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Is There Profit from Bonus Share Announcements in Nairobi Securities Exchange?

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Abstract
The question of whether the announcement of issuance of bonus shares by quoted companies is news to stock market participants or it is anticipated by the market has been the subject of research. If the announcement is anticipated, then stock prices should not change drastically during the days surrounding the announcement date. This research employed the event study methodology by using the bonus announcements of eighteen NSE listed companies that occurred during the year 2005 to 2010. The t-test statistic was employed to test the significance of the average abnormal returns and cumulative average abnormal returns from zero. It is possible to profit from bonus share announcement when the abnormal or abnormal returns are significant from zero. The results of t-tests on the average abnormal return (AAR) and the cumulative average abnormal return (CAAR) indicated that abnormal returns were significantly different from zero which implied that implied that there is an anomaly in the semi-strong form efficiency of the NSE with regards to bonus announcements as it is possible to profit from such announcements which is regarded as news by NSE investors.

INTRODUCTION

Bonus shares also referred to as stock dividends or scrip dividends are free shares given proportionately to existing company shareholders to maintain their proportionate ownership of the company and are financed from the company reserves which arise from a company's accumulated undistributed profits in past periods. The free bonus shares do not increase the wealth of shareholders as the earnings per share and market price per share will decline proportionately to the increase in number of equity shares after the bonus issue (Pandey, 2005). The increased number of equity shares after the bonus issue is referred to as dilution of equity as the earnings of the firm will have to be distributed to an increased number of equity shares (Amuthan and Ayyappan, 2011).

The capital structure of a firm changes when bonus shares are issued as the retained earnings decline after funds are transferred to issued paid in capital of common stocks a concept referred to as capitalization of reserves which prevents cash from leaving the firm to shareholders in the form of cash dividends (Pike, 2009). The paid in capital composed of the par value of the issued stocks is not legally distributable subsequently, a bonus issue results in reduction of distributable reserves as a result of the capitalization (Adaoglu and Lasfer, 2008).

There are several hypotheses that have been advanced regarding dividend announcements including the signaling hypothesis which advocates that company managers possess asymmetric information about bonus announcements and subsequently they may wish to convey such information to investors about the future prospects of the firm (Copeland, 2005). Cash substitution hypothesis advocates that firms can retain cash through issuance of bonus stocks as a temporary substitute for cash dividends (Mishra, 2005).

Enhanced liquidity hypothesis advocates for improvement of the liquidity and marketability of a firm's stocks and reduction of the bid ask spread through the issuance of bonus shares. The attention getting or neglected firm hypothesis postulates that some managers may be of the opinion that the value of the firm's stock may be undervalued and may use the bonus issuance to draw the attention of analysts to the firm's future cash flows for the purpose of revaluation of the firm's stock (Adaoglu and Lasfer, 2008). The retained earnings hypothesis advocates that distribution of stock dividends that result in reduction of retained earnings is a more credible signal of managerial optimism than the alternative distribution that do not involve reduction of retained earnings (Lobo et al, 2001).

Firms can send a false signal to the market if subsequent earnings are not sufficient enough to offset a past reduction in retained earnings that resulted from in a bonus issue. In such cases there are usually cash dividend restrictions. Firms are said to have adopted a suboptimal dividend payment policy if the reason behind the stock dividend distribution is debt covenants or company law restrictions (Crawford *et al*, 2005).

The adjustment of stock prices to earnings announcement has been studied extensively with focus being on how fast the announcement is absorbed in the stock price. Further, studies have been extended to the assessment of expected or anticipated and unanticipated earnings where anticipated earnings arise in the event period before the earnings announcement date are not regarded as new information that requires adjustment of the stock price.

Unanticipated earnings or earnings surprises on the other hand are regarded as new information arising after the earnings announcement date that requires the adjustment of the stock price (C.P James, 2009). The "news" content of earnings announcements or earnings surprise is derived as the difference between the actual earnings and the anticipated earnings which are derived by averaging the published earnings forecasts of financial analysts or by studying the trend of past earnings (Bodie, 2010).

