Research Article

LINKAGE BETWEEN STOCK SPLIT AND CORPORATE FINANCIAL PERFORMANCE: SOME EVIDENCE FROM INDIA

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A R T I C L E I N F O	A B S T R A C T
	Stock split is considered by the management of a company as one of the most powerful and cost effective tool of providing signals of exceptional performance of a business and its bright future prospect. The main motive of this study is to examine the financial performance and value creation made by the Large Cap, Mid Cap and Small Cap stock splitting companies of India before and after the stock split to verify the above signalling concept of stock split. At first, financial performance of the sample companies for the pre and post stock split is measured by using five measures those are Return on Capital Employed (ROCE), Return on Net Worth (RONW), Earning Per Rupee Value of Share (EPRVS), Dividend Per Rupee Value of Share (DPRVS), and Market Value to Book Value Ratio (MV/BV Ratio) and after that the value addition made by them is measured by using two modern measures that are Market Value Added to Net Worth (MVANW)and Shareholders Value Added to Net Worth (SVANW). It is found that the immediate and sustainable change in the performance of Large cap and mid cap group stock splitting companies have not been better than their control companies. There was significant negative change in the performance of large cap and mid cap stock splitting companies after the stock split. Thus they have not satisfied the signalling concept of stock split. On the other hand stock splitting companies of small cap group performed better than the other two groups after the stock split as all the five measures of financial performance have been changed positively and out of them EPRVS and DPRVS have been improved significantly in case of stock splitting companies of small cap group. The small cap stock splitting companies have also performed better than their control companies after the stock split. Thus the concept of signalling good performance and bright future prospect has been applicable to only small cap stock splitting companies to much extent. But at the same time, based on MVANW and SVANW, they also revealed significant deterioration of their value to the shareholders in the sustainable time frame.

INTRODUCTION

A stock split is a decision by the company's board of directors to increase the number of shares that are outstanding by dividing its shares into multiple shares. Although the number of shares outstanding increases by a specific multiple, the total money value of shares remains the same compared to pre-split amounts, because the split did not add any real value. Thus, as per earlier studies, stock split is often argued as a purely cosmetic event that should neither create nor destroy value. By stock split every stock holder got additional stock without paying to the issuer company (Fama *et al*, 1969).

As per earlier studies, there are several aspects associated with stock splits like Optimal price range hypothesis, Liquidity hypothesis, Signalling hypothesis, Neglected firm hypothesis,

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Multiple event hypothesis, Tax-option hypothesis etc. This paper mainly emphasises the Signalling hypothesis. One of the most important reasons behind the corporate event such as stock split is to provide signals regarding the firm's favourable growth prospect. It is mostly believed that the firms that are having exceptional performance than their competitors, go for stock split. This better performance is expected to continue also in future. Stock split is often used by the management of a company as a means of providing favourable signals for future prospects and to reduce the information asymmetry between the managers and the shareholders. The announcement of a stock split is considered as a signal given by the management to the investments and potential investments that the company has performed well and has good prospects in the future [Aigbe *et al* (1995); and Brealey *et al* (2007).

It is better known to the corporate executives that stock split is one of the most powerful and cost effective marketing tool ever invented. Shareholders of the stock split announcing companies feel great and a sense of greater wealth is prevailed

in their mind – all with little expense to the company. Thus, the main purpose of this research paper is to examine this signalling hypothesis by analysing that the companies that do stock split are actually a good performer or not and this good performance and growth will sustain in future after the stock split or not. Therefore, this paper is going to verify the linkage between Stock split and corporate financial performance.

This study is fully based on Indian stock market. In order to examine the real framework of signalling hypothesis, the financial performance and the value addition of the sample companies are thoroughly analysed. In this study, the control sample methodology is applied so that it will be possible to observe whether the stock splitting companies significantly differ from the non-stock splitting companies or not.

Earliar, many researchers conducted their study in order to examine the extent to which the stock splits are motivated by signalling hypothesis. Some studies presented appropriate reasoning to support the favourable signalling impact like Ikenberry, Rankine, and Stice(1996); Arif, Khan, and Baker(2004); Yague, Sala, and Fuents(2009); Lakonishok and Lev(1987); Tawatnuntachai and D'Mello(1999); Desai and Jain(1997) etc. On the other hand some studies do not support this signalling hypothesis like Marwata (2001); Reinkaine(2010), Thirunellai(2014); Ichsanuddin Nur (2017) etc.

Research Gap of the Earlier Researches

1. Some of these studies did not control for the other price sensitive event announced during the financial year of stock split,
2. Most of these studies did not undertaken the control sample methodology,
3. In most of the cases the sample size is small and based on short time horizon.

The rest of the paper is organised as follows: Section II presents the details of objective, database and methodology used in this study; Section III includes the empirical findings of the study and summarisation; and Section IV indicates the concluding remarks.

Objective of the study

The main objective of this paper is to observe the linkage between stock split and corporate financial performance to verify the concept that 'the corporate action like stock split signals the good performance of a company and its great future prospect', is reasonable to what extent.

