Section switching stock market price effect in the Indian capital market and the policy implications thereof

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This paper reports new findings on an important area of research on the effect of market organization on shareholders' wealth. Stock exchanges in developed countries are licensed to organize auction trades as competing markets. The examples are those of the New York Stock Exchange for large and liquid firms and the AMEX for the smaller firms. Securities markets in developing countries are organised as sections within a stock exchange. For instance, the Bombay Stock Exchange has different "liquidity" classes of firms (A; B1; B2; C) in the same exchange. The research and policy questions as to whether the market participants value or do not value the different classes have yet been answered. This paper provides estimates of the share price reactions to the up-switching and down-switching of scrips from one section to another. This study reveals that there is evidence of the market participants depreciating the share values of firms that are switched down to a lower section. When firms are up-switched, there is some weak evidence that the share prices appreciate, however, there is especially strong evidence of improved liquidity for low-liquid firms. However, there is a substantial post-announcement drift in both cases, which would have us believe that there is a lack of semi-strong form efficiency in this market place. On liquidity, there is substantial change in the liquidity following the switches. Overall, the results indicate that the market organization does affect the valuation process and that liquidity improvement to exchange-disclosures of switches is significant.

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1. Introduction and Literature

Section switching is a decision taken by the stock exchange organizers, whereby a listed scrip is moved, for purposes of trading, from a presumed *low*- or *high*-quality section to a presumed *high*- or *low*-quality section, that is, either up or down the quality bands. In the Indian market, Bombay Stock Exchange (BSE), the organizers make the switch from time to time based on criteria not revealed to the public, but announced a number of days prior to the actual switch. Hence switching in this market place is involuntary as is also the case in Tokyo, which implements switches in September each year. This is termed section switching in this paper. In some markets, the switch is one way, but commonly the switch can be from a lower section to higher or from a higher section to lower section. For example, in the Tokyo Stock Exchange, when Japan was a miracle economy, the switches were predominantly to Section 1 from Section 2. In the late 1990s with such bear markets as is prevalent in Japan, a lot of switches are taking place downwards from Section 1 to Section 2. In the BSE, the switches have always been both ways. As will be clearer in a later section of this paper, there were more down-switches than up switches.

While this mechanism differs in different markets, the basic belief is that the "more liquid and large" stocks should be traded in "high-quality" sections and that the lower quality sections will trade less liquid stocks of smaller firms, thereby attracting a price premium for lower liquidity stocks. The typical objective for having different sections as pointed out in Lamba and Ariff (1997) is to segregate trading interest to a wider spectrum of investors' interests. Credible *public policy* requires that the market trades a wide range of both high quality and low quality stocks in a market, and the section switches are meant to ensure that the investors' demand for variety is catered for through this mechanism.

The widespread practice of creating independent market organizers to compete with one another as in the developed markets – NYSE versus AMEX - requires that the technology and management costs be repeated across each organization. Such expensive arrangement may be deemed correct as such a form of organization provides the rivalry, which is needed for maximum competition among the market makers in what are already very liquid markets. However, if the capital costs are considered, it is prohibitive for smaller markets in the less-resource-rich developing countries to create competing exchanges. Hence, there is a preference to create multi-class listing within the same

exchange and then switching them periodically on some criteria. It is more economical, nevertheless not as competition promoting as the other form of competing markets.

The important questions then are, "What is the cost of this decision?" and "Does the market discriminate the presumed quality differences?". It may be that the market organization in terms of its disclosure quality/management is so poor that the market is unable to price the quality difference effectively by clear-cut price and volume reactions consistent with the efficient market hypothesis (Fama 1970: 1991). Or that the investors ignore the switch event if a given market is perceived as an inefficient market place. Therefore there are three related questions for addressing the policy issue:

- *What is the cost of section switching as revealed from section trading at the time of decision imposed on the stock when market organisers make switching decision?*
- *Does the market discriminate the presumed quality difference? If so, what is the price of quality?*
- *If the market does price the price of quality difference(s), then does a given market exhibit the efficiency expected of the market to make this discrimination?*

The literature on market organization effect due to switching decisions is sparse. We review and provide a short summary of the directly relevant papers in this section. There are a number of theoretical reasons, apart from the applied aspects, in the three questions posed above. These may be the wealth and liquidity effects of switching. None of these issues attracted inquiry in most countries (only the US, Japan, Malaysia and Singapore markets have been researched to date). Baker-Edelman (1990), Lamba-Ariff (1997), Ariff, Lamba and Shamsher (1999) are the only published papers on this topic. These papers addressed the volume and price effects of up switching. In this Indian study, we have sample of firms that were down switched, hence, this investigation is of special relevance, adding new knowledge to the literature.

The published papers examined firms switching from section 2 to section 1 (upward switches only) in Japan and Board switching from Board 2 to Board 1 in the other two countries. These studies showed that (a) there is a cost to switch, (b) there is a reward for quality differences in markets, and (c) the markets investigated (Japan, Malaysia, Singapore and the U.S.) showed efficiency in pricing the stocks. The findings also points out that upward switch may not be adequate for the purpose of fostering market liquidity of low-liquidity firms, as there is a significant trading volume reaction of an impending switch to section 1 in Japan. A finding like that is an important message

for the stock exchange for careful consideration about the possible effects on the pricing and liquidity behaviour of stocks being switched from an exchange's lower section to its higher section.

In India, BSE has different sections, which includes A, B1, B2, C and Z. Section C trades odd-lot scrips while Z are the scrips temporarily suspended for a number of reasons, including non-payment of listing fees. Hence, the switching among A, B1 and B2 represent the cases similar to the ones covered in the literature.[1] BSE periodically switches stocks from B1 to B2 and vice versa, something not yet studied. There is no study on Indian markets on this topic about the effectiveness of switching and the relevance of having different sections in an exchange.

This paper is divided into four sections. The introduction in section one included a short review of the limited number of papers on this topic. Section two describes the data used in the paper and section three and four present the findings and concluding remarks.

2. Data and Methodology

2.1 Data

PROWESS database provided by CMIE[2] has all the data relating to the stock prices and volumes. BSE publishes the list of the stocks switched from and to B1 to B2, along with the announcement dates and date of commencement of switched trading. We used section switches that occurred on 12th January 2001 as our sample.[3] On 12th January 2001 BSE moved 500 firms from B1 to B2 (down switches) and 179 firms from B2 to B1 (up switches).[4] We could only find 71 stocks that moved from B1 to B2 and 42 stocks that moved from B2 to B1 that had continuous trading during the study period. The loss of observation is due to severe thinness in trading. Hence, the sample could not be extended to cover more than those numbers of cases. Tables 1 and 2 lists the stocks used in the study. BSE 100 Index has been used as the market bench-mark. The down-switched firms had an average capitalization of 179 crores whereas the up-switched firms had a capitalisation of 490 crores. Obviously the firms switched to the higher section B1 had higher capitalisation at the time of the switch by a factor of about 1.5.

(insert tables 1 and 2 about here)

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[1] There would be no cases of switching between C and Z as these are just records of odd-lot (c) and suspensions (Z). There were insufficient cases of switches to and from A. Hence; this section was not included for study.

[2] Centre for Monitoring Indian Economy, based in Mumbai, India.

[3] Our search for announcements in public records for other periods revealed that there are no other announcements captured in a public record. Hence, we were not able to extend the sample to more than the sample in 2001.

[4] The web site is http://www.bseindia.com.