Studies have shown that there is a slow or lagged response to earnings announcements by the market as evidenced by a sustained period of positive excess or abnormal returns when unexpected earnings increase a phenomenon known as positive earnings surprise or when there is a sustained period of negative excess or abnormal returns as a result of unexpected earnings decline also known as when negative earnings surprise (Bodie, 2010). The sustained period of either positive or negative abnormal returns is referred to as the momentum and it can be exploited by investors who may choose to invest in stocks that display positive earnings surprise in order to enjoy the momentum after the announcement is made or avoid stocks that have a negative earnings surprise due to the momentum that is expected which is a behavior that is consistent with the dividend signaling hypothesis (Copeland, 2005).

RESEARCH PROBLEM

Theoretically, the bonus issue date is an anticipated event that is known well in advance from a company's past experience of bonus issuance and hence the issue date does not contain any new information and is not expected to influence the stock price significantly when announced (Mishra, 2005). On the contrary, bonus announcement is an indicator of a company's good health and indicates that the company is able to service a larger number of equity shares by generating increased profits (Amuthan and Ayyappan, 2011). This is true unless the bonus issue is prompted by debt covenants or company law restrictions that inhibit a company from issuing cash dividends thereby giving false signals to investors about the company's future cash flow prospects (Crawford et al, 2005).

The view that a bonus announcement is well known in advance and therefore ought not affect a company's stock price and the alternative view that bonus issue gives a good signal to the market about the company are contradicting views which render a fertile ground for research which became the motivation for the study. Past studies on event study in the NSE have focused on cash dividend payment and stock split news as the events to be studied but have not covered bonus or stock dividend issuance news event which creates a gap that is the motivation behind the research.

RESEARCH OBJECTIVE

To establish whether bonus announcements in the NSE result in significant abnormal returns.

RESEARCH HYPOTHESIS

H0: Average Abnormal Returns (AAR) from bonus announcement = 0
H1: Average Abnormal Returns (AAR) from bonus announcement ≠ 0

LITERATURE REVIEW

Theory

There are three forms of stock market efficiency including efficiency in the weak form, semi-strong form and strong form. Efficiency in the weak form implies the stock prices occur in a random fashion where current prices are independent of past prices and the use of past information in the form of pattern or trend analysis should not generate abnormal returns unless there is an anomaly. Efficiency in the semi-strong form implies that current stock prices fully reflect both publicly released and past information and any attempt to use such information should not generate abnormal profits unless there is an anomaly. Efficiency in the strong form implies that the use of private or public or past information should not outperform the average performance of other investors as all such information is fully incorporated in the current stock prices (Copeland, 2005).

News by definition is unpredictable and random in markets deemed to be efficient and hence uniformed investors buying a diversified portfolio at the prices given by the market should obtain the same rate of return as by the experts (Bodie *et al*, 2010). If the flow of information is unimpeded, then it should immediately be reflected in the current stock prices so that a future period's price change will only reflect news about that future period and will be independent of the past stock prices (Malkiel, 2003).

The intense competition causes to new information being instantaneously reflected in stock prices which makes it difficult for any participant to possess comparative advantage in the acquisition of information that can outperform the market by generation of abnormal returns, which is an aspect that enhances stock market efficiency (Cuthbertson, 2005). New information is in the form of news, announcements, expectations, opinions, stories, and even lack of news which should be continuously incorporated in stock prices if the market is deemed to be efficient (Stefan, 2009). Thus profiting from bonus announcements which are expected to already be

incorporated in stock prices would constitute an anomaly in the NSE which is expected to be efficient.

Past studies

Bonus issuance event study has not been examined in the past in the NSE which displays efficiency in the weak form as evidenced by Olweny (2012) who studied the effect of cash dividend announcement on value of the firm using event study methodology involving t-test of significance to establish whether dividend announcements had information content. He used NSE data of 4 firms for the period between years 1999 to 2003. The results indicated that dividend announcements significantly affects the firm value, that such announcements do indeed convey useful information about the future value of a firm and that the NSE is not efficient in the semi strong from hence can allow abnormal returns to be made during dividend announcement.

Dickinson and Muragu (1994) studied market efficiency in developing Countries and focused on the Nairobi stock Exchange. They employed the use of serial correlation test of individual companies, correlation coefficient testing across lags of individual companies, binomial test of individual companies, Q statistics test and Runs tests. The results indicated that the NSE was efficient in the weak form.

