vol,sd+30}$  against  $H_1: \mu_{Vol,sd-30} \neq \mu_{Vol,sd+30}$ )

**Hypothesis 5:** Is there any significant difference in average number of trades between 30 trading days immediately preceding the effective split date  $(sd - 30)$  and 30 trading days immediately succeeding the effective split date  $(sd + 30)$ ?

(i.e. to test  $H_0: \mu_{Trades,sd-30} = \mu_{Trades,sd+30}$  against  $H_1: \mu_{Trades,sd-30} \neq \mu_{Trades,sd+30}$ )

In order to test hypotheses 3, 4 and 5, paired-t tests have been conducted between pre-split date data and post-split date data involving all the sample companies.

## V. Data Analysis and Interpretation

In **hypothesis 1**, we have assessed whether there is any abnormal return occurred during the post-announcement period by conducting one sample t-tests for all the stocks and trading days. Trading day-wise and stock-wise average abnormal returns during the post-announcement period are plotted below followed by the t-test results.



**Figure: 1**  
**Trading Day-wise Average Abnormal Returns during the Post-Announcement Period**



**Figure: 2**  
**Stock-wise Average Abnormal Returns during the Post-Announcement Period**



**Table: 3**  
**t-test Results for Abnormal Returns during Post-Announcement Period**

Day-wise One Sample t-test (Test Value = 0)					Stock-wise One Sample t-test (Test Value = 0)				
Trading Days	t	df	Sig.	Mean Difference	Stocks	t	df	Sig.	Mean Difference
ad+29	-.805	14	.435	-.19128	HDFC1	.051	29	.959	.00681
ad+28	.536	14	.600	.19685	YES	1.353	29	.187	.39915
ad+27	1.488	14	.159	.49091	KVM	.593	29	.558	.15083
ad+26	-.404	14	.693	-.17419	BOB	.043	29	.966	.01193
ad+25	-.693	14	.500	-.20088	CORPB	-.888	29	.382	-.29326
ad+24	1.213	14	.245	.31493	AXIS	.877	29	.388	.18394
ad+23	1.308	14	.212	.44308	J&KB	.475	29	.638	.09470
ad+22	1.045	14	.314	.44568	SBI	-.613	29	.544	-.09800
ad+21	-.474	14	.643	-.13525	ICICI	-.359	29	.722	-.04523
ad+20	1.437	14	.173	.31329	PNB	-2.216	29	<b>.035*</b>	-.56657
ad+19	.148	14	.884	.04580	FEDB	-1.305	29	.202	-.33617
ad+18	-.997	14	.336	-.36428	HDFC2	1.002	29	.325	.14354
ad+17	-1.131	14	.277	-.32096	KMB	.506	29	.617	.12353
ad+16	-1.694	14	.112	-.44438	SIB	.358	29	.723	.09984
ad+15	.487	14	.634	.18889	CUB	.676	29	.505	.21011
ad+14	-.977	14	.345	-.28422	* statistically significant at 5% level				
ad+13	.856	14	.407	.31976					
ad+12	-.586	14	.567	-.16052					
ad+11	-.839	14	.416	-.24308					
ad+10	-.457	14	.655	-.13936					
ad+9	1.228	14	.240	.27419					
ad+8	-1.266	14	.226	-.27084					
ad+7	.264	14	.796	.05875					
ad+6	-.436	14	.669	-.16428					
ad+5	-1.168	14	.262	-.32559					
ad+4	-.544	14	.595	-.23689					
ad+3	-1.337	14	.203	-.60191					
ad+2	1.268	14	.226	.53692					
ad+1	1.628	14	.126	.68216					
ad	.213	14	.835	.11697					