DATABASE AND METHODOLOGY

Database and Methodology part is too vital part of any empirical research work. For the present research study secondary data is used which is collected from the official website of respective sample companies under the study as well as the "Capitaline – 2000 database package" is used for collecting data on daily share price, volume, turnover, market capitalisation, balance sheet and Account of profit and loss. In some places the help of Money Control website is taken to collect and tally the data.

The study consisted of 73 BSE (Bombay Stock Exchange) listed companies that had done stock split for only one time during the period of 10 years, from F.Y. 2002-03 to F.Y. 2011-12. Thus the present study is based on longer time horizon.

The study also includes the same number (i.e. 73) of control companies of the concerned stock splitting companies. Thus the required data is collected for total 146 companies. Formation of control sample is not an easy task. In this study, for each stock splitting company, a non-stock splitting, belonging to the same industry and having approximately same market capitalisation as on 31/3/2015, has been selected. But in many cases, it is very difficult to find out. Thus in those cases, a non-stock splitting company having next highest or next closest market capitalisation to the corresponding stock splitting company has been selected. Now out of the total 73 stock splitting companies, 30 companies are grouped as large cap (having market cap more than Rs.1000 crore as on 31/03/2015), 26 companies are found as mid cap(having market cap between Rs.250 crore and 1000 crore as on 31/03/2015), and remaining 17 companies are categorised as small cap companies (having market cap between Rs.100 crore and 250 crore as on 31/03/2015).

METHODOLOGY

In this study, to measure the financial health of the companies different ratios like Return on Capital Employed (ROCE), Return on Net Worth (RONW), Earning Per Rupee Value of Share (EPRVS), Dividend Per Rupee Value of Share (DPRVS), and Market Value to Book Value Ratio (MV/BV Ratio) and to measure the value created by the companies modern measures like Market Value Added (MVA) and Share holders Value Added (SVA) are calculated. To see the immediate change in the financial performance and value created by the companies the above ratios are computed and then compared for one year before and one year after the financial year of stock split. Further to observe the relatively sustainable change in the financial performance and value created by the companies the same ratios are computed for three years before (i.e. Period I) and three years after (i.e. Period II) the stock split and the average value of each ratios for three years before and three years after the stock split are figured out and then compared.

Method for calculating Return On Investment (ROI)

ROI indicates the profit earning ability of a firm on its invested capital. It measures the overall efficiency of the organization especially from the profitability prospective.

$$ROI = \frac{Profit\ before\ Interest\ but\ after\ Tax}{Amount\ of\ capital\ employed} * 100$$

Method for calculating Return On Net Worth (RONW)

RONW is also a traditional technique for measuring financial performance of a firm. It indicates the profit earning ability of a firm from the view point of its equity share holders.

$$RONW = \frac{Profit\ after\ interest\ and\ Tax}{Amount\ of\ net\ worth} * 100$$

Method for calculating Earning Per Share (EPS)

This ratio actually indicates the earnings of the companies based on per equity shares. It measures the profitability of the firm from shareholders' point of view. EPS can be computed as follows:

$$EPS = \frac{Earnings\ available\ to\ Equity\ shareholders}{Number\ of\ Equity\ shares\ outstanding}.$$

But instead of absolute value of EPS, relative value i.e. Earning Per Rupee Value of Share(EPRVS) is calculated

where EPS is divided by the face value of share in order to keep all the companies on the same footings to ensure the comparison easier.

Method for calculating Dividend Per Rupee Value of Share (DPRVS)

The dividend per Rupee Value of Share indicates the amount of dividend paid per rupee value of share and it is calculated as:

$$DPRVS = \frac{Amount\ of\ total\ dividend}{Number\ of\ equity\ shares\ outstanding * face\ value\ of\ share}.$$

Method of Market Value to Book Value Approach

Excess of market value per share of a firm over the book value indicates the generation of value for the shareholders. The market value of a share may be defined as the present value of the expected stream of dividend per share (DPS).

Method for computing Market Value Added (MVA)

Market Value Added is the difference between current market value of a firm i.e. market capitalization and the book value of the capital contributed by investors. When market value of capital is greater than its book value, MVA becomes positive which indicates value creation for the shareholders. But the excess of market capitalization over book value of capital cannot represent the market value addition in true sense. Therefore MVA should be calculated as,

$MVA_t = MC_t - MC_{(t-1)}$
Where, MC_t represents market capitalization at the end of period t;
$MC_{(t-1)}$ stands for market capitalization at the end of period (t-1).

But, as in the case of stock split, the number of outstanding shares increases to a certain extent, the MVA should be calculated by using the following formula:

Closing market price of an equity share at time 't' multiplied by number of outstanding shares on that time minus closing market price of an equity share at time (t-1) multiplied by number of outstanding shares at time 't'.

Now, in spite of the absolute value of MVA, the relative value of MVA to Net Worth i.e. MVANW of all the sample companies are analysed for the immediate and sustainable time frame.

Method for computing Shareholders Value Added (SVA)

SVA actually indicates the total value added to the shareholders, both realized as well as unrealized. It represents the company's worth to shareholders.

That means, in any period 't' SVA can be measured as follows:

$SVA = MVA_t + EDiv_t$
Where, MVA_t indicates the Market Value Added at time 't' and
$EDiv_t$ indicates Equity Dividend at time 't'.