Magnusson and Wydick (2005) studied efficiency of African stock markets and in their methodology they analyzed weak form efficiency into 3 levels of random walk III which was the least limiting and postulated that it was not possible to use past prices to predict future prices and that the price movements should have uncorrelated increments that can be tested using partial auto-correlation function of random increments of past prices which can be tested for significance from zero which is the normal if the market is efficient in the weak form. Random walk II level imply compliance with random walk III and an additional test to ascertain the correlation of squared incremental changes which if not significantly different from zero, then random walk II requirements will have been fulfilled implying that variances can change over time (heteroscedasticity) but in an unpredictable manner. The random walk I was the most restrictive and required white test of heteroscedasticity. The results indicated that none of the African stock markets conformed to random walk I and only the US markets met its requirements. The NSE, and 5 other African markets conformed to random walk II just like markets in south east Asia and Europe. This implied that even African markets were not inferior to those in other parts of the world.

Mlambo et al, (2007) studied the weak form of efficiency of African stock markets and employed serial correlation tests of Runs test. He observed thin trading problem especially in Namibia and Botswana markets. In many of the markets studied, the random walk hypothesis was rejected except for the markets in Kenya, Namibia and Zimbabwe that were found to be relatively weak form efficient. Namibia's market weak form of efficiency was attributed to cross listings from JSE. For the markets in Mauritania, Ghana, Egypt and Cote d I'voire they were found to be weak form inefficient which implies that past trends analysis can generate abnormal returns.

Amuthan R and Ayyappan S (2011), analyzed bonus issuance event announcement on Indian banking and technological sectors by focusing on the behavior of share prices of 10 listed companies to establish whether there was a significant difference between the abnormal returns of one day before and one day after the bonus announcement. The results indicated that there was a significant difference in the form of either positive or negative abnormal returns a day before and after the bonus announcement and hence they concluded that the bonus issue was a powerful event.

Barnes and Shiguang (2001) studied market efficiency by analyzing the response of stock prices to announcement of bonus issues in China using event study methodology. An investigation window of 20 days before and after the event was employed and 3 portfolios were constructed for the purpose of analysis categorized as small bonus portfolio consisting of 103 proposals, middle bonus portfolio consisting of 37 proposals and large bonus portfolio consisting of 56 proposals. Their results indicated that high bonus ratio as measured by the number of bonus shares over the number of existing shares will usually attract positive returns while issues with low bonus ratio attract low returns.

Darrel and Frank (2010) studied insider trading as a test of semi-strong form efficiency and were interested in establishing whether insider purchases influence stock price returns on or around the purchase date on the risk adjusted. They employed the standard event study rate of returns of firms and event window of 20 days before and after the event. The results indicated that the risk adjusted returns of firms announcing insider purchases was not significantly affected around the announcement dates as defined by the event period.

Kumar and Halageri (2011) studied the semi strong form efficiency of the Indian stock market using the event study methodology and focused on bonus issuance event from April 1996 to March 201. The event period consisted of 15 days before and after the announcement and 54 bonus announcements from listed companies were studied whose results indicated that the Indian stock markets did not perfectly incorporate bonus announcement information instantaneously in the stock prices. This meant that it is possible to make abnormal returns from bonus announcements by applying the buy and hold investment strategy.

Mishra A. K (2005) studied market reaction around bonus issues in India in order to examine whether the market is efficient in the semi-strong form or not. The study period was between year 1998 to 2004 where a sample of 46 bonus issues were used in an event study. An event window of 180 days was used and results showed that stocks start showing abnormal returns between 8 to 9 days before the announcement date which was probably due to leakage of information.

METHODOLOGY OF RESEARCH

Population and Sample

There are currently 58 listed companies in the NSE and categorized into ten sectors of the economy including: agricultural, automobile and accessories, banking, commercial and services, construction and allied, energy and petroleum, insurance, investment, manufacturing and allied and telecommunication and technology sectors. During the study period of year 2005 to 2010 there were 56 listed companies the very actively traded being listed under the main investment market (MIM) while those affected by the problem of thin trading being listed under the alternative investment market (AIM). Only a sample of 18 that had issued bonus shares during the study period from year 2005 to 2010 was studied as listed in appendix 1.

