# EFFECT OF BONUS ISSUE ANNOUNCEMENT ON SHARE 

 RETURNS OF COMPANIES LISTED AT THE NAIROBI STOCK EXCHANGE
## BY

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## DECLARATION

This research project is my original work and has not been presented for award of degree in any other University.

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This project has been submitted for examination with my approval as the University supervisor

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## DEDICATION

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## LIST OF ABBREVIATIONS

AMH: Adaptive market hypothesis

CAAR: Cumulative average abnormal returns

EMH: Efficient Market Hypothesis

NSE: Nairobi Stock Exchange

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#### Abstract

The study aimed at determining the effects of bonus issue announcement on share prices of companies listed at the NSE. Investors are interested in movement of share prices of various companies as this directly affects their wealth in form of capital gains hence are interested to know whether bonus announcement will affect share prices. The target population was all the 62 firms listed at Nairobi Securities Exchange as at 31st December, 2014. Purposive sampling was used to select a sample of five companies that issued bonus between 2010 and 2014. The study methodology was used to determine the influence of Bonus Announcement on Prices of shares. The event window period was between 15 days before and after announcement of bonus shares. Abnormal Returns (AR), Average Abnormal Return (AAR) and Cumulative Abnormal Returns (CAAR) around the event day were calculated using the Market Adjusted Abnormal Return model. Secondary data that is announcement date, closing share price, Nairobi Security Exchange index (NASI) and Volume traded was obtained from Nairobi Securities Exchange data base. From the study a positive relationship between bonus issue and share price of firms listed at the NSE due to a positive CAAR of 0.028 was concluded. The market changes to anticipation of bonus announcement and later corrects its self after the announcement. The study recommends more companies to be sampled in future with a wider event window period to give more accurate results, also other factors affecting share price should be considered while carrying out this research in future.


## CHAPTER ONE

## INTRODUCTION

### 1.1 Background of the Study

A stock market refers to a situation where shares of listed companies are traded through exchanges or over the-counter markets. The three forms of market efficiency are; weak, semi strong and strong. The first form implies all market information are reflected in prices of share, while the second form entails all information available to the public are reflected on share price. On the other hand, Strong form market efficiency implies that all the public and inside available information are reflected in share price as and when it reaches the market. Therefore, stock price and volume traded change every time there is new information in the market. (Copeland, Weston, \&Shastri, 2005).The announcements of financial results are useful since they give information on performance of closely competing companies giving a guide in forecasting forthcoming results of the companies (Bamber, Christensen, \&Gaver, 2000).

Bonus refers to the distribution of extra shares to existing shareholders proportional to their prevailing investment in the firm. A company may disseminate its bonus shares out of the initially retained earnings or accumulated reserves capital. When retained earnings are used, an entry book is normally created to retained earnings into paid up capital in the share holders' company balance sheet. And, if uses accumulated capital reserves, it adjusts the accumulated capital reserves into paid-up capital. In both cases the firm receives no cash. The outcome of each shareholder holding more shares, but with greater stocks on issue their claim on the assets of the firm is smaller. The commensurate
ownership of stocks by a shareholder, financial position and capital structure are not influenced (Mishra, 2005).

The study examined different literature by various authors both local and international to try and understand the impact of bonus issue announcement on share prices of companies. Event study methodology was applied. Pre and post 15 days event period was used. Purposive sampling was used to select five companies that issued bonus between the years 2010 and 2014.Data was retrieved NSE data base, data analysis was done and a conclusion drawn from the data.

### 1.1.1Bonus issue

Bonus shares are extra free shares distributed to existing company shareholders based on the total shares owned by the shareholder in the company to maintain their corresponding ownership of the company. Such bonus shares are provided from the financial base of a company's retained earnings or capital reserves derived from the assembled undisseminated profits in past periods. Company value is influenced by bonus shares (Pandey, 2005).

Miller \& Modigliani (1961) demonstrated that bonus issue does not affect shareholder wealth. When a firm financed a bonus issue from retained earnings, it makes entry book to find retained earnings into paid-up capital in the shareholders' equity section of the company balance sheet. A company may also decide to use accumulated capital reserves to realize a bonus issue in that case the company receives no cash and its financial position persists. The resultant changes due to the bonus issue; leads to the adjustment of outstanding by the bonus issue ratio, hence, the cost of the shares declines to the same bonus issue ratio. The shares market value held of each investor should stand. The share
price should not change significantly days surrounding announcement date if bonus issue announcement is anticipated.