Here also, in spite of taking the absolute value of SVA, the relative value of SVA to Net Worth i.e. SVANW for all the sample companies are analysed.

Now in order to know whether the change (if any) in the above financial measures are statistically significant or not, Paired T-test has been applied. Finally, a comparative analysis between the stock splitting companies and the control companies has been done to make the analysis effective.

At first all the above methodologies are applied for data analysis of the sample as a whole and there after separate analysis has been performed for each of the groups (i.e. Large cap, Mid cap, and small cap group) to make the study interesting.

Empirical Findings

The financial measures ROCE, RONW, EPRVS, DPRVS, MV TO BV Ratio, MVANW, and SVANW have been calculated and thoroughly analysed for the sample as a whole and separately of the three groups for a period of one year pre and post the stock split to see the immediate change and for three years pre and post the stock split to observe the sustainable change in the financial performance and value created by the companies. The results of the comparative analysis and Paired T-test have been presented in different tables and their implications are to be discussed as follows:

Analysis of ROCE

The overall summarisation of the findings of the analysis of ROCE is presented in table – 1A.

From the above table it is clear that in case of total stock splitting companies, the percentage of companies having negative change in their ROCE is more than the percentage of companies with positive change in the immediate as well as in the sustainable time frame.

Table 1 A

Summarised result of change in ROCE of sample companies for pre and post stock split									
Total Sample Companies	73								
stock splitting co.	negative	%	positive	%	Control co.	negative	%	positive	%
immediate change:	42	57.53	31	42.47	immediate change:	40	54.79	33	45.21
sustainable change:	44	60.27	29	39.73	sustainable change:	33	45.21	40	54.79
Large cap:	30								
stock splitting co.	negative	%	positive	%	Control co.	negative	%	positive	%
immediate change:	21	70.00	9	30.00	immediate change:	19	63.33	11	36.67
sustainable change:	21	70.00	9	30.00	sustainable change:	17	56.67	13	43.33
Mid cap	26								
stock splitting co.	negative	%	positive	%	Control co.	negative	%	positive	%
immediate change:	17	65.38	9	34.62	immediate change:	13	50.00	13	50.00
sustainable change:	16	61.54	10	38.46	sustainable change:	10	38.46	16	61.54
Small cap:	17								
stock splitting co.	negative	%	positive	%	Control co.	negative	%	positive	%
immediate change:	4	23.53	13	76.47	immediate change:	8	47.06	9	52.94
sustainable change:	7	41.18	10	58.82	sustainable change:	6	35.29	11	64.71

But when the total control companies are concerned, in the immediate time frame more companies have shown negative change but sustainably more percentage of control companies (i.e. 9.59% more) depicted positive change in their ROCE.

Now results of the analysis of ROCE for the three groups separately are described below:

Large Cap: In case of large cap companies 70 % of the stock splitting companies with negative change in ROCE which is much more than the percentage of those companies with positive change in their ROCE both in the immediate and sustainable time frame. Whereas, the 63.33% of the control companies show negative and the rest i.e. 36.67% show positive immediate change but there after in the sustainable time frame the percentage of control companies with positive change in their ROCE has been increased to 43.33%.

Mid Cap: In this group also, more percentage of stock splitting companies have shown immediate and sustainable decrement in their ROCE. But in case of control companies, 50 % of companies have decrement and the rest 50 % have improvement in their ROCE immediately. Thereafter in the long run 61.54% of the control companies have improved their ROCE.

Small Cap: The findings of the small cap group companies are more interesting. Here, 76.47% of the stock splitting companies has shown positive immediate change. But in the sustainable time frame, that percentage has been decreased to 58.82%. While considering the control companies of this group, only 52.94% companies have found immediate improvement in their ROCE which is less than that of the stock splitting companies. But in the sustainable time frame the percentage of control companies with positive change in their ROCE become 64.71% which is better than that of stock splitting companies.

Finally it can be said that only the stock splitting companies of small cap group have shown better immediate improvement in their ROCE compared to the large cap and mid cap group.

Paired Sample T-test of ROCE

Now, the paired sample T-Test has been applied to see whether the above results are statistically significant or not. The findings of the test is given below:

Total sample companies: When total sample companies are concerned the result of the paired T- test reveals that all the positive and negative changes in the ROCE of stock splitting companies along with their control companies are insignificant in the immediate as well as in the sustainable time frame.

Large Cap: The stock splitting companies of the large cap group have shown statistically significant negative change in their ROCE in both the time frame. Whereas, the control companies have also shown negative change in their ROCE but the change is insignificant.

Mid Cap: The result depicts that the stock splitting companies and their control companies of this group have shown insignificant negative change in their ROCE in both the time frames.

Small Cap: In case of this group the result reveals that the immediate and the sustainable change in the ROCE of the stock splitting companies along with their control companies are positive but insignificant.

Analysis of RONW

The summarised Result of the analysis of RONW of the sample companies for the immediate as well as for the sustainable time frame is presented in table – 2A.

From the above table it is clear that when concerned to the total sample companies, more percentage of the total stock splitting companies i.e. 63.01% and 61.64% have shown decrement in their RONW in the immediate and sustainable time frame respectively. On the other hand, considering their respective control companies, more companies also face decrement in their RONW but in the longer time horizon, the percentage of control companies with positive change in their RONW become 47.95% from 36.99% in the immediate time frame.