Instruments and Procedures

This study applied the event study methodology that was adopted by Darrell (2010) which included the following procedures: The holding period arithmetic returns of the bonus issuing companies and the corresponding NSE 20 share index for each day in this study period was computed as follows (Reilly and Brown, 2009):

Arithmetic returns (Ri) = $(P_1 – P_0) / P_0$ **(1)**

Where: P_1 = today's closing stock price and P_0 = yesterday's closing stock price

A regression analysis was carried out using the actual daily return of each company as the dependent variable and the corresponding NSE 20 share index daily return as the independent variable over the pre-event period of 80 days prior to the event period of 20 days before and 20 days after the bonus announcements. This was done with the objective of obtaining the intercept alpha and the standardized coefficient beta.

In order to obtain the predicted or estimated returns for each day of the event period from day -20 to day + 20, the risk-adjusted market model was employed:

Estimated Return = alpha + Beta (Rm) **(2)**

Where: **Rm** is the return on the market given by NSE 20 share index and **E(R)** is the estimated return.

The Abnormal return (AR) was computed:

Abnormal Return = the Actual Return (R) – Estimated Return E(R) **(3)**

Average Abnormal Returns (AAR) was calculated for each day from -20 to +20 by averaging the abnormal returns as follows:

Average Abnormal Return (AAR) = Total Abnormal Return / n **(4)**

Where **n** = number of firms is sample

Cumulative Average Abnormal Return (CAAR) for the event period (Day -20 to Day +20) were computed as the sum of the AAR.

Cumulative Average Abnormal Return (CAAR) = ∑ AAR **(5)**

Data Analysis

Normality tests of skewness of ideally zero and kurtosis of ideally three (Vogelvang, 2005) were employed to test whether the abnormal returns data from the 18 companies was normally distributed. Normality is a condition that should exist before sample results can be generalized to the entire population (Mugenda and Mugenda, 2003). Parametric tests were done by employing the one sample t-test of significance of average abnormal returns from zero as follows (Serra, 2002):

Student t-statistic = $AAR_0 / S(AAR_0)$ **(6)**

Where: **AAR_0** implies average abnormal return and

$S(AAR_0)$ implies the standard deviation of average abnormal return as measured by:

$$S(AAR_0) = \sqrt{\frac{\sum \{AARit - (\sum AARit) / T\}^2}{T - d}} \quad (7)$$

Where: T is time in days

ANALYSIS OF DATA AND INTERPRETATION OF RESULTS

Introduction

Even though stock returns are not normally distributed but follow Paretian or student t- distributions occasionally (Chuvakhin, 2011), some tests of normality were done for the abnormal returns and they revealed the results as per table 1 of skewness test result of-0.285, and kurtosis test result of 3.2.

Table 4.1: Normality Test Results

Mean	0.247123	Median	0.238349
Maximum	0.606539	Minimum	-0.290054
Std. Dev.	0.194209	**Skewness**	**-0.285034**
Kurtosis	**3.200545**	Jarque-Bera	0.608661
Probability	0.737617	Sum	9.884921
Sum Sq. Dev.	1.470975		
Observations	40		

The average abnormal returns which also represent the average alpha values or average abnormal returns were tested to determine whether they were significantly different from zero to derive conclusions about the semi-strong form efficiency of the NSE (Ibbotson, 2010). This was done using descriptive statistics graphically and the parametric one sample t-test that tested the null hypothesis that the abnormal returns had a zero mean.

Results of Average Abnormal Returns (AAR)

The average abnormal returns were plotted on graph 5 based on the average abnormal returns expressed in percentage against the event period days. The results generally indicated visually that the abnormal returns were fluctuating mainly away from zero. After the event announcement date, other than from day 2 to day 5 when the average abnormal return appear negative, all the rest of the days during the event period exhibited positive average abnormal returns away from zero. The AAR curve generally appears to be higher before the bonus announcement date than during the period after the announcement perhaps an indicator that the market was expecting the bonus announcement to be great positive news hence the high abnormal returns and overreaction but when the announcement was made public, there was disappointment as the news was not as good as the expectations by the market hence the drop in abnormal returns and adjustment on day zero and fluctuation at lower abnormal return rates than before the bonus announcement dates as displayed in graph 1.

Results of T-test

The results of t-test of average abnormal returns (AAR) revealed a p-value of 0.000 at 95% confidence interval as per table 4.2.1 implying that the null hypothesis of the average abnormal returns being statistically equal to zero should be rejected. This means that it is possible to make profits or abnormal returns from bonus announcement information in the NSE as the stock prices do not assimilate such information instantly but do so in a lagged manner.