2.2 Methodology

The traditional event study methodology is applied to investigate the market reactions to the pre- and post-switching announcements. The basic outline follows the well established Brown and Warner (1980: 1985) method.[5] The event window period over which the reactions are measured is -20 to +20 days.[6] The abnormal returns are estimated based on the *market-adjusted* method over the test windows before and after event date. The general notation for computing the adjusted return is as follows:

$$AR_{jt} = R_{jt} - R_{mt} \qquad (1)$$

Where AR_{jt} : the abnormal return of stock j at time t,

R_{jt} : the return of stock j at time t, and

R_{mt} is the market index return at time t computed from BSE 100 Index.

The average abnormal return for the event window period:

$$AAR_{jt} = 1/n \, \Sigma_{j=1, \ldots, n} AR_{jt} \qquad (2)$$

The cumulative abnormal return during pre-switch period:

$$_{-20}CAR_{-1} = \Sigma^{t=-1}_{t=-20} AAR_{jt} \qquad (3)$$

The cumulative abnormal return during post-switch period:

$$_{0}CAR_{+20} = \Sigma^{+20}_{t=0} AAR_{jt} \qquad (4)$$

Test statistic is:

$$t\,(AR) = AAR_{jt} \,/\, SEE \qquad (5)$$

where, $$SEE = (\sigma^2/n)^{1/2} \qquad (6)$$

t statistic for CAR is:

$$t\,(CAR) = {}_{-j}CAR_{-1} \,/\, SEE_{-j}CAR_{-1}$$

where, $SEE_{-30}CAR_{-1} = CAR/(T\sigma^2\text{-}30)^{1/2}AARjt_{-1}$

In order to test whether liquidity has been significantly abnormal during the event period we can adopt the method similar to the above with slight variation as described below.

Estimating abnormal volume:

Step 1:

Calculating Daily Volume per share (V_{jt}):

Vjt = number of traded volume / number of outstanding shares

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[5] Switching is an event that occurs in a clustered manner. That is, switching occurs on one particular date, when many firms undergo the same event. Brown and Warner *op cit*., who studied the robustness of statistical tests for clustered events, reported evidence on what are appropriate methods to use for such events. They concluded that the t-tests on clustered event are statistically reliable as long as the abnormal returns are computed using *other than* the mean adjusted return method. We use the market adjusted method, and so the clustered event is unlikely to affect the reliability of the reported results: see Brown and Warner (1980; 233-234).

[6] Initial investigations with –50 and +30 revealed that the reactions to the news were more during the –20 and +20 period. Therefore, the final test window was adopted as mentioned.

Step 2:

Calculating Daily Average Volume per share (AV_{jt}):

$AV_{jt} = 1/n \ \Sigma^{-300}_{t=-51} V_{jt}$ (from -300 to -50th day before the event).

The share prices were end-day closing prices and do not include dividend streams. The volume of shares traded is normalised by dividing the traded volume by the outstanding shares before computing the abnormal volume statistics. The method adopted has a wide following in both the directly relevant literature and also in other relevant event studies.

3. Findings: Price and Liquidity Effects

The findings of this research may be interpreted under three separate headings. First we present the *up-switch* effect in the first sub-section: sub-section two presents the *down-switch* effects and the overall results are interpreted in sub-section three.

3.1 Up switch Behaviour

Price Effect: The up switch is designed by the organizers in the BSE to convey to the market participants a new piece of information about the behaviour of the up-switched companies. Though as mentioned earlier the criteria used for the decision to up-switch has not been made public in the Indian capital market, the norm is that the up-switch is a consequence of (a) improved volume of trading of the erstwhile shares in a lower quality section, (b) that the capitalization of the company has increased such that the company is a larger market player at the time of the switch, and (c) that the shares are of such higher quality that the up switch may signal the mutual funds/institutions to add these shares to their funds. In short the up-switch is a stamp of improved quality of the company compared with the period before the BSE organizers initiated the switch involuntarily.

Thus the up-switch brings the stock to investor's attention, reduces the liquidity costs, and hence constitutes a signal of good news. Information economics literature and the studies cited in the earlier section of this paper indicate that in other market places (Japan, Malaysia and Singapore) this news leads to two distinct effects. First, share returns around the time of announcements of the switch increases significantly, and the price increases are sustained in the period following the announcement; second, the pre-switch low-volume shares increases the trading volume in the post-switch period significantly; and third, the pre-switch high-volume shares do not get much change in trading volume subsequent to the switch. Therefore, the initial expectations are that the same patterns of share returns and volume behaviour may be present in the BSE under study.

The information presented in the tables 3 and 4 refers to the share returns behaviour around the time of (a) the announcement and (b) effective date of switch of a large number of shares from a lower section to a higher section (Table 3) and from a higher section to a lower section (Table 4).

(insert tables 3 and 4 about here)

The dates in Column 1 indicate that the effective date of the switch was on 22/01/01 and that the announcement to switch took place six trading days before the switch date. This indicates a quick turnaround in implementation: in some markets, the interval ranges from about 5 trading days to about 20 trading days. In itself, it suggests that the BSE administration is very speedy in implementing announced decisions. This compares well with the interval in the Tokyo exchange, where there is no announcement of the switch, but the observed effect was registered at about the same interval of time.

The price reactions around these two relevant dates in this study indicate two interesting results. First, the adjusted returns we have computed for these shares are predominantly *declining*. Seventeen of the abnormal returns prior to the switch (AR) are positive and 31 are negative. This is very different from the return trends observed in other markets. In other markets studied, most of the returns had positive trends. In itself this is puzzling. It is not due to the methodology since the adjustment procedure adopted is superior so that there are no reasons for errors in the computing method.

Theory suggests that share price formation has two components: a component related to the market in developed markets accounts for about a third of the changes in returns, on average. The remaining two-thirds of the return change arise from company specific factors, one of which is the up switch we are measuring. It is reasonable that the universe of firms undergoing "up switching" is concurrently undergoing another possible firm-specific non-switch influence at the time of the event under study. This is puzzling, and is unique to this market. Our conjecture is that there is something else systematically reducing the positive returns downwards. This influence is unobservable, and we leave it without speculating a reason for this.

The impact of this unidentified influence is such that, at the time of announcements of the up-switch, the share returns actually goes down, by 2.702 % (or 0.02702) though not statistically significant. However, at three periods (effective date, the day before and the day after), the price reaction is positive with 2.782%, 3.203% and 0.811% respectively. These returns suggest that the market participants value the announcement as being good news thus changing the share prices by such large changes

as shown in the three days. The changes could have been even larger, if there had been no negative influence from the unidentified factor discussed. This up-switch effect during the 3 days constituting the event dates are statistically significant as shown against the AR in the column titled t-value. This is consistent with what prior studies had observed in other Asian and non-Asian markets. The cumulated value of the three good news ARs amounts to 6.80%, which is very large, and is statistically significant. That is the most interesting finding from this study. There are some price changes in the post-switch period with large changes: for example, on 12/02/01 there is a large change of 1.785%, which is statistically significant with a t-value of 7.083. At most of the other times, the unidentified negative price influence is depressing the returns systematically on all the periods.

From these observations on abnormal price changes, it is evident that the Indian stock exchange has the trading practices in place to convey the switch event as a good news event. It draws a significant price impact, changing the value of the up-switched firms by a 6.80% around the time of the actual date of the switch. Since the average capitalization value of these firms is Rs. 20,610.29 crores, a 6.80% change in value means that the upswitched firms in the sample had a one-time gain of Rs.1,401.5 crores. This is the economic benefit that the BSE is able to release on 42 affected firms. The other effects are non-monetary in that there would be also an increased institutional interest on these firms. The policy objective of the exchange organizer is certainly achieved by the annual switch action taken by them.