### 1.1.2 Share price

The stock market is an essential market that contributes to the growth of economy and success and fosters capital formation. Moreover, stock market also links savers and capital users by merging funds, splitting risk, and assigning of wealth. Stock markets enhance economic growth by ensuring continuous flow of resources to the most benefiting investment opportunities. The frequent changes of Share prices are due to fluctuations in the market. However, at some time of the year one can notice that the prices of shares do appreciate frequently especially during the morning hours and many times in one day for some stocks (Mlonzi, Kruger \&Nthoesane, 2011).

Share price is the cost of purchasing a security on an exchange. Share price frequently various due to demand and supply market forces. The amount of shares issued by a company is entails the supply whiles the people who want to buy those shares from the respective owners are responsible for creating the demand. High demand may drive the share price up while if supply is higher than demand share prices go down (Byun\&Rozeff, 2003).

Price changes of stock indicate how investors feel about a company's worth. Share prices are affected by various factors such as market Indexes, financial health of a company, industry information regarding the company, economic trends in the country and world national news affecting Kenyan market. Higher cash flow results in increased price, since investors are more concern with the cash flows and what they mean at the present. Stock
value is majorly determined by cash flows because it determines the ability of the company to pay dividends (Byun\&Rozeff, 2003).

### 1.1.3 The Effect of Bonus Issue announcement on Share Prices

Aduda \& Chemarum (2010) observed that announcement of financial notification leads to adjustment in the market. The change might be either positive or negative. It is positive when there is either increase in the volume of shares, negative when there is a reduction in either the value or volume of shares.

Fama (1997) in his study noted that changes in the intrinsic value of a common stock would are caused by new information that was, actual or anticipated in the market for example announcement of bonus shares, stock splits, rights issue would affected the prospects of the company. If the companies depend on the process generating new information, this would create dependence in successive price changes of the security.

Dhar \&Chhaochharia (2008) noted that the profitability of a company is indicated by the announcement of bonus shares. Therefore, using the signaling theory, the managers of undervalued firms issue bonus shares, so as to portray the company as effective in its business and attract more shareholders. Mishra (2005) further agrees that the announcement of bonus shares indicates the good standing of a company. To this effect, Mishra noted that there are significant positive abnormal returns for a five-day period prior to the announcement of a bonus issue.

### 1.1.4 The Nairobi Stock Exchange

Nairobi Stock Exchange located in Nairobi, Kenya's capital city. It was started in 1954 as a voluntary association of brokers under the Societies Act. Until after independence in

1963, the business of dealing in shares was limited to the European community. NSE's strategic plan is to evolve into a full service securities exchange which supports trading, clearing and settlement of equities, debt, derivatives and other associated instruments. The number of listed companies in the NSE is sixty two as at $31^{\text {st }}$ December 2013 (NSE Website).

The sectors are Agricultural sector, Automobiles \& Accessories, Banking, Commercial and Services sector, Construction and Allied, Energy and Petroleum, Insurance, Investment, Manufacturing \& Allied, Telecommunication and Technology and the Growth and Enterprise Market Segment. There is the Fixed Income Securities Market Segment and the upcoming Futures and Options Market Segment (NSE Website).

The Nairobi Securities Exchange marked the first day of automated trading in government bonds through the Automated Trading System (ATS) in November 2009. The automated trading in government bonds marked a significant step in the efforts by the NSE and Central Bank of Kenya (CBK) towards creating depth in the capital markets by providing the necessary liquidity (NSE, 2013).

To boost funds, a company engages in issuance more shares, publishing of prospectus, which gives all admissible details about the activities and eventual prospects of a company, while also stating the price per share of the Issue. This will facilitate the inflow of international capital; and stock markets also improve privatization programs of the government. Some of the Firms that issued bonus shares between 2008 and 2014 are E.A Breweries, Jubilee Insurance, KPLC, Nation Media Group, NIC bank, Kenya Re Insurance Company, Cooperative Bank, EAAGADS LTD., and BAT Kenya (NSE Website).