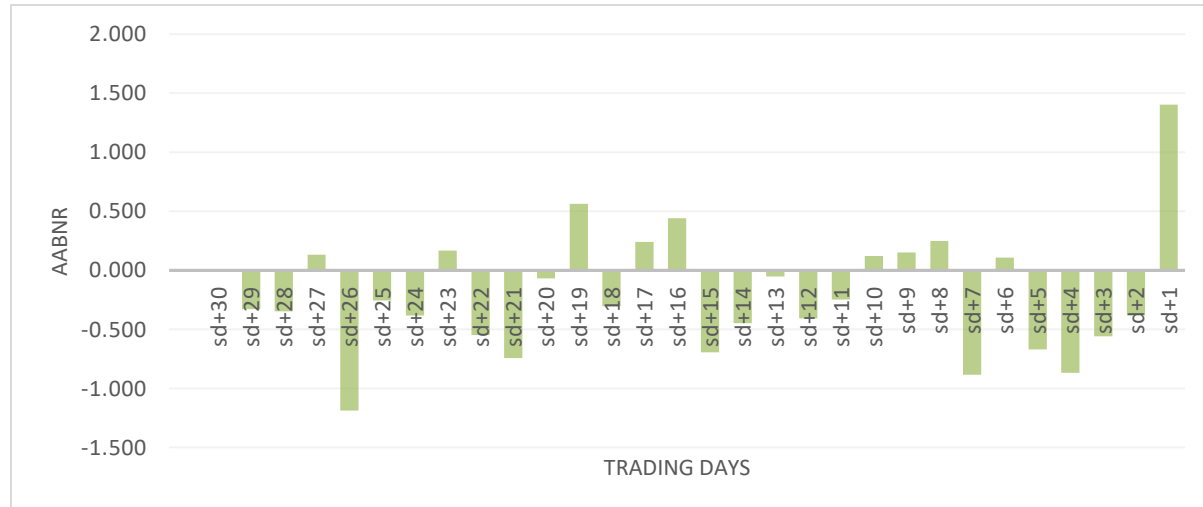
It can be observed that while conducting the one sample t-tests day-wise, neither of the tests gives significant result at 5% level (i.e. Sig. < 0.005). Therefore, all the hypotheses stating that no abnormal return occurred for different trading days during the post-announcement period stand validated.

On the other hand, while conducting stock-wise one sample t-tests, except for PNB, all other tests give insignificant results. That means stock split announcement by PNB has produced significant abnormal returns during the post-announcement period and such abnormal return is negative (as mean difference is negative). All other hypotheses stating that no abnormal return occurred for the selected stocks during the post-announcement period stand validated.

Thus, overall it may be concluded that, no significant abnormal return was observed during post-announcement period either trading day-wise or stock-wise except for an isolated case of Punjab National Bank.

In **hypothesis 2**, we have assessed whether there is any abnormal return occurred during the post-split period by conducting one sample t-tests for all the stocks and trading days. Trading day-wise and stock-wise average abnormal returns during the post-split period are plotted below followed by the t-test results.

**Figure: 3**  
**Trading Day-wise Average Abnormal Returns during the Post-Split Period**



**Figure: 4**  
**Stock-wise Average Abnormal Returns during the Post-Split Period**



**Table: 4**  
**t-test Results for Abnormal Returns during Post-Split Period**

Day-wise One Sample t-test (Test Value = 0)					Stock-wise One Sample t-test (Test Value = 0)				
Trading Days	t	df	Sig.	Mean Difference	Stocks	t	df	Sig.	Mean Difference
sd+30	.000	14	1.000	-.00016	HDFC1	.524	29	.604	.09990
sd+29	-1.036	14	.318	-.32722	YES	-1.500	29	.145	-.66769
sd+28	-.793	14	.441	-.34732	KVM	-1.046	29	.304	-.29608
sd+27	.390	14	.702	.13275	BOB	-1.359	29	.185	-.57115
sd+26	-2.526	14	<b>.024*</b>	-1.18691	CORPB	-2.256	29	<b>.032*</b>	-.61685
sd+25	-.675	14	.511	-.25437	AXIS	-.618	29	.541	-.07108
sd+24	-.668	14	.515	-.38255	J&KB	-1.834	29	.077	-.73749
sd+23	.372	14	.716	.16724	SBI	-.297	29	.768	-.05352
sd+22	-.694	14	.499	-.54853	ICICI	-.905	29	.373	-.13337
sd+21	-2.139	14	.051	-.74321	PNB	-3.345	29	<b>.002*</b>	-.93705
sd+20	-.195	14	.848	-.06929	FEDB	.768	29	.449	.36592
sd+19	1.319	14	.208	.56378	HDFC2	.607	29	.549	.13339
sd+18	-.655	14	.523	-.30364	KMB	.639	29	.528	.19200
sd+17	.694	14	.499	.23999	SIB	1.126	29	.269	.63714
sd+16	1.833	14	.088	.44205	CUB	-.455	29	.653	-.24218
sd+15	-1.361	14	.195	-.69471					