Liquidity Effect: We also studied the volume behaviour to see if there are any conclusions we could draw as relevant for liquidity of the affected firms. The up-switch is expected to improve volume activity – recall institutional interest and attention – and thus reduce the liquidity costs for this class of firms. To do this, we first divided the sample into two classes: the top 40% of the volume and the bottom 40% of the volume to represent respectively those that had high volume and those with low volume in the year prior to the switch. Volume was standardized by expressing the traded volume as a ratio of traded-to-outstanding shares. It stands to reason that the larger the outstanding shares the larger the trading would be. Thus, the procedure standardized the variable for this bias.

The Table 5 is a summary of the volume behaviour of the up-switched company shares.

(insert Table 5 about here)

The table has two parts, one for the returns of the low liquidity cases and one for high liquidity cases. The returns for these two cases are also computed relative to the announcement on 12/01/02 and actual switch day, which is on 22/01/01. This indicates whether the returns of high liquidity firms differ from low liquidity firms. Once again there appears to be a volume effect arising from the unidentified factor that is leading, in this case, to a declining return more than increasing return. There were 35% increases in returns against 65% declines in returns for the low-liquidity cases. Obviously the trend observed in other markets of a generally increasing volume for good news of up-switch is absent here because of the influence of the missing unknown variable.

However, as with the abnormal returns in prices, the abnormal returns in liquidity based returns went up on the day of the actual switch (by 1.293%) and the day before (by 0.684%) in accordance with the good news effect predicted by the information economics theory. These two changes are statistically significant as these are more than two standard errors away from the mean, thus are highly significant. Liquidity changes in other research showed that the share return changes were significant only for the low-liquidity cases, and not for the high-liquidity cases. But in the Indian market place, it appears that the erstwhile high-liquidity cases also had significant changes on the effective date (of 4.50%) and the day before (of 4.3%) and the day after (of 1.55%) that date. The liquidity improvements in the high-liquidity cases are much larger than the liquidity changes of the low-liquidity: this result is the only time high-volume switch cases have even more high volume changes as a result of the up-switch. This is a unique finding found in the Indian market place.

One could only speculate why there is this preference for high volume. One potential factor for share demand in the Indian market is the retail investors ’dominance of the market. Size of firm as well as the liquidity of trading is often a sign of quality of firms. Given the fact that the retail investors are likely to be less informed, it is likely that for this class of investors, the up-switch confirms that such stocks are better quality stocks than are the low-liquidity stocks. Theory of intermediation costs would also lend support to this argument that choosing these up-switched stocks would reduce the liquidity costs of retail investors substantially.

In summary, it is reasonable to make a case that the price and volume reactions to the involuntary switch perpetrated by the Indian exchange officials leads to a good news effect. First, the effects are not found at the time of announcements, as is normally the case in all efficient markets, as per theory. Observing it at the time of actual switch

could mean that the information released is actually ignored till the exchange actually changes the section in which the share is listed. This may well be small evidence that the financial press is not widely available to investors. Alternatively, the investors do not believe in the announcements till the action is implemented. If the correct reason is the latter, then it means a more cautious investing public than is normally found in other markets with institutional investor dominance. This raises questions of information veracity and lack of analytical-intensity. However, it needs further research to be sure of these conjectures.

The price effect and the liquidity effect are statistically significant, and are large enough to lead to substantial gains of 6.80% for the switched firms as increased capitalization. Also, the volume activity increases over the three days to 10.4% for high-liquidity firms: the number for low-liquidity firms is 2.10%. That these effects are consistent with theory is noteworthy. It indicates the market place is working as per economic rationality. One interesting departure of this market from others found in the literature is that the pre-switch firms improve their liquidity by a whopping 10.40%. This means that the market improves trading liquidity overall by this policy action. It is good news for the broker-dealer community as well. The up-switched price behaviour is plotted in a graph in figures one, three and four.

3.2 Down switch Behaviour

Price Effect: The corollary results are expected in the cases of down switches. The sample of these cases is smaller, but is sufficiently large to yield robust results. This is the first time a down-switch is being studied, as there is no published paper on this aspect of market behaviour. Expected results are (a) significant decline in abnormal returns and (b) significant dumping of shares, and hence an increase in the volume of the sample.

The numbers in Table 4 refer to the percentage change in share prices adjusted for market and riskiness.

(insert Table 4 about here)

The share price changes are declining more often than they are increasing in this case, as predicted by theory. Fifteen of the 48 abnormal returns are negative, indicating that the market is considering the down-switch as a bad news. The price effect is clearly identified (a) at the announcement time, and again (b) at the actual switch date. By announcement time the cumulative price loss is substantial amounting to 2.57% with almost all pre-announcement day prices going down with a significant change in almost each day. This trend is continued later to the actual switch day: the total loss in value is

3.04% significant with a t-value of 2.475. That is, the collective share capitalization of the sample valued at Rs. 20,761.49 crores is now reduced by Rs. 631.64 crores.

This strong indication of rational behaviour from even before the announcement date is consistent with other markets. Obviously market participants anticipate bad news so eagerly that the price impact occurs long before the announcement or actual switch: this behaviour is consistent with the risk-averse behaviour to avoid losses. This far the results are consistent with those reported in other markets. However the prices continue to decline further still: in an efficient market, prices react ahead of the event. In this case it reacted ahead of the event, but continues after the event to reach a total loss in value of 7.07%, which is large than the event-related decline of 3.04%. Thus the post-event drift downwards of 4.03% is indicative of an inefficient market pricing. Post-announcement drift of this magnitude is not reported in similar studies in Malaysia, which is another emerging market. Therefore, there is a question mark on this behaviour. If this post-event behaviour is due to an unobserved "missing" factor, then of course the conclusion will be entirely different. Only future research can address this.

Liquidity Effect: The liquidity effect is expected to lead to investors selling these stocks in preference for the up switch stocks. Hence, a significant liquidity effect is predicted by information economics theory. The Table 6 contains a summary of the abnormal liquidity observed in the market place.

(insert Table 6 about here)

The cumulative volume loss over the entire event period of 48 days is about 3.3% respectively for both the low- and high-liquidity cases. Thus, both classes of down switch firms lose about 3.3% of traded volume, on average. Again this is interesting. There appears to be no dumping of the stocks down-switched. Why? It is partly a puzzle. If there had been dumping then one would expect a larger drop in the return for this class than the 10.4% increase in return for the up-switch.

Part of the reason could well be that the retail traders are unable to switch without loss of value "within the 21 days we had measured" as the post-event. It is likely that the switch event in year 2001 was coinciding with a downward market, and so the retail investors would wait for a longer time than the one we had included for the dumping to be observed. Further research is needed with more extensive data set. A second reason, which we believe is more plausible given the post-announcement drift for the down-switch, is that the market is inefficient in pricing the down-switch. Perhaps there are institutional reasons that prevent the holders of this class of scrips of firms to immediately dump and reduce their losses further. We have no preference for either

reason, as these are mere speculations. The down-switched price behaviour is plotted in a graph in figures two, five and six.

3.3 Further Tests

The event statistics based on analysing the abnormal return appears to provide only a weak support to our maintained hypotheses. To rule out that the specific methodology is the culprit for the weak results, we conducted a regression tests to find out if this more reliable procedure could reveal a different result.[7] The regression conducted is:

$$CAR_j = \alpha + \delta_1(\sigma)_j + \delta_2 (LIQ)_j + \delta_3 (DUM)_j + \nu_j \qquad (7)$$

Where, in addition to the defined variables, σ is the standard deviation representing the volatility of the abnormal returns, LIQ is the liquidity as defined earlier and DUM takes the value of 1 for up-switches and 0 for down-switches. The results are in Table 7.