### 1.2Research Problem

The results of the study by Chemarum (2010) in NSE revealed that the Kenyan market reacts positively to bonus issue, as shown by the increased volumes of shares traded around the bonus issue. Theoretically, the date for the bonus issue date is normally anticipated depending on the past experience of a company's bonus issuance and hence the issue date is not expected to affect the value of stock greatly when announced (Mishra,2005). On the contrary, the effectiveness of a company is clearly indicated by the reaction to the bonus announcement (Amuthan\&Ayyappan, 2011).

A study conducted by Gichema (2007) on the effects of bonus issue announcement on stock prices of companies listed at the NSE showed that bonus issues commonly bring about positive reactions to the stock price in the interim but produce long term benefits in the market price for widely held stocks in the NSE. Iminza (1997) established the effect of stock issue on stock prices. The researcher collected data through secondary data obtained from the Nairobi Stock Exchange. She used the chi square and f distribution methodology to measure the goodness of fit of stock prices five (5) days prior and five (5) days following the bonus announcement date. She concluded that bonus issue had significant impact on share prices.

On 12-Aug-2006 CFC Stanbic Holdings Ltd announced an interim dividend of Kes.0.63 on .The market share price increased gradually then steeply during the period prior to the date of announcement. The event window period experienced the highest increases in the shares prices while the period after the announcement date registered a decline in the share prices. Therefore the returns were highest during the event period and lowest during the post announcement period.

Mishra (2005) conducted a research to examine the reaction of the stock price to the information content of bonus issues so as to find out whether the Indian stock market is semi strong efficient. The period of the study is June 1998 to August 2004. Sample of 46 bonus issues were used to study the announcement effect by using the event study methodology. Event window was taken from +20 to -20 , with 0 being the date of announcement of the issue. It was found that on an average, the stock starts showing positive abnormal returns nine to eight days before the announcement date which might be due to leakage of information. In general, the behavior of AAR's and CAAR's was found to be in conformity with the expectation, thereby proving that the Indian Stock Market was semi strong efficient.

Few studies have been conducted in the Kenyan market with inconclusive results also there have been inconsistent international findings with regard to bonus issue. It is then not possible to generalize the effect of bonus issue announcement on share price of companies listed at the NSE hence there exists gaps. This study seeks to fill the identified gaps.

### 1.3 Research Objective

To establish the effect of bonus issue announcement on the market price of shares of companies listed at the NSE.

### 1.4 Value of the Study

Financial performance of a company is of interest to different group of investors. Current and potential investors determine the company's financial strength and weaknesses to enable assess company's value. External analysts, management are also concerned with analyzing company's performance over time. It will enable current and potential
investors determine if bonus issue announcement is the best means of evaluating the performance of a firm. It will enable investors make decisions on whether to give bonuses or not. Managers will be able to make wise investment decisions on increasing investor's wealth and returns based on this research. Stockbrokers would like to maximize their returns. This study will help them make decision on whether to purchase more shares or fewer shares when bonus shares are announced.

The study will assist learning institutions in providing reference and literature to future researchers seeking to carry out further research in this field or in a related area. This will aid in development of knowledge in this line of study. Since certain aspects in this study may not be covered exhaustively, this study will act as a point of reference to future researchers.

## CHAPTER TWO

## LITERATURE REVIEW

### 2.1 Introduction

The chapter reviews the related literature on the influence of bonus issue announcement on stock performance. The theories discussed are efficient market theory, signaling theory and Behavioral Finance Theory. The section also reviews empirical studies undertaken on bonus issue announcement both globally and locally and a summary of the literature review.

### 2.2 Theoretical literature review

The announcement of financial results is very useful since it provides both information and also offer signals for performance of similar firms. This can be attained by scrutinizing financial returns from competitor firms to model in estimating the future results of a firm. Factual results revealed that markets mostly react when financial information is provided to investors (Aduda\&Chemarum, 2010). The study employed efficient market theory, signaling theory and behavioral finance theory to establish the effect of bonus issue announcement on share prices of companies listed at the NSE.