Table 4.2.1: One Sample Student T- Test Results For AAR

ONE-SAMPLE: TEST: Average Abnormal Returns						
	Test Value = 0					
					95% Confidence Interval of the Difference	
	t	df	**Sig. (2-tailed)**	Mean Difference	Lower	Upper
AAR	8.305	40	**.000**	.24953	.1888	.3102

Results of Cumulative Average Abnormal Returns (CAAR)

Graphically the results of cumulative average abnormal returns as shown in graph 2 and revealed that there was increased market activity in the form of increasing CAAR significantly from day -19 before the bonus announcement date which then declined slightly in momentum on day -15 but continued to increase up to the bonus announcement day 0. The CAAR curve then dipped briefly from day 0 to day 4 which indicated earnings surprise that investors were the impact of the news released to be different from what was actually released.

Results of One Sample Student T- Test

The null hypotheses that the average abnormal returns and cumulative average abnormal returns both had a zero mean were tested using the t-test and the results as per tables 4 and 5 revealed the p-values to be 0.000 as per table 4.4.1 which rejected the null hypotheses at all levels of significance and meant that both the average abnormal returns and cumulative average abnormal returns were significantly different from zero.

Table 4.4.1: One Sample Student T- Test Results for CAAR

ONE-SAMPLE TEST: Cumulative Average Abnormal Returns						
	Test Value = 0					
					95% Confidence Interval of the Difference	
	t	df	**Sig. (2-tailed)**	Mean Difference	Lower	Upper
CAAR	13.988	40	**.000**	5.97827	5.1145	6.8421

DISCUSSIONS, SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Normality test results as per table 4.1 revealed skewness of - 0.285, Kurtosis of 3.2 and Jarque-Bera of 0.609 which all indicated that the abnormal returns data is fairly normally distributed and subsequently the t-test a parametric test is relevant to the research. Normality of distribution also suggests that sample test results can be inferred to the population (Mugenda and Mugenda, 2003).

The rise of the CAAR curve from date – 19 up to day zero in graph 2, implied that the period before the bonus announcement date was an indicator of anticipated bonus news by investors who from past experience expect that bonus shares which is deemed as positive news, will be issued by the company during some given expected dates (Chuvakhin, 2011). As per past studies, there should be a direct relationship between positive and negative news events and the sign of the abnormal or abnormal returns whether positive or negative (Offenberg and Officer, 2010). On the bonus announcement day 0 up to day 6, the CAAR curve in graph 2 dipped instead of increasing which indicated the earnings surprise phenomenon where investors may have realized that the bonus issued was not so attractive after all, contrary to what they initially anticipated hence the market correction.

The continued increase in CAAR after the bonus announcement date in graph 6 indicated that the investors appeared to receive the bonus information as an opportunity to invest in the companies to gain in the future from their investment which is consistent with the signaling hypothesis (Copeland, 2005). However in stock markets that are regarded as efficient, the rise in the CAAR curve should stabilize on the date of the bonus event announcement rather than continue rising thereafter which occurs when there is an anomaly in the efficiency of a stock market with regard to the issuance of bonus shares that can lead to profit making opportunities for investors (Chuvakhin, 2011). As per the graph 2, the CAAR curve continued to rise at a significant rate even after the date of bonus announcement which indicates an anomaly in the efficiency of the NSE in the semi strong form with regard to issue of bonus shares by the listed companies.

In conclusion, the above results, indicate that the market overreacts in anticipation of the bonus announcement but corrects itself after the bonus news has been released which may not be as promising or profitable as initially expected. There is also an anomaly regarding the semi-strong form efficiency status of the NSE and it is possible for investors to profit on bonus share announcement events of the listed companies as evidenced by the positive CAAR which is consistent with earlier studies done by Olweny (2011) and Aduda and Chemarum (2010) that studied dividend announcement and stock splits respectively in the NSE using an event study methodology.

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APPENDIX 1: BONUS ISSUING COMPANIES DURING YEARS 2010 TO 2005.