The test statistics in the two rows are respectively for the announcement effect and the effect on the actual switch date. Both regressions indicate that the results are statistically significant as the model has F-ratios that are significant. The adjusted R-squared values are respectable given that the data are for individual stocks, not portfolios: the values are about 20%. The two criterion variables namely the volatility (if the cumulative abnormal returns are computed around announcement date) and the dummy variables are significant whereas the liquidity factor is not significant. First, the nature of the switch is significant. Second, volatility of the abnormal returns is significantly related to the on-event cumulative abnormal returns around the announcement date. Third, the higher the liquidity the higher is the cumulative abnormal return as far as the sign is positive. However the magnitude of the liquidity is not related to the magnitude of the CAR as the t-values in both tests are not significant.

To test the volume behaviour before and after the switch, a mean difference test is appropriate. If up-switch is a signal of quality upgrade, then the volume should significantly increase in the period after the switch: we tested this for (a) before-switch low volume and before-switch high volume stocks. The up-switched low-liquidity stocks had increased volume of transactions in the period after the switch. The average volume per stock per day increased from 10,892 to 25,434 shares and the difference is statistically significant with a t-value of 5.590. For the high-liquidity stocks, the average decreased

[7] We are grateful to an anonymous reviewer for suggesting this test to clarify the mixed results.

from 36,864 to 15,567 with a significant t-value of -6.750: though contrary to expectation, this result is similar to that reported for Japanese high-liquidity stocks.

These test statistics revealed that the results of down-switches are anomalous to expectation. The low-liquidity down-switches resulted in increased volume after the event: from 1,337 to 1,697 shares traded, which is significant with t-value of 4.025. The corresponding numbers for the high-liquidity stocks are: 3,633 to 4,805 shares with a t-value of 6.246. A number of plausible reasons can be proposed for this behaviour. It is very likely that the investors who prefer to trade in the lower section identify the down-switched stocks as being correctly classified through the exchange organizers switching the scripts to the correct market. Once this signal is understood the investors preferred to trade in the lower section more in order to increase the trading on this group of stocks. Thus, the market action enables investors to be cautious about committing investment till the quality question is answered.

3.4 Summary

In summary, it is reasonable to state that the price and volume effect of the switch decision of poorly performing stocks is consistent with the information economics. That is, the prices and volume tend downwards. With respect to prices, the magnitude is larger in the up switches. That is inconsistent with worldwide observations that bad news should leads to more price effect than does good news. But this is true only up to the time ahead of the actual switch date. The continued price decline by some days after the switch date is inconsistent with other market behaviour, indeed is inconsistent with theoretical prediction. The liquidity effect is one-third the magnitude seen for the up-switch. This is too small given the prior that bad news must lead to dumping of stocks, and should lead to more severe liquidity effect than the one observed. Part of the reason for this could be the need for more time to detect the effect than the 21 days used in this study for this action to take place, if the market had been already in the downtrend at this time of the year. As there are no other existing studies of this kind to compare, it is difficult to pass judgment on the behaviour yet.

The post-switch behaviour of switched stocks indicates that the up-switch leads to increased liquidity especially for the low-liquidity stocks: there was a 150 percent increased volume. However, in the cases of down-switches, it appears that there is a preferred habitat for lowered-quality stocks, resulting in a higher liquidity for down-switches. The latter is consistent with the switches signaling the market makers revealing the correct classification for the relevant stocks. Once the correct classification is known,

the investors in the preferred habitat appear to improve the liquidity of the newly correctly-classified stocks. This suggests that the market organizers provide an useful economic service to the investment community.

Overall, the Indian stock market to which this study refers to is one that in broad terms appears to behave consistent with received theories. The exception are (a) the absence of price and liquidity effect in the case of good news prior to the announcement date and (b) the post-announcement drift contrary to theory observed for down-switches. What it suggests is that more detailed study is needed to benchmark this market behaviour by establishing more extensive data set over other switch periods (data could not be obtained for other switch years).

4. Conclusion and Policy

The purpose of this paper is to report the findings on (a) price and (b) liquidity effects arising from section switching in the B1 and B2 sections of the Bombay Stock Exchange. Also, the paper is concerned about (c) the policy implications of the empirical results from this study. The research design is embedded in the now-well-entrenched methodology of the event study procedure. Two samples of stocks listed and traded in the BSE were selected for study. One sample represented the *up* switches and the other the *down* switches: the samples were large enough, though not covering more than one year's announcements, to make valid conclusions.

Three major findings are revealed in this paper. First, there are down switches unique to this market, and its impact on prices and liquidity is substantial and significant. The share prices suffer a huge depreciation and the liquidity changes significantly due to selling pressure to this bad news. Second, the up-switches also attract market reactions: the share returns go up substantially but not as large as in the down switches; and the liquidity changes are especially significant for the low-liquidity cases. The liquidity effect for those up-switch cases are consistent with the observed effects in other four markets covered in the literature. Also, the down switch cases experienced the most impact as is consistent with other studies on bad news.

Although the BSE announces the switches ahead of the effective day of the switch, the market appears to ignore the announcements preferring to revalue the shares only around the time of the actual switch day, especially in the cases of down switches. This suggests that the participants are trading only after the announcement but just prior to the actual date. This could be inconsistent with the efficient market prediction. This aspect of the findings is contrary to those found in other markets, both developed and

emerging. This third finding is interesting, and suggests policy implications for disclosure effectiveness.

The overall results suggest that the market organization of the type in place in the India is eliciting participants to recognize the relative differences in the quality of the listed shares as these move across the sections. However, the information quality and financial press coverage, if sufficiently high, would have resulted in more crisp and clear-cut price and liquidity reactions *ahead* of the announcements as well as the actual switch dates rather than persisting as post-event drift. Further research is needed to understand the reasons and the dynamics for this variation in this case. In short, this study reveals useful empirical results of importance for policy formulation.

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Table 1:

The Sample of Down-switched Firms (B1 to B2)

ıpany Name	**Market Cap**	**Company Name**	**Market Cap**
ouncement date- 12-01-2001	(as on 31/12/2000)		(as on 31/12/200
ctive date - 22-01-2001	(Rs. Crores)		(Rs. Crores)
ı Lloyd Chiles Offshore Ltd.	213.48	51 Mangalam Cement Ltd.	341.19
l Amines Chemicals Ltd.	381.96	52 Manugraph Industries Ltd.	229.27
F Foods Ltd.	132.59	53 Mercator Lines Ltd.	233.75
ı riders Finance Ltd.	197.26	54 Morarjee Goculdas Spg. & Wvg. Co. Ltd.	238.38
y India Ltd.	442.9	55 Soni Infosys Ltd.	224.7
L Engineering Ltd.	403.83	56 Southern Herbals Ltd.	304.34
gheeratha Engineering Ltd.	160.27	57 T R F Ltd.	131.09
Ltd.	68.93	58 T T K Prestige Ltd.	550.4
at Bijlee Ltd.	107.38	59 Telephone Cables Ltd.	209.67
il Chemicals & Pharmaceuticals Ltd.	152.97	60 Textool Co. Ltd.	149.88
Yamaha Ltd.	436.65	61 Tolani Bulk Carriers Ltd.	123.6
e Corpn. Of India Ltd.	236.25	62 Transpek Industry Ltd.	253.65
phor & Allied Products Ltd.	132.08	63 Uniflex Cables Ltd.	467.98
ihans India Ltd.	361.18	64 V L S Finance Ltd.	877.51
rgia Biochemicals Ltd.	135.25	65 V S T Industries Ltd.	941.96
no Films Ltd.	253.11	66 V S T Tillers Tractors Ltd.	147.45
W Ltd.	332.29	67 Vijay Industries & Projects Ltd.	72.49
P Windsor India Ltd.	135.57	68 Vinyl Chemicals India Ltd.	348.66
ger-Forst Tools Ltd.	64.7	69 Vorin Laboratories Ltd.	473.63
oak Spinners Ltd.	73.73	70 Walchandnagar Industries Ltd.	210.32
ramsi Morarji Chemical Co. Ltd.	246.87	71 Uniworth Ltd.	367.03
amatic Technologies Ltd.	227.71		
H Associated Hotels Ltd.	257.25	Mean	179.644
on Engineering Co. Ltd.	363.69	Median	133.8
harma Laboratories Ltd.	156.45		
m Organics Ltd.	97.21		
Products Equipments (India) Ltd.	133.07		
Engineering Ltd.	153.75		
ls & Inns Ltd.	80.35		
I Hamon Inds. Ltd.	230.11		
C Industries Ltd.	256.72		
N Textiles Ltd.	283.19		
riel India Ltd.	595.72		
da Power & Telecommunication Ltd.	144.78		
esh Benzoplast Ltd.	476.32		
vare Polyester Ltd.	228.24		
vare Shipping Corpn. Ltd.	58.16		
Carbon Ltd.	131.56		
ıer & Weil (India) Ltd.	160.95		
ı Finance Ltd.	259.7		
lustan Dorr-Oliver Ltd.	111.43		
ı Gelatine & Chemicals Ltd.	339.2		
ı Securities Ltd.	313.81		
F Industries Ltd.	286.97		
swals Neco Ltd.	197.88		
C International Ltd.	2097.64		
atiya Cement Sugar & Inds. Ltd.	411.44		
indra Ugine Steel Co. Ltd.	757.83		
stic Auto Ltd.	243.34		
Industries (India) Ltd.	140.82		