Masry (2015b) revealed that bonus issue informs the market and hence indirectly affects investor preference. The signals before the announcement allow for changes of investor and shareholder decisions. Bonus announcement indicates that the company will do well in the future and has capability of making high profits hence shareholders tend to invest more in the company.

Dhar\&Chhaochharia (2008) proposed that the use of signaling theory, understated firms can benefit in that managers issue bonus shares, in order to show confidence in a firm future leading to an escalation in the sum of shareholders in the firm.

### 2.2.1 Efficient Market Theory

The Efficient Market Hypothesis is an investment theory is based on the Random Walk Theory which knocks the possibility of any arbitrage in the market through a lot of profit can be earned with minimum risks. The market continuously reflects new information that may affect performance of the company for example corporate action, growth of the company.

There are three forms of market efficiency, weak, semi-strong and strong. Weak form implies all market information are reflected in prices of share, semi-strong implies all publicly available information are reflected on share price and Strong form market efficiency implies that all the public and inside available information are reflected in share price as and when it reaches the market.(Copeland, 2005).

Grossman\&Stiglitz(1995) argue that a perfectly efficient market cannot exist. Investors require a return for gathering information, which is impossible if all available information is already included in share prices. Without an incentive to gather information, it would be needless to trade and the market would collapse.

### 2.2.2 Signaling Theory

Masry (2015b) bonus announcement reflects that a company will do well in future therefore has the influence of alerting the market hence influenced investor indirectly. At the period of announcement of bonus shares, the signals before allow for the alteration of
the shareholders and other investors decisions. Dhar\&Chhaochharia (2008) noted the signaling theory can be used by managers issue bonus shares particularly in undervalued firms, so as to express confidence in a company and lead to an This chapter contains a review of the related literature on the effect of bonus issue announcement on stock performance. The theories discussed are efficient market theory, signaling theory and Behavioral Finance Theory. The section also reviews empirical studies undertaken on bonus issue announcement both globally and locally and a summary of the literature review.

### 2.2.3 Behavioral Finance Theory

This is a theory that assumes that investors are rational and behave in a rational manner. Over time another school of thought has emerged. This school of thought hypothesizes that investors are not always rational and therefore the study of market efficiencies and security pricing should take into account the behavior of investors. This school of thought has evolved into a branch of finance known as Behavioral Finance (Shefrin\&Thaler ,1988).

Behavioral finance research concentrated on establishing extent to which different market forces ie rational analysis of firm specific and macro-economic fundamentals, human and social psychology, and cultural trends effecting the expectations of investors and determining their level of confidence or fear. Behaviorists hold that at times, the main explanations of stock market movements are the drivers of human and cultural psychology, or animal spirits (Keynes, 1936).

The Adaptive market hypothesis (AMH), assumes prosperous market players apply heuristics until they no longer bring any effect and then adjust them accordingly. It assumes investors appease rather than boost utility. They select the information which they feel is better and they use it to make decisions to reach sub goals, goals that are directed toward their desired goal. Therefore they do not make optimal decisions as prescribed by utility theory. AMH therefore leads to five important conclusions: Investors make decisions to help them survive rather to maximize utility, Investors must adapt to survive, because participants adapt, no investment strategy can continually outperform, Risk premiums will vary depending on investor perception of and aversion to risk and because investor's assets can be temporarily mispriced, active management is allowed to capture excess returns (Keynes, 1936).

### 2.3 Factors affecting Share Prices

There are various factors that affect share price as discussed below. The primary function of stock market is to support the country's economy growth, also used as a tool of measuring growth in industrial. The rising share index is an indicator of economic growth while falling index and stock prices reflects an unstable economy (Garza-Garsia\&Yu, 2010).

### 2.3.1 Inflation

Inflation is the rate at which prices of goods go up and this disturbs the conduct of stock markets because it causes disparities between real and nominal interest rates thus changing the spending and saving power of investors. If the inflation is high, the purchasing power of investors goes down and thus demand is lower than supply causing a
decrease in share price and vice versa. Firms that experience unexpected changes in the rate of inflation find it difficult to plan, thereby undermining their growth (Reilly, 1997).