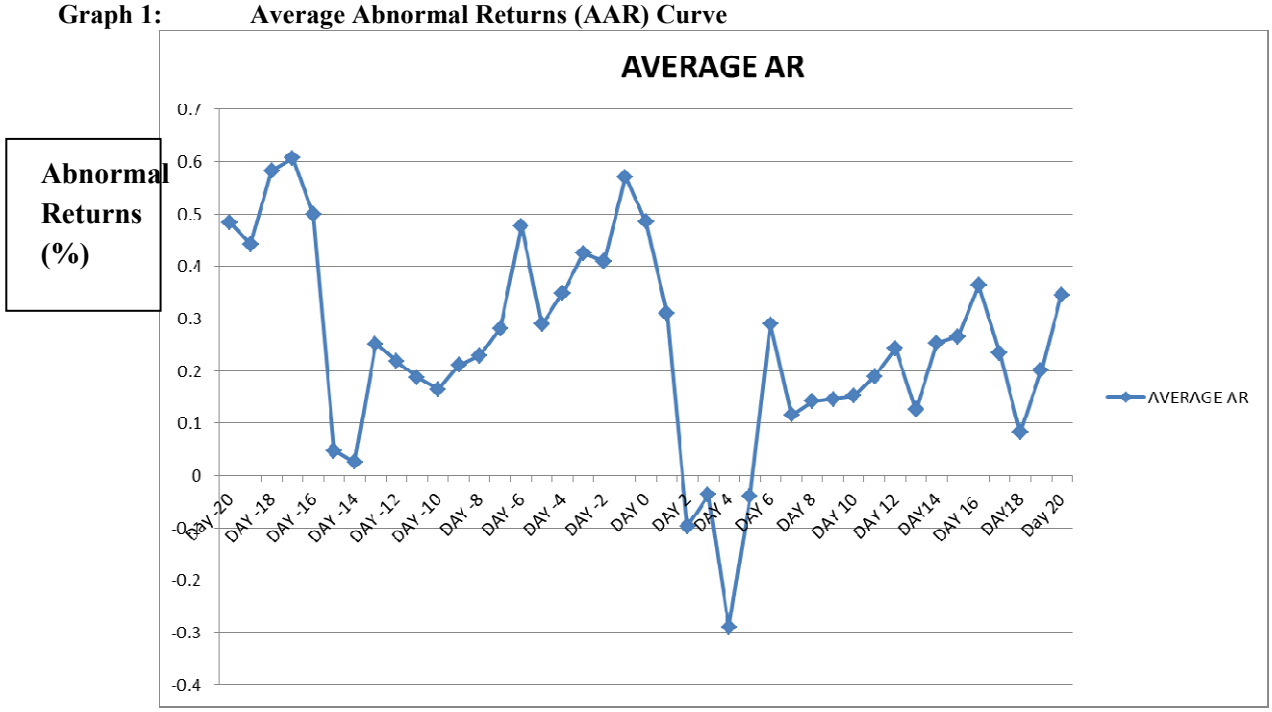
	COMPANY	BONUS RATIO	DATE OF ISSUE
1.	Jubilee Insurance	1:10	29/3/10
2.	Centum	1:10	6/6/10
3.	Nation Media Group	1:10	22/3/10
4.	National Bank of Kenya	2:5	10/3/10
5.	NIC Bank	1:10	24/2/10
6.	NIC Bank	1:10	19/2/09
7.	Unga Group	1:5	25/9/08
8.	Cmc Group	1:5	10/1/08
9.	East African Breweries	1:5	31/8/07
10.	Mumias Sugar Co.	2:1	31/8/07
11.	NIC Bank (2010)	2:1	27/7/07
12.	Jubilee Insurance	1:4	26/4/07
13.	TPS Serena	1:5	23/3/07
14.	Sasini Tea Co.	1:5	18/12/07
15.	Equity Bank	2:1	13/2/07
16.	Barclays Bank	3:1	6/11/06
17.	Standard Group	1:8	31/10/06
18.	Diamond Trust Bank	1:4	25/2/05