\*statistically significant at 5% level



sd+14	-.833	14	.419	-.44829
sd+13	-.119	14	.907	-.05190
sd+12	-1.741	14	.104	-.40656
sd+11	-.981	14	.343	-.24705
sd+10	.253	14	.804	.12081
sd+9	.295	14	.772	.15183
sd+8	.517	14	.613	.24860
sd+7	-1.722	14	.107	-.88376
sd+6	.260	14	.798	.10689
sd+5	-1.011	14	.329	-.66896
sd+4	-2.263	14	<b>.040*</b>	-.86635
sd+3	-1.385	14	.188	-.55974
sd+2	-.448	14	.661	-.38313
sd+1	1.345	14	.200	1.40353

It can be observed that while conducting the one sample t-tests day-wise, except for 4<sup>th</sup> trading day and 26<sup>th</sup> trading day immediately succeeding the effective stock-split date, others do not produce significant results at 5% level (i.e. Sig. < 0.005). This implies that the hypotheses stating that no abnormal return occurred during the post-split period for the other trading days stand validated.

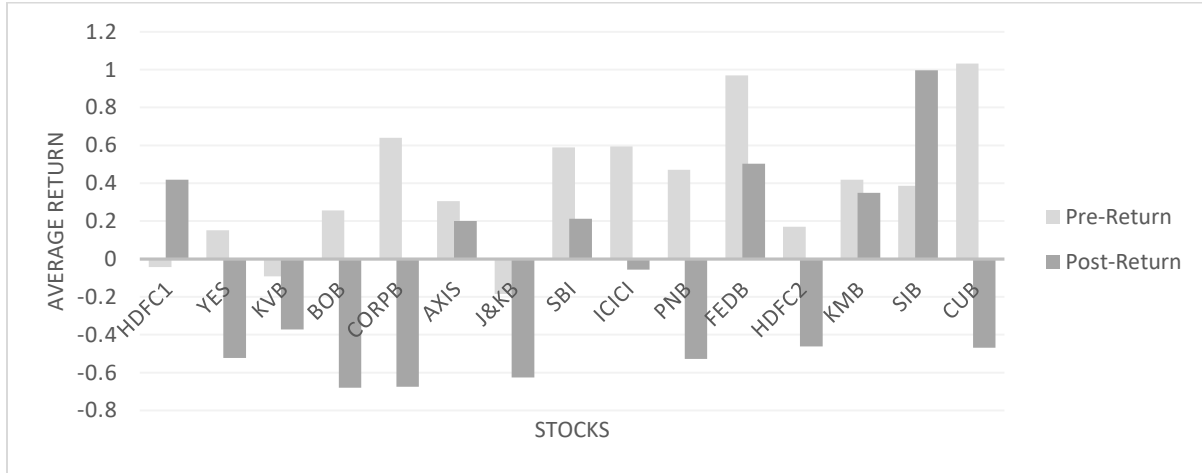
On the other hand, while conducting stock-wise one sample t-tests, except for CORPB and PNB, all other tests give insignificant results. That means stock split announcement by CORPB and PNB have produced significant abnormal returns during the post-announcement period and such abnormal returns are negative (as their mean differences are negative). All other hypotheses stating that no abnormal return occurred for the selected stocks during the post-split period stand validated.