Table 2:

The Sample of Up-Switched Firms (B2 to B1)

	Company Name	**Market Cap**
	Announcement date- 12-01-2001	(as on 31/12/2000)
	Effective date - 22-01-2001	(Rs. Crores)
1	Abhishek Industries Ltd.	275.4
2	Adam Comsof Ltd.	324.51
3	Advent Computer Services Ltd.	294.89
4	Andhra Petrochemicals Ltd.	344.13
5	Archies Greetings & Gifts Ltd.	1006.69
6	Avanti Feeds Ltd.	182.47
7	B S E L Information Systems Ltd.	615.09
8	Bishnauth Tea Co. Ltd. [Erstwhile]	477.47
9	B I T S Ltd.	368.07
10	Datasoft Application Software (India) Ltd.	181.65
11	E P I C Enzymes, Pharmaceuticals & Indl. Chemical	119.22
12	F C L Technologies & Products Ltd.	4199.36
13	Frontier Information Technologies Ltd.	485.83
14	Infoquest Software Exports Ltd.	119.5
15	Kerala Ayurveda Pharmacy Ltd.	165
16	LCC Infotech	846.28
17	Lee & Nee Softwares (Exports) Ltd.	152.35
18	Liberty Shoes Ltd.	354.9
19	M P Telelinks Ltd.	207.23
20	Pantaloon Retail (India) Ltd.	317.37
21	Paramount Communications Ltd.	310.75
22	Prag Bosimi Synthetics Ltd.	275.22
23	Prism Cement Ltd.	1952.64
24	Ram Informatics Ltd.	283.18
25	S R G Infotec Ltd.	683.41
26	S V C Superchem Ltd.	342.5
27	Sarvodaya Labs Ltd.	69.3
28	Selan Exploration Technology Ltd.	262.67
29	Sharp Industries Ltd.	142.24
30	Sunflag Iron & Steel Co. Ltd.	640.68
31	Surana Telecom Ltd.	212.93
32	Svam Softwares Ltd.	160.45
33	Synergy Log-In Systems Ltd.	293.27
34	T A S C Pharmaceuticals Ltd.	360.5
35	Tamilnadu Telecommunications Ltd.	645.95
36	Torrent Gujarat Biotech Ltd.	672.75
37	Twinstar Software Exports Ltd.	190.4
38	V M C Software Ltd.	92.75
39	Valiant Communications Ltd.	166.04
40	Veronica Laboratories Ltd.	178.83
41	Vintron Informatics Ltd.	152.76
42	Financial Technologies (India) Ltd.	1483.66
	Mean	490.72

Table 3:
ABNORMAL RETURN BEHAVIOUR OF UP-SWITCHED STOCKS, INDIA

		AR	t-value	CAR	t-value
	15-Dec-00	-0.975	-3.86728*	-0.975	
	17-Dec-00	.000001	3.97E-05	-0.975	
	18-Dec-00	-0.062	-0.24689	-1.037	
	19-Dec-00	-1.99	-7.89501*	-3.028	
	20-Dec-00	0.2847	1.129313	-2.743	
	21-Dec-00	-1.802	-7.14626*	-4.545	
	22-Dec-00	-5.506	-21.838*	-10.05	
	26-Dec-00	5.531	2.193828*	-9.497	
	27-Dec-00	-1.551	-6.15347*	-11.049	
	28-Dec-00	0.3277	1.29996	-10.721	
	29-Dec-00	1.1125	4.412696*	-9.608	
	30-Dec-00	4.9508	19.63721*	-4.658	
	01-Jan-01	2.7769	11.01448*	-1.881	
	02-Jan-01	-1.465	-5.81189*	-3.346	
	03-Jan-01	-2.986	-11.8454*	-6.332	
	04-Jan-01	-0.609	-2.41648*	-6.942	
	05-Jan-01	-3.718	-14.7482*	-10.66	
	08-Jan-01	3.081	12.2206*	-7.579	
	09-Jan-01	-1.128	-4.47439*	-8.707	
	10-Jan-01	-1.574	-6.24261*	-10.281	**-0.61938**
	11-Jan-01	-2.805	-11.1275*	-2.805	
Announcement date	**12-Jan-01**	**-2.702**	**-10.7174***	**-5.507**	**-1.17091**
	15-Jan-01	-2.729	-10.8251*	-8.237	
	16-Jan-01	-1.467	-5.81811*	-21.737	
	17-Jan-01	-0.935	-3.70928*	-22.672	
	18-Jan-01	-0.517	-2.05236*	-23.19	
	19-Jan-01	2.7822	11.0355*	2.7822	
Effective date	**22-Jan-01**	**3.2031**	**12.70481***	**5.9853**	**1.628235**
	23-Jan-01	0.8105	3.214669*	6.7958	
	24-Jan-01	-0.985	-3.9058*	-0.985	
	25-Jan-01	-2.173	-8.6186*	-3.158	
	29-Jan-01	-0.34	-1.34783*	-3.497	
	30-Jan-01	-0.108	-0.42754	-3.605	
	31-Jan-01	-1.407	-5.58002*	-5.012	
	01-Feb-01	-2.694	-10.6872*	-7.706	
	02-Feb-01	-2.763	-10.96*	-10.47	
	05-Feb-01	-1.377	-5.461*	-11.846	
	06-Feb-01	0.1632	0.647241	-11.683	
	07-Feb-01	0.9303	3.690137*	-10.753	
	08-Feb-01	-2.363	-9.37306*	-13.116	
	09-Feb-01	-2.195	-8.70476*	-15.311	
	12-Feb-01	1.7858	7.083232*	-13.525	
	13-Feb-01	0.6952	2.75739*	-12.83	
	14-Feb-01	-0.339	-1.34349	-13.168	
	15-Feb-01	-0.653	-2.58956*	-13.821	
	16-Feb-01	0.2442	0.968766	-13.577	
	19-Feb-01	0.0455	0.180357	-13.531	
	20-Feb-01	-1.059	-4.19919*	-14.59	
	21-Feb-01	-0.454	-1.8008	-15.044	**-0.73262**

* Indicates significant at or better than 0.05 confidence level.