### 2.3.2Exchange Rate

Donnelly\&Sheehy (1996) Exchange rate defined as the value of a currency for the purpose of conversion. Exchange rate affect the stock market return volatility owing to its information content to the investors. Some studies have concluded that there is a firm relationship between movement of exchange rate and stock market rebounds volatility, while others have not. Specifically, the information content of exchange rate movement would be carried to the securities business.

### 2.3.3 Investments

Other investments apart from shares traded on the stock market determine the stock market performance (Chen, Goldstein \& Jiang 2007). The competition for investment between the stock market and other sectors of the economy such as governments bonds, treasury bills, and foreign equity among others is high. Retrieved from Nairobi Stock Exchange website:http://www.nse.co.ke

### 2.4 Empirical Review

Dividend announcement is an alternative signaling mechanism that also informs investors about the future profitability of their investments in a firm (Osei, 2002). Many studies undertaken in various stock markets in the world produced mixed results. Wulff (2002) carried out a research on market reaction to stock split in the German market and found excess returns during the first four days following the split announcement. These studies suggested that splits were mainly aimed at restoring stock prices to abnormal range. Some support was also found for signaling motive of stock splits. Some studies found
that markets reacted negatively. Goyonke et al. (2006) noted that firms that split their stock experienced worsening liquidity within the first 9 to 12 months.

For instance, study done by Tsangarakis (1996) in Greece found a positive relationship between announcement of a rights issue and increase in returns. A local study by Kithinji, Oluoch \& Mugo(2014) on effect of rights issue on firms share performance also found that rights issue has effects on the share performance of the companies listed in NSE.

Empirical studies have shown that the market generally reacts positively to the announcement of bonus issues.

### 2.4.1 International Evidence

Mishra (2005) studied market reaction around bonus issue announcement in India in order to determine whether the market is efficient in the semi-strong form or not. The event study sampled 46 bonus issuance between years 1998 and 2004. An event window period 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 due to insider trading.

Barnes \&Shiguang (2001) studied China market efficiency by analyzing the response of stock prices to announcement of bonus issues using event study methodology. An event window period 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. Results indicated that high bonus ratio measured by the number of bonus shares over the number of existing shares during the period will
generally attract positive returns while issues with low bonus ratio will attract low returns.

Darrel \& Frank (2010) Scholars were interested in establishing whether insider purchases have an influence on stock price return and risk return around the purchase date. They therefore did a study on insider trading as a test of semi-strong form efficiency. They employed the standard event study rate of returns of firms and event window period 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

Hadi (2006) threw light on the types of Efficient Market Hypothesis. He did a detailed research on weak, semi-strong and strong forms of market efficiency. He conducted a research on the Jordan market. He concluded that the securities exchange market reacted with mixed signals on releasing different information on solvency, liquidity and profitability of different companies. It is observed that accounting based research generally assumes that market is efficient in semi-strong form. The reason behind is that the financial reports are considered public information once they have been released in the market.

### 2.4.2 Local Evidence

Dickinson \&Muragu (1994) studied market efficiency in developing Countries to find out how the security market reacts to new information and focused on the Nairobi stock Exchange. They employed the use of serial correlation test of individual sampled companies, correlation coefficient testing across lags of individual sampled companies,
binomial test of individual companies, Q statistics test and Runs tests. The results indicated that the Nairobi Stock Exchange was efficient in the weak form.

Mutinda (2005) assessed the effect of dividend announcements on future prospects for firms listed at the NSE. He found that securities with high dividends gained value much faster than low dividend securities. This could also be related to bonus announcement, companies that announce bonus shares are assumed will be profitable in future thus gain value faster, He however did not deal with the implications of this relationship on efficiency market.

Koech (2013) from research he undertook, he concluded that stock splits announcements caused a general increase in stock prices. He did an event study with roughly a 60-day event window period, the effect of stock splits announcements on stock prices persisted for an average period of one month. He further noted that stock split announcements are reflected in stock prices almost immediately and on average, it takes 1 day for prices to react to stock splits

### 2.5 Conceptual Framework

A conceptual framework is a research tool whose intention is to assist a researcher to develop awareness and understanding of the situation under study(Kombo\&Tromp, 2006).It is very useful in research as it sets the foundation of how concepts are related, both dependent and independent variable of the study under review. It is derived from theory to identify the concepts included in the complex phenomena and show relationships.