Thus, overall it may be concluded that, not much significant abnormal returns were observed during post-split period neither trading day-wise nor stock-wise except for few isolated cases like 4<sup>th</sup> trading day and 26<sup>th</sup> trading day immediately succeeding the effective stock-split date, Corporation Bank and Punjab National Bank.

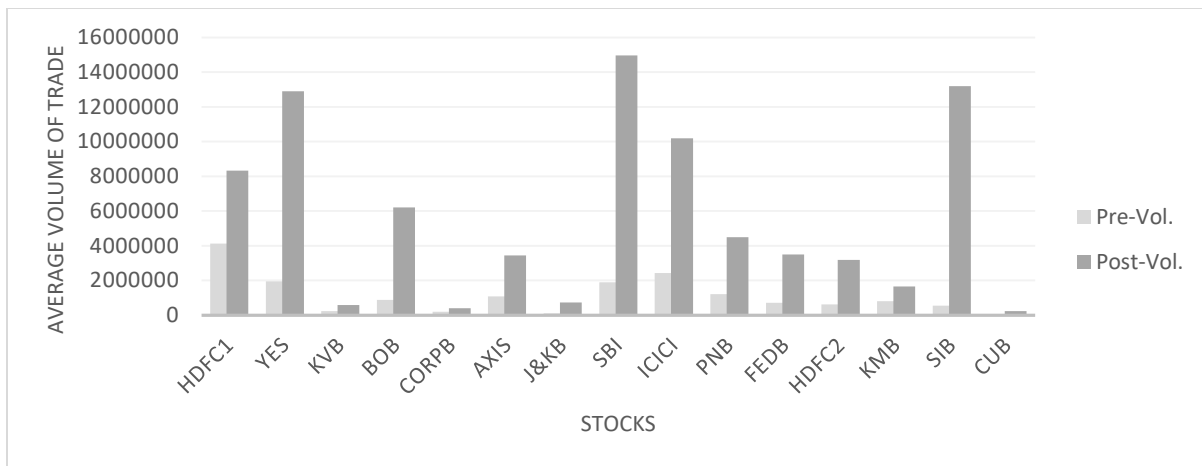
In **hypotheses 3, 4 and 5**, we have assessed whether significant statistical differences exist between pre and post-split period average return, average volume of trade and average no. of trades respectively. Data are plotted below and analysed using paired-t tests. Data regarding no. of trades are not available for Kotak Mahindra Bank, South Indian Bank and City Union Bank.



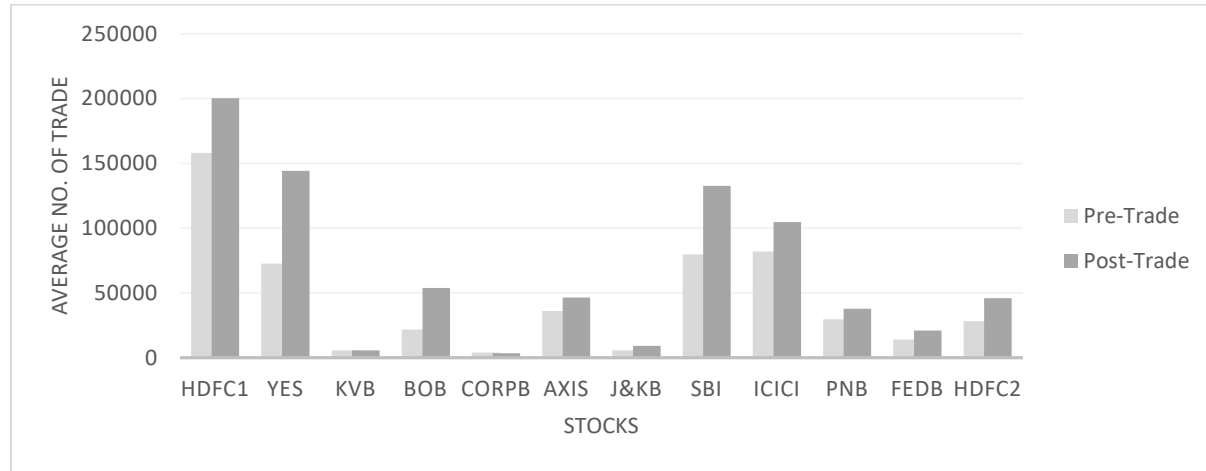
**Figure: 5**  
**Stock-wise Average Return during Pre and Post-Split Period**