Table 4:
ABNORMAL RETURNS OF DOWN-SWITCHED STOCKS, INDIA

		AR	t-value	CAR	t-value
	15-Dec-00	-0.336	-1.54713	-0.336	
	17-Dec-00	-2.672	-12.2942*	-3.008	
	18-Dec-00	-0.501	-2.30772*	-3.509	
	19-Dec-00	-1.049	-4.82524*	-4.558	
	20-Dec-00	1.5396	7.08476*	-3.018	
	21-Dec-00	-0.111	-0.50878	-3.129	
	22-Dec-00	-0.113	-0.52092	-3.242	
	26-Dec-00	2.0619	9.48836*	-1.18	
	27-Dec-00	-1.223	-5.62658*	-2.403	
	28-Dec-00	-2.98	-13.712*	-5.383	
	29-Dec-00	-0.512	-2.35751*	-5.895	
	30-Dec-00	-0.326	-1.5001	-6.221	
	01-Jan-01	2.6609	12.2449*	-3.56	
	02-Jan-01	-1.709	-7.86538*	-5.269	
	03-Jan-01	-0.99	-4.55783*	-6.26	
	04-Jan-01	-2.023	-9.30869*	-8.283	
	05-Jan-01	-1.839	-8.46074*	-10.121	
	08-Jan-01	1.7001	7.82357*	-8.421	
	09-Jan-01	-0.965	-4.44146*	-9.386	
	10-Jan-01	1.3587	6.25229*	-8.027	**-0.65384**
	11-Jan-01	-0.988	-4.54487*	-0.988	
Announcement date	**12-Jan-01**	**-1.592**	**-7.32444***	**-2.579**	**-1.08752**
	15-Jan-01	-1.134	-5.21938*	-03.714	
	16-Jan-01	-2.605	-11.9895*	-11.122	
	17-Jan-01	-0.587	-2.70109*	-11.709	
	18-Jan-01	-0.434	-1.99689	-12.143	
	19-Jan-01	-1.927	-8.86968*	-1.927	
Effective date	**22-Jan-01**	**-1.109**	**-5.10473***	**-3.037**	**-2.47517**
	23-Jan-01	-0.208	-0.95929	-3.245	
	24-Jan-01	-0.727	-3.34429*	-0.727	
	25-Jan-01	-0.062	-0.28322	-0.789	
	29-Jan-01	1.9923	9.16806*	1.2033	
	30-Jan-01	-3.312	-15.2393*	-2.1087	
	31-Jan-01	2.2801	10.4925*	0.1714	
	01-Feb-01	0.1187	0.546394	0.2901	
	02-Feb-01	-2.229	-10.2571*	-1.9389	
	05-Feb-01	.000104	0.004786	-1.9388	
	06-Feb-01	0.6305	2.90134*	-1.3083	
	07-Feb-01	3.7804	17.3966*	2.4721	
	08-Feb-01	-0.49	-2.25556*	1.9821	
	09-Feb-01	1.0208	4.69754*	3.0029	
	12-Feb-01	0.9686	4.45722*	3.9714	
	13-Feb-01	-0.022	-0.09969	3.9495	
	14-Feb-01	-0.241	-1.10775	3.7085	
	15-Feb-01	-2.303	-10.5975*	1.4055	
	16-Feb-01	0.8834	4.06527*	2.2889	
	19-Feb-01	-1.589	-7.31054*	0.699999	
	20-Feb-01	0.5115	2.35384*	1.2114	
	21-Feb-01	0.7072	3.25420*	1.9186	**0.21698**

* Indicates significant at or better than 0.05 confidence level.

Table5:
ABNORMAL RETURN BEHAVIOUR OF UP-SWITCHED STOCKS, INDIA

	LOW LIQUIDITY				HIGH LIQUIDITY			
e	**AR**	**t-value**	**CAR**	**t-value**	**AR**	**t-value**	**CAR**	**t-value**
Dec-00	0.3254	1.61699	0.3254		-2.16	-7.85283*	-2.157	
Dec-00	-0.14	-0.6957	0.1854		-0.14	-0.50965	-2.297	
Dec-00	-0.567	-2.8182*	-0.382		0.411	1.495691	-1.886	
Dec-00	-3.642	-18.1*	-4.024		-0.31	-1.12048	-2.194	
Dec-00	1.6177	8.03917*	-2.406		-0.98	-3.56345*	-3.173	
Dec-00	-0.683	-3.3935*	-3.089		-2.65	-9.66505*	-5.828	
Dec-00	-4.648	-23.097*	-7.737		-5.79	-21.0596*	-11.613	
Dec-00	-0.357	-1.7746	-8.094		1.205	4.38506*	-10.408	
Dec-00	-1.807	-8.9786*	-9.901		-0.76	-2.74876*	-11.164	
Dec-00	1.9733	9.80594*	-7.928		-1.23	-4.46952*	-12.391	
Dec-00	1.2299	6.11177*	-6.698		0.702	2.556965*	-11.689	
Dec-00	0.1909	0.94878	-6.507		0.277	1.00659	-11.412	
-Jan-01	2.6282	13.0608*	-3.879		2.281	8.303514*	-9.131	
-Jan-01	-2.386	-11.855*	-6.264		-0.43	-1.56101*	-9.56	
-Jan-01	-1.344	-6.6766*	-7.608		-3.94	-14.3318*	-13.497	
-Jan-01	-1.137	-5.6478*	-8.744		.000865	0.031191	-13.489	
-Jan-01	-3.343	-16.611*	-12.087		-3.05	-11.0873*	-16.534	
-Jan-01	2.436	12.1055*	-9.651		2.827	10.29154*	-13.707	
-Jan-01	-0.793	-3.9419*	-10.444		-1.28	-4.65461*	-14.986	
-Jan-01	-1.145	-5.6907*	-11.589	**-0.6798**	-1.68	-6.10644*	-16.663	**-0.7449**
-Jan-01	-1.633	-8.1173*	-1.633		-3.49	-12.6985*	-3.488	
-Jan-01	**-2.367**	**-11.76***	**-4.0**	**-0.8005**	**-2.27**	**-8.26387***	**-5.758**	**-1.5944**
-Jan-01	-3.374	-16.768*	-7.374		-1.89	-6.89733*	-7.653	
-Jan-01	-0.529	-2.6313*	-19.474		-1.85	-6.7428*	-29.196	
-Jan-01	0.2568	1.27597	-19.217		-1.85	-6.72993*	-31.044	
-Jan-01	-0.647	-3.2134*	-19.864		-0.33	-1.1992	-31.374	
-Jan-01	0.6843	3.40071*	0.6843		4.31	15.68986*	4.31	
-Jan-01	**1.2933**	**6.42698***	**1.9776**	**1.62298**	**4.502**	**16.39044***	**8.8124**	**1.61799**
-Jan-01	-0.167	-0.8287	1.8109		1.551	5.647959*	10.3639	
-Jan-01	0.2159	1.0727	0.2159		-1.9	-6.9061*	-1.897	
-Jan-01	-1.466	-7.2875*	-1.251		-2.42	-8.80962*	-4.317	
-Jan-01	-0.777	-3.8621*	-2.028		0.104	0.379117	-4.213	
-Jan-01	-0.452	-2.2475*	-2.48		0.23	0.83679	-3.983	
-Jan-01	-1.201	-5.9679*	-3.681		-1.27	-4.6387*	-5.257	
Feb-01	-2.213	-10.997*	-5.894		-2.52	-9.17308*	-7.777	
Feb-01	-0.1765	-8.7691*	-7.658		-3.29	-11.9919*	-11.071	
Feb-01	2.1289	10.5795*	-5.53		-4.38	-15.9304*	-15.447	
Feb-01	-0.555	-2.7567*	-6.084		0.779	2.8349*	-14.669	
Feb-01	1.5206	7.55635*	-4.564		0.182	0.663725	-14.486	
Feb-01	-1.803	-8.9598*	-6.367		-2.23	-8.10993*	-16.714	
Feb-01	-1.039	-5.1634*	-7.406		-2.75	-9.99762*	-19.46	
Feb-01	1.7457	8.67489*	-5.66		1.66	6.042721*	-17.801	
Feb-01	-1.356	-6.7383*	-7.016		2.433	8.858569*	-15.367	
Feb-01	-0.069	-0.3431	-7.085		-0.52	-1.90128	-15.889	
Feb-01	0.4568	2.27006*	-6.628		-1.54	-5.61689*	-17.432	
Feb-01	0.5978	2.97069*	-6.03		-0.1	-0.36176	-17.532	
Feb-01	0.43	2.13684*	-5.6		-0.32	-1.15969	-17.85	
Feb-01	-0.616	-3.0601*	-6.216		-1.12	-4.0934*	-18.975	
Feb-01	0.5685	2.8249*	-5.648	**-0.5808**	-1.26	-4.58575*	-20.234	**-0.7436**

* Indicates significant at or better than 0.05 confidence level.