For the three groups separately the findings are described below:

Large Cap: In the large cap group, both the immediate change and sustainable change in RONW of the stock splitting companies along with their respective control companies are same. 63.33% of the stock splitting companies and 60% of the control companies have shown reduction in their RONW.

Mid Cap: In case of mid cap stock splitting companies also, the immediate change and the sustainable change in RONW are same.

Table 2A

Summarised result of RONW of sample companies for pre and post stock split									
Total Sample Companies	**73**								
stock splitting co.	negative	%	positive	%	Control co.	negative	%	positive	%
immediate change:	46	63.01	27	36.99	immediate change:	46	63.01	27	36.99
sustainable change:	45	61.64	28	38.36	sustainable change:	38	52.05	35	47.95
Large cap:	30								
stock splitting co.	negative	%	positive	%	Control co.	negative	%	positive	%
immediate change:	19	63.33	11	36.67	immediate change:	18	60.00	12	40.00
sustainable change:	19	63.33	11	36.67	sustainable change:	18	60.00	12	40.00
Mid cap	26								
stock splitting co.	negative	%	positive	%	Control co.	negative	%	positive	%
immediate change:	18	69.23	8	30.77	immediate change:	19	73.08	7	26.92
sustainable change:	18	69.23	8	30.77	sustainable change:	12	46.15	14	53.85
Small cap:	17								
stock splitting co.	negative	%	positive	%	Control co.	negative	%	positive	%
immediate change:	9	52.94	8	47.06	immediate change:	9	52.94	8	47.06
sustainable change:	8	47.06	9	52.94	sustainable change:	8	47.06	9	52.94

Here 63.23% of the stock splitting companies and 73.08% of the control companies have faced decrement in RONW. But in the long run, the percentage of control companies with improvement in their RONW become 53.85% from 26.92%

Small Cap: For the small cap companies the result shows that the percentage of stock splitting companies with positive and negative change and the percentage of control companies with positive and negative change in their RONW are same in both the time frame. The percentage of both the stock splitting companies and their control companies with positive change in RONW increased to 52.94% in the sustainable time frame from 47.06%.

Paired Sample T-test of RONW

Now the paired sample T-test has been applied to verify whether the above findings are statistically significant or not. The brief summary of the result of the test is described below:

Total Sample Companies: From the results of paired t-test it is revealed that, considering the total stock splitting companies, the immediate change in RONW is negative as well as insignificant but in the long run there is insignificant positive change in their RONW. On the other hand case of total control companies, the RONW has been decreased significantly in the immediate time frame but in the long run an insignificant positive change in the RONW of the control companies is seen.

Large Cap: In case of large cap stock splitting companies, there has been statistically significant negative change in their RONW in both the immediate and sustainable time frame. Whereas, the RONW of the control companies in this group show the insignificant negative change.

Mid Cap: Stock splitting companies of the mid cap group have immediately faced insignificant negative change in their RONW and thereafter, the decrement in their RONW become significant in the long run. Where, the control companies have shown the insignificant negative change in their RONW in both the time frame.

Small Cap: Stock splitting companies of the small cap group have shown increment in their RONW but the changes are insignificant both immediately and in the sustainable time frame. On the other hand, the control companies of this group have shown insignificant negative immediate change but in the sustainable time frame those control companies also showed insignificant positive change in their RONW.

Finally it can be said that while the total stock splitting companies as a whole have shown insignificant change in their RONW, the Large cap group companies have shown statistically significant negative change in their RONW in both the time frame. Only the small cap stock splitting companies show positive change in their RONW but the change is insignificant.

Analysis of EPRVS

A brief summary of the results found in the analysis of EPRVS of the sample is presented in Table-3A.

The findings of the analysis of EPRVS of the sample companies are something different from the findings of the analysis of ROCE and RONW. There is improvement in the EPRVS of the most of the stock splitting companies. 63.01% and 71.23% of the total stock splitting companies have shown increment in their EPRVS in the immediate and sustainable time frame respectively. Whereas, 58.90% and 63.01% of the total control companies are having positive change in their EPRVS in the immediate and sustainable time frame respectively.

Now separately for the three groups the findings are described below:

Large Cap: In case of large cap group 63.33% of the stock splitting companies have shown positive change in their EPRVS immediately and thereafter, the percentage of stock splitting companies with positive change in their EPRVS become 70 % in the long run. When control companies of this group are concerned, 66.67% of the control companies have improved their EPRVS in the immediate as well as in the sustainable time frame.

Mid Cap: 50% of the mid cap stock splitting companies have shown positive and the rest 50% have shown negative change in their EPRVS in the immediate time frame. But in the long run the percentage of companies with positive change in the EPRVS becomes 65.38%. Similarly, 57.69% and 61.54% of the control companies of this group have found improvement in their EPRVS in the immediate and sustainable time frame respectively.

Small Cap: In case of stock splitting companies of the small cap group, 82.35% of the companies have displayed improvement in their EPRVS both in the immediate and the sustainable time frame.