The relationship among the various variables in the study is as shown below

Change in share price (increase/decrease) Speed at which price changes Sustainability of price change


Independent Variable
Dependent Variable

## Figure 1.1 Conceptual framework

The above diagram shows the relationship between an informational event and price changes. The informational event being Bonus issue announcement .When a firm announces bonus issue, investors use this information to make their buy and sell decisions. According to the EMH, security prices adjust quickly to the release of information. Therefore depending on the economic significance of that information, price will rise or fall to a new level. Nyamosi (2011) found out that if the market is semi strong form efficient, price adjustment will be rapid and no returns will be possible after three days. But if market is weak-form efficient, adjustment will be sluggish and excess returns will be significant beyond three days after announcement.

### 2.6 Summary of Literature Review

Stock market is an essential part of capital market. The economy of a country largely depends on a strong capital market. Bonus issue is an important decision for both investors and the firm as this decision works as an indicator of the company's
performance. Existing research on bonus issue have focused on developed economies. Most of the studies that have been undertaken on bonus issue were done outside the Kenyan market. The studies done in Kenya have been too few to give a conclusive result and hence the need to carry out this research. Also, market reaction elicited by bonus issue announcements as shown by studies done in other countries cannot be generalized to the Kenyan market because of differences in stock market activity, varying economic growth levels, diverse political environments, among others. Hence, there exists a gap for that reason this research will bring out clearly the effect of bonus issue on share prices of companies listed at the NSE. The study will also provide more information to scholars and point out any knowledge gaps for further research.

## CHAPTER 3

## RESEARCH METHODOLOGY

### 3.1 Introduction

The chapter outlines the design of the research, Population size, data collection and analysis procedures in order to attain the objective of the study which was to investigate the effect of bonus issue announcement on share prices of companies listed at the NSE.

### 3.2 Research Design

Cooper (1995) described research design as a technical plan for selecting the sources and types of information used to answer the research question. It is a framework for specifying the relationships among the study's variables. It helps a researcher answer questions vividly.

The study uses Event study methodology. Ronald \& Bernard, (1995) defined event study as a statistical method used to assess the effect of an event on the value of a security. It is a forward looking approach that focuses on identifying abnormal returns to firms from a specific event. The event can have either a positive or negative influenced on security value. If investors reacted favorably to an event, the expectation is that there will be positive abnormal stock returns around the event date. Conversely, if investors reacted unfavorably to an event, there will be negative abnormal stock returns. Event studies can reveal important information about how a security is likely to react to a given event and can help predict how other securities are likely to react to different events.

### 3.3 Population

Ngechu (2006) population is defined as a set of people, households, services, elements or events which are being investigated. This study targeted all Kenyan based companies that are listed on the NSE and those that had undertaken bonus issue between 2010 and 2014.The companies are classified into ten categories known as sectors. The sectors are; Agricultural, Commercial, Services, Finance and Investment, Industrial and Allied, Automobile and accessories, Construction, Energy and petroleum, Telecommunication and Technology, Insurance sector and Banking sector. In total there were 62 companies listed as at December 2014(NSE Website)

### 3.4 Sample Design

Purposive sampling was used as a sample method to get targeted companies since it is a technique that allows a researcher to use cases with the required information with respect to the objective of the study Mugenda, (2003). The sample consisted 5 companies from various sectors listed in the Nairobi Securities Exchange in Kenya that had announced bonus issue during the years 2010 to 2014 .

### 3.5 Data Collection

Data collected was secondary. Secondary data was obtained from NSE hand books. A data collection sheet was used to capture information on the five companies that announced their bonus issue during the period. Data captured was date of announcement, market index, daily closing share prices and traded volumes over an event window of 15 days prior and 15 days after the bonus issue announcement with the day of announcement being day zero. Share price for the relevant period were collected from NSE monthly bulletins with the main focus being on the date bonus issue as the event date.

Adjustments were made to the data to ensure that only relevant dates before and after the announcement date were used in the analysis.