Table6:
ABNORMAL RETURN BEHAVIOUR OF DOWN-SWITCH STOCKS, INDIA

	LOW LIQUIDITY				HIGH LIQUIDITY			
date	**AR**	**t-value**	**CAR**	**t-value**	**AR**	**t-value**	**CAR**	**t-value**
15-Dec-00	-0.09534	-0.3674	-0.09534		-0.2708	-1.41807	-0.2708	
17-Dec-00	-0.14	-0.5395	-0.23534		-0.0085	-0.04462	-0.27932	
18-Dec-00	-0.46557	-1.794	-0.70091		0.19377	1.014685	-0.08555	
19-Dec-00	-1.73915	-6.7015*	-2.44007		-0.4433	-2.32136*	-0.52885	
20-Dec-00	2.931029	11.2941*	0.490962		-0.3159	-1.65425	-0.84474	
21-Dec-00	0.19491	0.75105	0.685872		-0.8438	-4.41851*	-1.68851	
22-Dec-00	0.534475	2.05949*	1.220348		-0.392	-2.0526*	-2.08048	
26-Dec-00	3.095335	11.9273*	4.315683		0.30942	1.620306	-1.77107	
27-Dec-00	-2.86026	-11.021*	1.455419		-0.2365	-1.23871	-2.00761	
28-Dec-00	-1.43591	-5.533*	0.019509		-2.223	-11.6412*	-4.23064	
29-Dec-00	-1.50198	-5.7876*	-1.48247		0.55448	2.90359*	-3.67616	
30-Dec-00	0.128509	0.49518	-1.35397		-0.1993	-1.04378	-3.87548	
01-Jan-01	0.466743	1.7985	-0.88722		2.35412	12.32767*	-1.52136	
02-Jan-01	-1.54417	-5.9501*	-2.43139		-0.77	-4.03218*	-2.29136	
03-Jan-01	-1.78305	-6.8706*	-4.21444		-0.822	-4.30469*	-3.11339	
04-Jan-01	-2.51386	-9.6867*	-6.7283		-1.4083	-7.3745*	-4.52164	
05-Jan-01	-0.17037	-0.6565	-6.89867		-2.6025	-13.6284*	-7.12414	
08-Jan-01	1.098899	4.23439*	-5.79977		2.20876	11.56645*	-4.91539	
09-Jan-01	0.180173	0.69426	-5.6196		-1.8424	-9.64781*	-6.75775	
10-Jan-01	-0.99197	-3.8224*	-6.61157	**-0.4673**	2.43224	12.73677*	-4.32551	**-0.4638**
11-Jan-01	1.112114	4.28531*	1.112114		-1.801	-9.43111*	-1.80099	
12-Jan-01	**-3.09552**	**-11.928***	**-1.98341**	**-0.4477**	**-0.8397**	**-4.39732***	**-2.64071**	**-3.5355***
15-Jan-01	-1.97987	-7.629*	-3.96327		0.24949	1.306479	-2.39122	
16-Jan-01	-1.46224	-5.6344*	-0.11351		-2.6953	-14.1145*	-0.06	
17-Jan-01	-0.31804	-1.2255	-0.11669		-0.151	-0.79076	-0.06151	
18-Jan-01	-0.5696	-2.1948*	-0.12239		0.26632	1.394596	-0.05884	
19-Jan-01	0.139222	0.53646	0.139222		-3.6883	-19.3145*	-3.68834	
22-Jan-01	**-0.74135**	**-2.8567***	**-0.60213**	**-0.3587**	**0.08814**	**0.461582**	**-3.60019**	**-10.709***
23-Jan-01	-1.18054	-4.549*	-1.78267		0.28332	1.483627	-3.31688	
24-Jan-01	-3.09079	-11.91*	-3.09079		1.30398	6.828452*	1.303976	
25-Jan-01	0.101781	0.39219	-2.98901		0.02891	0.15138	1.332884	
29-Jan-01	2.934497	11.3075*	-0.05451		0.00839	4.392178*	1.341271	
30-Jan-01	-1.94393	-7.4906*	-1.99844		-3.2517	-17.0279*	-1.91041	
31-Jan-01	3.741468	14.417*	1.743024		2.02126	10.58463*	0.110856	
01-Feb-01	0.262102	1.00996	2.005126		0.44474	2.328936*	0.555594	
02-Feb-01	-2.58398	-9.9568*	-0.57885		-2.3364	-12.2349*	-1.78081	
05-Feb-01	-1.45329	-5.6*	-2.03214		2.42613	12.70477*	0.645323	
06-Feb-01	0.964677	3.71719*	-1.06746		0.10882	0.569853	0.754143	
07-Feb-01	3.587154	13.8224*	2.519694		2.92488	15.31654*	3.679023	
08-Feb-01	-0.17611	-0.6786	2.343587		-1.714	-8.97555*	1.965032	
09-Feb-01	1.286734	4.95817*	3.630321		1.16243	6.087251*	3.127467	
12-Feb-01	-0.44845	-1.728	3.181874		1.87853	9.837164*	5.005994	
13-Feb-01	0.799685	3.08143*	3.981559		-1.2027	-6.29814*	3.803288	
14-Feb-01	-0.91533	-3.527*	3.066228		0.21464	1.124015	4.017932	
15-Feb-01	-4.50317	-17.352*	-1.43694		-0.8602	-4.50465*	3.157714	
16-Feb-01	2.763451	10.6484*	1.326507		-2.0023	-10.4856*	1.155368	
19-Feb-01	-2.34064	-9.0192*	-1.01413		-0.0165	-0.08654	1.138842	
20-Feb-01	0.276574	1.06572	-0.73756		-0.4648	-2.43408*	0.674024	
21-Feb-01	3.128769	12.0561*	2.391213	**0.2326**	0.0681	0.356637	0.742128	**0.09159**

* Indicates significant at or better than 0.05 confidence level.

Table 7: Test Results of the Relationship between Returns and Criterion Variables Switched Stocks, India					
	d_1	d_2	d_3	**R-Squared**	**F-Ratio**
Announcement Date	-1.244 (-3.320)*	0.0002 (0.053)	0.0454 (2.964)*	0.17	6.580*
Effective Date	0.437 (0.890)	0.0029 (0.659)	-0.086 (-4.310)*	0.19	7.250*

( ) Indicates t-values and * indicates significant at or better than 0.05 confidence level.