**Figure: 6**  
**Stock-wise Average Volume of Trade during Pre and Post-Split Period**



**Figure: 7**  
**Stock-wise Average No. of Trades during Pre and Post-Split Period**



**Table: 5**  
**Results of Paired Sample t-tests**

Pairs	No. of Cases	Paired Differences			t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean			
Avg. Pre-Return v. Avg. Post-Return	15	.491600	.581203	.150066	3.276	14	<b>.006*</b>
Avg. Pre-Vol. v. Avg. Post-Vol.	15	-4472940.333	4538729.161	1171894.830	-3.817	14	<b>.002*</b>
Avg. Pre-No. of Trades v. Avg. Post-No. of Trades	12	-22315.250	23091.260	6665.873	-3.348	11	<b>.007*</b>

\*statistically significant at 5% level

From the obtained results, it can be observed that significant differences exist between all the pairs viz. Avg. Pre-Return v. Avg. Post-Return, Avg. Pre-Vol. v. Avg. Post-Vol. and Avg. Pre-No. of Trades v. Avg. Post-No. of Trades. Therefore, hypotheses 3, 4 and 5 stating that there is no significant difference in average return, average volume of trade and average number of trades respectively between 30 trading days immediately preceding the effective split date ( $sd - 30$ ) and 30 trading days immediately succeeding the effective split date ( $sd + 30$ ) are rejected at 5% level of significance. More specifically, the average post-split return has significantly been reduced as compared to average pre-split return (as indicated by a pre minus post positive mean difference) whereas the liquidity position measured by volume of trade and no. of trades has significantly been improved (as indicated by pre minus post negative mean differences).



---

## **VI. Overall Conclusion**

This study focuses on 15 stock-split cases from banking sector in India during the period March 1999 to December 2019. Price movement of these stocks along with the movement of sectoral index NIFTY Bank were observed for one year ending on immediately preceding the announcement date, 30 trading days commencing from the announcement date, 30 trading days immediately preceding the effective stock-split date and 30 trading days immediately succeeding the effective stock-split date. Data regarding volume of trade and number of trades were also collected for 30 trading days immediately preceding and succeeding the effective stock-split date.

On analysis by using event study method, occurrence of statistically significant abnormal return during the post-announcement period has not been noticed either trading day-wise or stock-wise except for an isolated case w.r.t. the stock of Punjab National Bank. Similar observation has been made during the post-split period also. Occurrence of significant abnormal return has been noticed only on 4<sup>th</sup> and 26<sup>th</sup> trading day immediately succeeding the effective stock-split date and for the stocks of Corporation Bank and Punjab National Bank. For other stocks and trading days no such significant abnormal return has been found.

The results are in line with the theory that stock-splits do not change shareholders' wealth. Although, administrative costs are involved in stock-splits, they don't have any impact on valuation of shares and corporate cash flows. That is why stock-splits are often referred to as Cosmetic Corporate Action. Therefore, the next most pertinent question is that, if the net effect of a stock-split to investors and existing shareholders is zero, why do so many companies split their stocks.