Table 3 A

Summarised result of EPRVS of sample companies for pre and post stock split											
Total Sample Companies	**73**										
stock splitting co.	negative	%	positive	%	**Control co.**	negative	%	positive	%	Zero	%
immediate change:	27	36.99	46	63.01	immediate change:	28	38.36	43	58.90	2	2.74
sustainable change:	21	28.77	52	71.23	sustainable change:	26	35.62	46	63.01	1	1.37
Large cap:	**30**										
stock splitting co.	negative	%	positive	%	**Control co.**	negative	%	positive	%	zero	%
immediate change:	11	36.67	19	63.33	immediate change:	10	33.33	20	66.67	1	3.33
sustainable change:	9	30.00	21	70.00	sustainable change:	10	33.33	20	66.67		
Mid cap	**26**										
stock splitting co.	negative	%	positive	%	**Control co.**	negative	%	positive	%	zero	%
immediate change:	13	50.00	13	50.00	immediate change:	10	38.46	15	57.69	1	3.85
sustainable change:	9	34.62	17	65.38	sustainable change:	9	34.62	16	61.54	1	3.85
Small cap:	**17**										
stock splitting co.	negative	%	positive	%	**Control co.**	negative	%	positive	%		
immediate change:	3	17.65	14	82.35	immediate change:	8	47.06	9	52.94		
sustainable change:	3	17.65	14	82.35	sustainable change:	7	41.18	10	58.82		

Where, only 52.94% and 58.82% of the control companies in this group have shown positive change in their EPRVS in the immediate and sustainable time frame respectively.

Paired Sample T-test of EPRVS

Now, the paired T- test has been applied to see the statistical significance of the above findings. A short description of the result of the test is given below:

Total sample companies: It is clear from the results of paired t-test that, the positive change in the EPRVS of the total stock splitting companies is insignificant in the immediate and sustainable time frame. Whereas, the immediate change in the EPRVS of the total control companies is positive but insignificant and sustainable change is positive as well as statistically significant.

Large Cap: In case of large cap group, stock splitting companies along with their control companies have shown insignificant positive change in their EPRVS both in the immediate and sustainable time frame.

Mid Cap: In this case, the immediate as well as the sustainable change in the EPRVS of the stock splitting companies are negative and statistically insignificant. On the other hand, the EPRVS of the control companies have changed positively but the change is also insignificant.

Small Cap: The findings of the small cap group companies are again different from that of the other two groups. Here immediately the EPRVS of the stock splitting companies have shown insignificant positive change and there after the change become statistically significant in the long run. Where, the control companies of this group are found to have insignificant positive change in their EPRVS.

Analysis of DPRVS

The findings of the analysis of DPRVS of the sample companies for the immediate and sustainable time frame are briefly presented in table – 4A.

Total sample companies: percentage of total stock splitting companies with positive immediate change in their DPRVS is more than that with negative immediate change but the percentage of companies with no change in dividend payment or they have paid zero dividend is 43.84% that is more than the percentage of companies with positive and negative change. But sustainably the maximum percentage of stock splitting companies have improved their DPRVS. When total control companies are concerned, the percentage of control companies with immediate positive change in their DPRVS is more than that of the stock splitting companies.

Large Cap: Most of the large cap stock splitting companies have shown no immediate change or negative immediate change in their DPRVS. But in the long run the percentage of stock splitting companies with improvement in their DPRVS become the most i.e. 53.33%. On the other hand most of the control companies in this group have faced no change or zero dividend payment in the immediate time frame. But in the sustainable time frame the control companies performed very well compared to the stock splitting companies as far as their DPRVS is concerned.

Mid Cap: Immediately most of the stock splitting companies of this group have shown improvement in their DPRVS but thereafter, the percentage of stock splitting companies with improvement in their DPRVS has decreased and the percentage of companies with no change or zero dividend payment is highly increased to 38.46% from 7.69% earlier. Whereas, control companies of this group have performed so well compared to stock splitting companies in the long run.

Small Cap: The results of the analysis of the DPRVS of small cap companies is again differ from that of the other two groups. Here, at first the percentage of companies with immediate positive change and immediate no change or zero dividend payment are same i.e. 47.06% but in the long run most of the stock splitting companies (i.e. 70.59%) have shown improvement in their DPRVS.

Table 4A

Summarised result of DPRVS of sample companies for pre and post stock split

Total Sample Companies 73 stock splitting co.	negative	%	positive	%	zero	%	Control co.	negative	%	positive	%	zero	%
immediate change:	14	19.18	27	36.99	32	43.84	immediate change:	6	8.22	31	42.47	36	49.32
sustainable change:	18	24.66	45	61.64	10	13.70	sustainable change:	9	12.33	48	65.75	16	21.92
Large cap: 30 stock splitting co.	negative	%	positive	%	zero	%	**Control co.**	negative	%	positive	%	zero	%
immediate change:	9	30.00	7	23.33	14	46.67	immediate change:	2	6.67	12	40.00	16	53.33
sustainable change:	8	26.67	16	53.33	6	20.00	sustainable change:	2	6.67	22	73.33	6	20.00
Mid cap 26 stock splitting co.	negative	%	positive	%	zero	%	**Control co.**	negative	%	positive	%	zero	%
immediate change:	7	26.92	17	65.38	2	7.69	immediate change:	3	11.54	14	53.85	9	34.62
sustainable change:	2	7.69	12	46.15	10	38.46	sustainable change:	4	15.38	18	69.23	4	15.38
Small cap: 17 stock splitting co.	negative	%	positive	%	zero	%	**Control co.**	negative	%	positive	%	zero	%
immediate change:	1	5.88	8	47.06	8	47.06	immediate change:	1	5.88	5	29.41	11	64.71
sustainable change:	3	17.65	12	70.59	2	11.76	sustainable change:	3	17.65	8	47.06	6	35.29