Figure 1

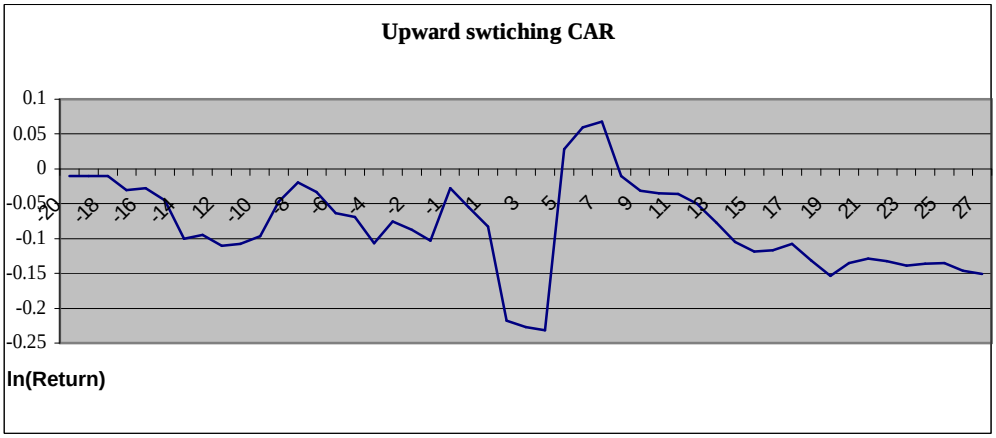

Figure 2

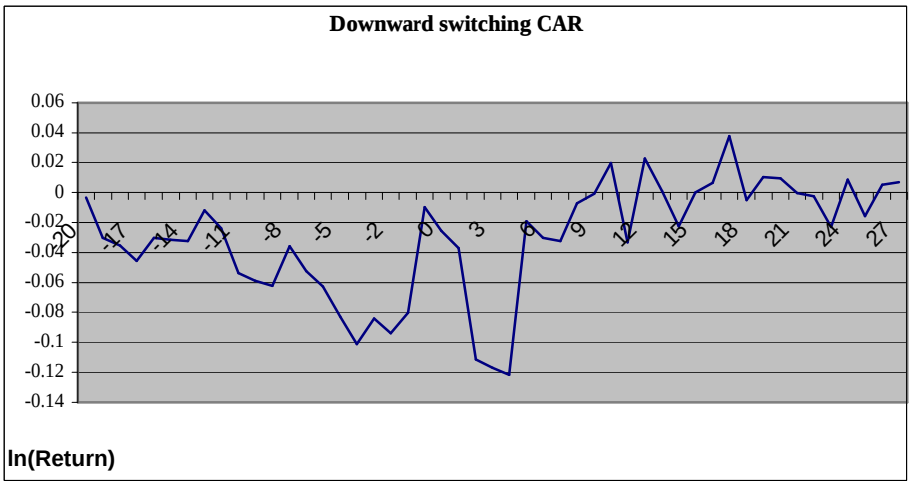

Figure 3

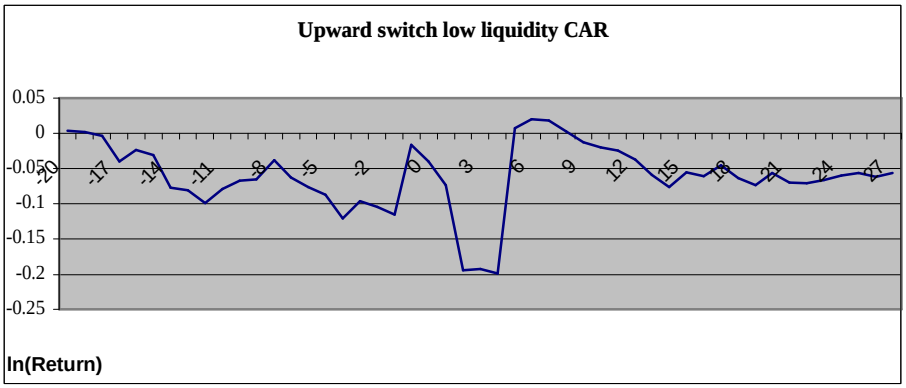

Figure 4

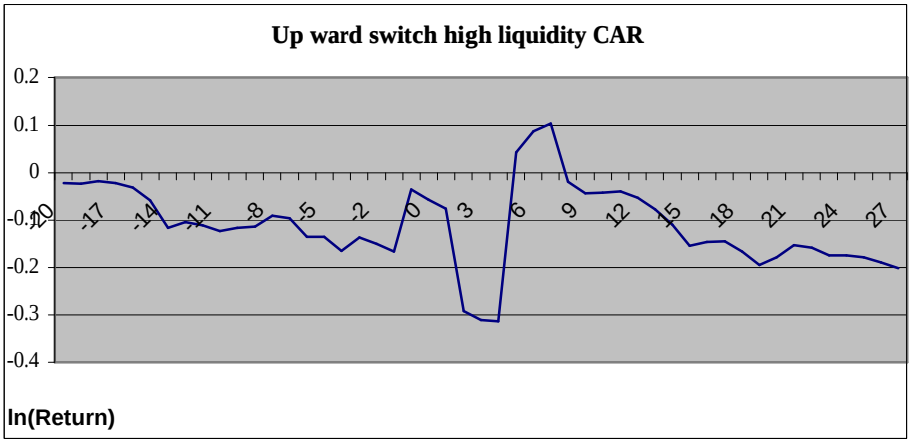

Figure 5

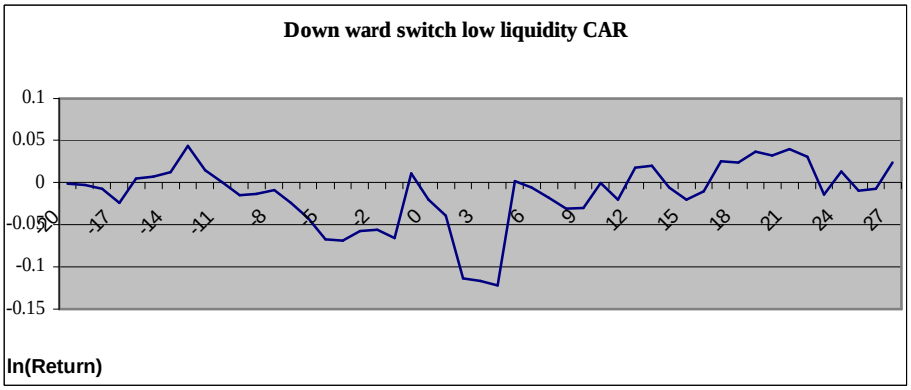
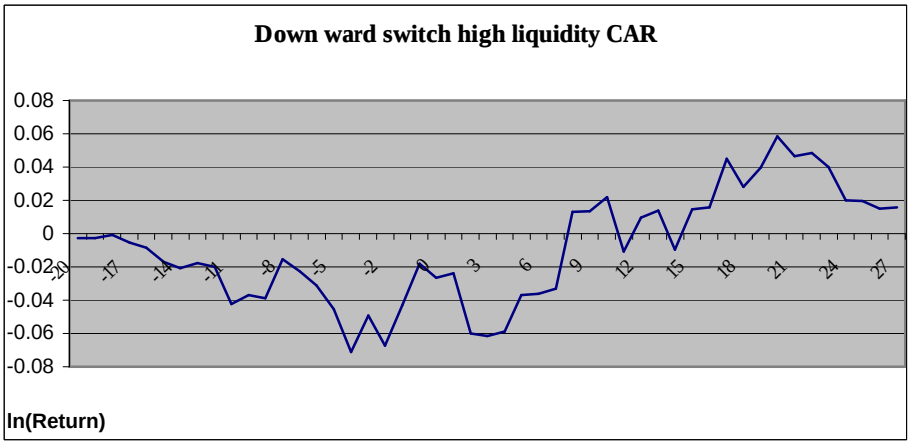
Figure 6