Source: NSE

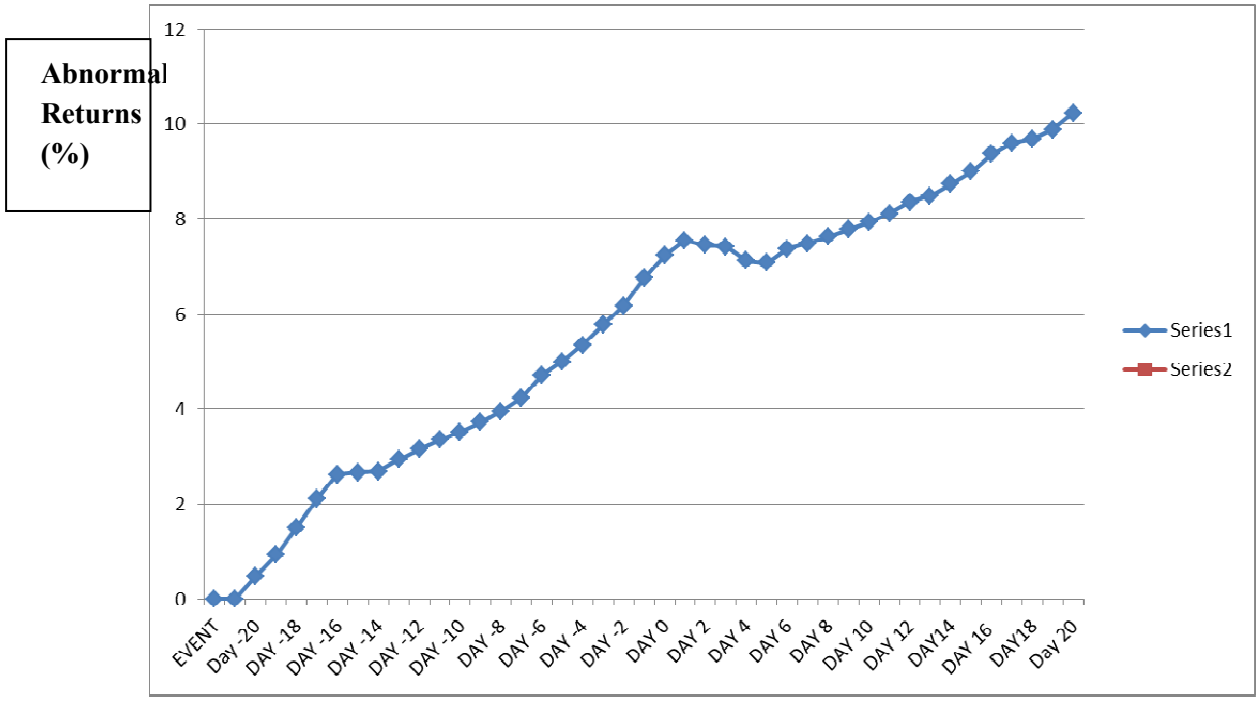
APPENDIX 2: AVERAGE ABNORMAL RETURN (AAR) AND CUMULATIVE AAR (CAAR) DATA

EVENT PERIOD	AAR	CAAR	EVENT PERIOD	AAR	CAAR
Day -20	0.483572	0.483572	DAY 1	0.310636	7.545862
DAY -19	0.442546	0.926118	DAY 2	-0.09653	7.449332
DAY -18	0.582537	1.508654	DAY 3	-0.03654	7.412795
DAY -17	0.606539	2.115193	DAY 4	-0.29005	7.12274
DAY -16	0.499414	2.614608	DAY 5	-0.0408	7.081943
DAY -15	0.04755	2.662158	DAY 6	0.289831	7.371774
DAY -14	0.025897	2.688054	DAY 7	0.115401	7.487175
DAY -13	0.251717	2.939771	DAY 8	0.141951	7.629125
DAY -12	0.218428	3.158199	DAY 9	0.145761	7.774886
DAY -11	0.187282	3.345481	DAY 10	0.152055	7.92694
DAY -10	0.164995	3.510475	DAY 11	0.188935	8.115875
DAY -9	0.210915	3.72139	DAY 12	0.241987	8.357863
DAY -8	0.229214	3.950605	DAY 13	0.125728	8.483591
DAY -7	0.281335	4.231939	DAY14	0.253551	8.737141
DAY -6	0.476833	4.708773	DAY 15	0.265322	9.002463
DAY -5	0.288757	4.997529	DAY 16	0.363845	9.366308
DAY -4	0.348498	5.346027	DAY 17	0.23471	9.601018
DAY -3	0.423874	5.769901	DAY18	0.083069	9.684088
DAY -2	0.40906	6.178961	DAY 19	0.200833	9.884921
DAY -1	0.570969	6.74993	Day 20	0.345619	10.23054
DAY 0	0.485297	7.235226			

Graph 1: Average Abnormal Returns (AAR) Curve



Graph 2: Cumulative Average Abnormal Returns (CAAR) Curve



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