As far as control companies of this group are concerned, they also performed well in the long run but only 47.06% of the control companies with positive change in their DPRVS that is considerably less than that of the stock splitting companies of this group.

Paired Sample T-test of DPRVS

Now, the result of paired T-Test of the above findings is briefly described as follows:

Total Sample companies: From the findings of T- test it is clear that considering the total stock splitting companies none of the immediate or sustainable change in their DPRVS is significant but in case of total control companies, they showed statistically significant positive change in their DPRVS in the sustainable time frame.

Large Cap: When the analysis is done separately for the three groups, it is found that immediate change in the DPRVS after the stock split of the large cap stock splitting companies is negative as well as statistically significant and in the long run this change become insignificant. But the control companies of this group have shown that both the immediate and the sustainable change in their DPRVS are positive as well as significant.

Mid Cap: There is no significant change in DPRVS of the stock splitting companies of Mid Cap group found in both the immediate and sustainable time frame. Whereas, the control companies have found significant positive change in their DPRVS in the long run.

Small Cap: Considering the DPRVS of the small cap stock splitting companies, they performed very well compared to the other two groups and showed statistically significant positive change in their DPRVS both in the immediate and sustainable time frame. On the other hand the change in DPRVS of the control companies of this group are insignificant.

Analysis of MV/BV Ratio

A summary of the results of the analysis of MV/BV Ratio of the sample companies for pre and post stock split is presented here below in table- 5A.

63.01% in both the time frame compared to that with positive change.

Large Cap: In case of large cap stock splitting companies, more percentage of companies got positive change in their MV/BV Ratio and in the longer time period the percentage of that companies have increased 10% more. But maximum of the control companies of this group got negative change in their MV/BV Ratio both in the immediate and longer time horizon.

Mid Cap: Most of the mid cap stock splitting companies are having negative change in their MV/BV Ratio but sustainably, the percentage of stock splitting companies with positive change and with negative change become equal i.e. 50%. On the other hand, the control companies of this group showed their bad performance compared to the stock splitting companies. 69.23% of the control companies destroyed their value or found reduction in their MV/BV Ratio both in the short and longer time horizon.

Small Cap: The results of the analysis of MV/BV Ratio of the small cap stock splitting companies again found different from the other two groups. In this case more percentage of companies have deteriorated their values and this percentage become 58.82% in the long term from 52.94% in the immediate term. But again most of the control companies of the small cap group are having negative change in their MV/BV Ratio. 70.59% of the control companies have deteriorated their values both in the short and long term which is much more than the stock splitting companies with negative change.

Paired Sample T-test of MV/BV Ratio

The summary of the results of paired t- test of the above findings is described below:

The results of the paired t-test clearly indicates that in case of the whole sample, stock splitting companies got positive change in their MV/BV Ratio but the change is insignificant from statistical perspective. Whereas, most of the total control companies are having insignificant negative change in their MV/BV Ratio.

Table 5 A

Summarised result of MV/BV Ratio of sample companies for pre and post stock split									
Total Sample Companies	**73**								
stock splitting co.	negative	%	positive	%	**Control co.**	negative	%	positive	%
immediate change:	40	54.79	33	45.21	immediate change:	46	63.01	27	36.99
sustainable change:	34	46.58	39	53.42	sustainable change:	46	63.01	27	36.99
Large cap:	**30**								
stock splitting co.	negative	%	positive	%	**Control co.**	negative	%	positive	%
immediate change:	14	46.67	16	53.33	immediate change:	16	53.33	14	46.67
sustainable change:	11	36.67	19	63.33	sustainable change:	16	53.33	14	46.67
Mid cap	**26**								
stock splitting co.	negative	%	positive	%	**Control co.**	negative	%	positive	%
immediate change:	17	65.38	9	34.62	immediate change:	18	69.23	8	30.77
sustainable change:	13	50.00	13	50.00	sustainable change:	18	69.23	8	30.77
Small cap:	**17**								
stock splitting co.	negative	%	positive	%	**Control co.**	negative	%	positive	%
immediate change:	9	52.94	8	47.06	immediate change:	12	70.59	5	29.41
sustainable change:	10	58.82	7	41.18	sustainable change:	12	70.59	5	29.41

From the above table it is observed that more stock splitting companies have faced negative immediate change in their MV/BV Ratio but in the sustainable time frame, the number of companies having improvement in their MV/BV Ratio has been increased. Whereas, the percentage of control companies with negative change in their MV/BV ratio is much more i.e.