On further analysis of pre-split v. post-split average return, average volume of trade and average number of trades of the stocks, although it was found that average return has significantly been reduced during the post-split period as compared to the pre-split period, the liquidity position, as represented by volume of trade and number of trades, was found to be significantly improved during the post-split period. The result is obvious. Companies split their stocks to make their stocks more affordable and attractive to small retail investors which results into more participants in the market and ultimately leading towards increase in liquidity of the stock. But the return to the investors deteriorated significantly after split.

Thus, to conclude, while stock-splits continue to make headlines, it becomes exceedingly important for the investors to know the impact of these stock-splits before arriving at their investment decision as the performance of a stock depends more on the fundamentals of the company.



---

## VII. References

- Ansary, O. E. & Hussien, M. (2017), The Impact of Stock Dividends and Stock Splits on Shares' Prices: Evidence from Egypt, *Accounting and Finance Research*, Vol. 6(4), pp. 96 – 114
- Asquith, P., Healy, P. & Palepu, K. (1989). Earnings and Stock Splits, *The Accounting Review*, Vol. 64 (3), pp. 387-403
- Bodhanwala, R. J. (2016), Stock Split and Reverse Split – Evidence from India, *Great Lakes Herald*, Vol. 10 (2), pp. 26 – 41
- Brennan, M. J. & Copeland, T. E. (1988), Stock Splits, Stock Prices, and Transaction Costs, *Journal of Financial Economics*, Vol. 22 (1), pp. 83-101
- Conroy, R. M., Harris, R. S. & Benet, B. A. (1990), The Effects of Stock Splits on Bid-Ask Spreads, *Journal of Finance, American Finance Association*, vol. 45(4), pages 1285-1295
- Dash, M. & Gouda, A. (2007), A Study on the Liquidity Effects of Stock Splits in Indian Stock Markets, Available at SSRN: <https://ssrn.com/abstract=1440139> or <http://dx.doi.org/10.2139/ssrn.1440139>
- Dennis, P. & Strickland D. (2003), The Effect of Stock Split on Liquidity and Excess Returns: Evidence from Shareholder Ownership Composition, *The Journal of Financial Research*, Vol. XXVI (3), pp. 355-370
- Dhar, S. & Chhaochharia, S. (2008), Market Reaction around the Stock Splits and Bonus Issues: Some Indian Evidence, Available at SSRN: <https://ssrn.com/abstract=1087200> or <http://dx.doi.org/10.2139/ssrn.1087200>
- Fama, E. F., Fisher, L., Jensen, M. C. & Roll, R. W. (1969), The Adjustment of Stock Prices to New Information, *International Economic Review*, Vol. 10 (1), pp. 1-21
- Grinblatt, M., Masulis, R. W. & Titman, S. (1984), The Valuation Effects of Stock Splits and Stock Dividends, *Journal of Financial Economics*, Vol. 13 (4), pp. 461-490
- Hua, L. & Ramesh, S. (2013), A Study on Stock Split Announcements and its Impact on Stock Prices in Colombo Stock Exchange (CSE) of Sri Lanka, *Global Journal of Management and Business Research Finance*, Vol. 13(6), pp. 26-34
- Ikenberry, D. L., Rankine, G. & Stice, E. K. (1996), What Do Stock Splits Really Signal? *The Journal of Financial and Quantitative Analysis*, Vol. 31 (3), pp. 357-375
- Joshi, N. (2013), Market Reaction to Stock Splits in Large and Liquid Stocks: Evidence from the Indian Stock Market, *NMIMS Management Review*, Vol. 23, 130 – 140
- Lakonishok, J. & Lev, B. (1987), Stock Splits and Stock Dividends: Why, Who and When, *Journal of Finance*, Vol. 42 (4), pp. 913-932



---

Lamoureux, C. G., & Poon, P. (1987), The Market Reaction to Stock Splits, *Journal of Finance*, Vol. 42 (5), pp. 1347-1370

Ray, K. K. (2011), Market Reaction to Bonus Issues and Stock Splits in India: An Empirical Study, *The IUP Journal of Applied Finance*, Vol. 17 (1), pp. 54-69