When the three groups are concerned separately, it is found that, stock splitting companies of all the three groups have improved their values or shown positive change in their MV/BV Ratio but, the changes insignificant both in the immediate and sustainable time frame. On the other hand, the control companies of all the three groups have deteriorated

their values i.e. found negative change in their MV/BV Ratio but the change is insignificant in all the cases except in case of sustainable change in their MV/BV Ratios of the mid cap and small cap control companies those are having significant negative change in their MV/BV Ratio.

Thus on the basis of the analysis of the MV/BV Ratio of the sample companies it can be said that the stock splitting companies of all the three groups generated more value compared to the control companies but the changes are insignificant.

After the analysis of above five traditional tools for measuring the financial performance of sample companies, modern tools like MVANW and SVANW have been analysed properly to see the immediate and sustainable change in the value generating ability of the sample companies.

Analysis of MVANW

MVA indicates the market value addition made by the company. A brief summary of the results found in the analysis of MVANW of the sample companies as a whole and separately for the three groups is presented in table- 6A.

their MVANW are 65.38% and 61.54% in the immediate and sustainable time frame respectively.

Small Cap: As far as the stock splitting companies of small cap group are concerned, 52.94% of the companies have destroyed their market value immediately and this percentage become 70.59% in the long run. On the other hand, similar result is found in case of control companies of this group.

Paired Sample T-test of MVANW

Now, paired sample T-test has been applied to see whether the above findings are statistically significant or not. The result of the paired t-test is briefly described below:

From the results of T-test it is clear that most of the stock splitting companies destroyed their market value significantly both in the immediate and sustainable time frame. Whereas, most of the total control companies also show the negative change in their MVANW but the change is insignificant.

Large Cap: Large cap stock splitting companies as well as their control companies do not have any significant change in their MVANW both in the immediate and sustainable time frame.

Table 6 A

Summarised result of the analysis of MVANW for the pre and post stock split									
Total Sample Companies 73									
stock splitting co.	negative	%	positive	%	**Control co.**	negative	%	positive	%
immediate change:	48	65.75	25	34.25	immediate change:	40	54.79	33	45.21
sustainable change:	48	65.75	25	34.25	sustainable change:	45	61.64	28	38.36
Large cap: 30									
stock splitting co.	negative	%	positive	%	**Control co.**	negative	%	positive	%
immediate change:	17	56.67	13	43.33	immediate change:	14	46.67	16	53.33
sustainable change:	18	60.00	12	40.00	sustainable change:	17	56.67	13	43.33
Mid cap 26									
stock splitting co.	negative	%	positive	%	**Control co.**	negative	%	positive	%
immediate change:	22	84.62	4	15.38	immediate change:	17	65.38	9	34.62
sustainable change:	18	69.23	8	30.77	sustainable change:	16	61.54	10	38.46
Small cap: 17									
stock splitting co.	negative	%	positive	%	**Control co.**	negative	%	positive	%
immediate change:	9	52.94	8	47.06	immediate change:	9	52.94	8	47.06
sustainable change:	12	70.59	5	29.41	sustainable change:	12	70.59	5	29.41

The above table clearly indicates that most of the total stock splitting companies failed to add market value. 65.75% of the total stock splitting companies are having negative change in their MVANW both in the immediate and sustainable time frame. Whereas, 54.79% and 61.64% of the total control companies destroyed their market value in the immediate and sustainable time frame respectively.

Large Cap: 56.67% and 60% of the large cap stock splitting companies against 46.67% and 56.67% of the control companies have destroyed their market value in the immediate and sustainable time frame respectively.

Mid Cap: Most of the mid cap stock splitting companies have immediately destroyed their value. 64.62% of the stock splitting companies of this group are having negative change in their MVANW in the immediate time frame and thereafter, it reduced to 69.23% in the sustainable time frame. Whereas, the percentage of control companies with negative change in

Mid Cap: Most of the mid cap stock splitting companies are having significant reduction in their MVANW both in the immediate and longer time horizon. Whereas, the control companies also destroyed their value but the change is insignificant.

Small Cap: Most of the Stock splitting companies of this group along with their control companies have destroyed their market value. The deduction in the value is insignificant in the short term but it become significant in the longer time horizon. Thus, the mid cap stock splitting companies have destroyed their market value very significantly compared to their control companies and compared to the other two groups.

Analysis of SVANW

The findings of the analysis of MVANW and SVANW are almost similar. A brief summary of the results of analysis of SVANW of the sample companies for the immediate and sustainable time frame is presented in table- 7A.

Table 7A

A summary of the findings of the analysis of SVANW for the pre and post stock split									
Total Sample Companies	**73**								
stock splitting co.	negative	%	positive	%	**Control co.**	negative	%	positive	%
immediate change:	48	65.75	25	34.25	immediate change:	40	54.79	33	45.21
sustainable change:	48	65.75	25	34.25	sustainable change:	44	60.27	29	39.73
Large cap:	**30**								
stock splitting co.	negative	%	positive	%	**Control co.**	negative	%	positive	%
immediate change:	17	56.67	13	43.33	immediate change:	14	46.67	16	53.33
sustainable change:	18	60.00	12	40.00	sustainable change:	15	50.00	15	50.00
Mid cap	**26**								
stock splitting co.	negative	%	positive	%	**Control co.**	negative	%	positive	%
immediate change:	22	84.62	4	15.38	immediate change:	17	65.38	9	34.62
sustainable change:	18	69.23	8	30.77	sustainable change:	16	61.54	10	38.46
Small cap:	**17**								
stock splitting co.	negative	%	positive	%	**Control co.**	negative	%	positive	%
immediate change:	9	52.94	8	47.06	immediate change:	9	52.94	8	47.06
sustainable change:	12	70.59	5	29.41	sustainable change:	13	76.47	4	23.53

From the above table it is clear that most of the total stock splitting companies i.e. 65.75% have reduced their value to the shareholders both in the immediate and sustainable time frame. Whereas, this percentage is lower in case of total control companies. 54.79% and 60.27% of the total control companies have negative change in their SVANW immediately and in the longer time horizon respectively.

Large Cap: Separately for the large cap group, 56.67% and 60% of the stock splitting companies have shown negative change in their SVANW compared to 46.67% and 50% in the immediate and sustainable time frame respectively.

Mid Cap: Most of the mid cap group stock splitting companies (i.e. 84.62%) have destroyed their value to the shareholders immediately though, this percentage become reduced to 69.235 thereafter in the sustainable time frame. But the percentage of control companies with negative change in their SVANW is less than that of the stock splitting companies.

Small Cap: Here again the findings of the stock splitting companies and the control companies are same for the immediate time frame. Immediately, 52.94% of the stock splitting companies and the same percentage of their control companies have reduced their value to the shareholders. Thereafter, this percentage become much more i.e. 70.59% of the stock splitting companies and 76.47% of the control companies of this group have destroyed their value to the shareholders in the longer time horizon.

Paired Sample T-test of SVANW

Now, again the paired T-test has been applied to see the statistical significancy of the above findings. The result of the test is shortly described below:

Total sample companies: From the results of paired t –test it is clear that most of the total stock splitting companies are found to have very significant negative change in their SVANW. Whereas, the control companies have shown insignificant negative change in their SVANW in both the time frame.

Large Cap: The stock splitting companies along with their control companies do not have any significant change in their SVANW.

Mid Cap: As far as, stock splitting companies of mid cap group are concerned, most of the companies have significantly destroyed their value to the shareholders to much extent. Whereas, the change in SVANW of the control companies are negative but insignificant in both the time frame.

Small Cap: The change in the SVANW of the small cap stock splitting companies along with their control companies are not significant in the immediate time frame but thereafter, most of the stock splitting companies as well as control companies have destroyed their value to the shareholders significantly.

Thus, the deterioration of value to the shareholders in case of large cap group stock splitting companies is insignificant but mid cap stock splitting companies have destruct their value significantly to much extent whereas, the small cap group stock splitting companies have destroyed their value significantly in the sustainable time frame similarly as their control companies.

CONCLUDING REMARKS

Stock split is considered as a tool that signals the good performance and a bright future prospect of a company. The main motive of this study is to verify the above concept by examining the performance of the stock splitting companies for the pre and post stock split period. The immediate and sustainable change in the traditional tools of measuring financial performance like ROCE, RONW, EPRVS, DPRVS and MV to BV ratio and the modern tools like MVANW and SVANW of the stock splitting companies are computed and then compared with their control companies.

Based on the above concept, all the above mentioned tools should be changed positively after the stock split to show the better performance and bright future prospect of the stock splitting companies. But in our study, the findings are totally different. In case of analysing the whole sample, the most of the total stock splitting company have shown insignificant change in all the five traditional tools and significant negative change in MVANW and SVANW. But separately for the large cap group, significant negative change in ROCE, RONW in both the time frames, immediate significant negative change in DPRVS, insignificant change in EPRVS, MV/BV Ratio, MVANW and SVANW are shown. Whereas in case of mid cap group, there are insignificant change in ROCE, EPRVS, DPRVS, MV/BV Ratio, sustainable significant negative change in RONW, very significant immediate and sustainable negative change in MVANW and SVANW found. But in case of the small cap group the findings are much more differ from the other two groups. There are insignificant positive change in ROCE, RONW and MV/BV Ratio, significant positive sustainable change in EPRVS, significant positive immediate and sustainable change in DPRVS, but significant negative

sustainable change in MVANW and SVANW found in case of small cap stock splitting companies.

Finally, the findings of the study indicate that large cap and mid cap group stock split companies not performed well after stock split and they also destroyed value to the shareholders but in case of small cap stock splitting companies, their financial performance have been better after the stock split compared to the other two groups but, at the same time they also failed to generate value to the shareholders in the sustainable time frame. In case of large cap and mid cap groups the performances of control companies are comparatively better than the stock splitting companies. But small cap stock splitting companies performed better than their control companies.

Thus, from this study it can be concluded that the large cap and mid cap stock splitting companies do not satisfy the signalling concept of stock split whereas, the small cap stock splitting companies have satisfied the signalling concept to much extent by their good financial performance after the stock split though, in spite of their better performance, their value to the shareholders have been destroyed in the sustainable time frame (based on the analysis of their MVANW and SVANW).

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