### 3.6 Data Analysis

The event study statistical technique was used Mackinlay (1997) suggests that an event study measures the impact of a specific event on the value of the firm by using financial market data. The analysis involved examining abnormal returns for each of the sampled companies for 15days before the event and 15 days after the event. At each point in event time, the companies' abnormal returns and the average abnormal returns were calculated. The average abnormal returns were cumulatively summed up over the event time. Values calculated comprehensively for the total event window of 30 days to study the effect bonus issue announcement on share price of sample companies. Data was interpreted after being analyzed to assess the significance of event period cumulative abnormal returns.

Daily returns were obtained from the following formula:
$\mathrm{D}_{t}=\frac{\mathrm{P}_{t}-\mathrm{P}_{t}-1}{\mathrm{P}_{t-1}}$

Where:
$\mathrm{D} t=$ Daily returns at time t
$\mathrm{P} t=A d j u s t e d$ closing price at time t
Pt-l=Adjusted closing price one day before time t
After calculating the daily returns for each firm, Normal return is calculated using least square Model, abnormal returns are then calculated. These are a direct measure of the change in the stakeholder's wealth which is associated with the event. Abnormal returns are calculated as the difference between the actual returns and the estimated normal
returns for each stock in the event window. Similarly, abnormal returns are the components of returns which are unexpected. In econometric models, abnormal returns are the error terms that represent the variation in the dependent variable which is unknown and not caused by the independent variable. The abnormal returns are calculated using the equation below for all of the firms in the sample and then combined together.

ARit=Rit-NRit
Where:
ARit=Abnormal return of stock iat time $t$
Rit=Actual return on stock iat time $t$
NRit=Normal return on the stock iat time $t$
Fifthly, the average abnormal returns (AAR) are calculated. In order to measure the effect of the
event for the whole sample, AAR for each day in the event window is calculated as under.
$N$
$\mathrm{AAR} t=1 \Sigma \mathrm{AR} i t$
$\mathrm{N} i=1$
Where:
AAR $t=$ Average Abnormal Return on the stock at time $t$
ARit $=$ Abnormal return on stock $I$ at time $t$
$\mathrm{N}=$ Number of stocks in sample

As the final step, the cumulative average abnormal returns (CAAR) are calculated for the event period by first calculating the cumulative abnormal return (CAR) for each variable and then finding the average of CARs for each day. The CAR and CAAR for each variable was calculated as:
t2
CAR $i=A R i, t 1-\ldots \ldots \ldots \ldots . .+\operatorname{AR} i, t 2=\Sigma A R i t$
$t=t 1$
$N t 2$
$\mathrm{CAAR}=1 \Sigma \mathrm{CAR}$ ior $\mathrm{CAAR}=\Sigma \mathrm{AAR} i$
$\mathrm{N} t=1 t=t l$ The market model that will be applied is; $\mathrm{Y}=\mathrm{a}+\mathrm{b} 1 \mathrm{x} 1+$ error term

## CHAPTER FOUR

## DATA ANALYSIS, RESULTS AND DISCUSSION

### 4.1 Introduction

The chapter gives a summary of the findings on the effects of bonus issue announcement on share prices of five companies listed at the NSE that announced bonus issuance, for the period 2010-2014. Discussions of these results are presented in this chapter in tables and prose form to enhance easy usability.

### 4.2Event Study Methodology

Appendix 3 shows price reaction to bonus issue announcement for the sampled companies over an event period of 30 days, the date of announcement being zero.

Centum Investment had $54,995,183$ new shares to be issued during the bonus issue announcement. The share price increased due to bonus issue on $8^{\text {th }}$ june, 2010.The volume of shares traded was 1171600 on the date of the announcement. The announcement attracted an increase in share price on the announcement day. Negative abnormal returns were observed a day before, the day of announcement and a day after announcement meaning there may have been insider trading. Positive abnormal returns were observed and sustained two days post announcement.

AAR $t=1 \Sigma$ AR $i t$
$\mathrm{N} i=1$
$=(1 / 5) \times 00$
$=0$

NIC Bank Limited is engaged in the provision of retail and corporate banking, stock brokerage, banc assurance and investment banking services. NIC announced bonus issue on February, 24 2011.The announcement attracted increase in share price on the date of announcement .There was a positive return pre, on the announcement and the day of announcement and a day after.The abnormal return on the day of announcement was 0.7754 the volume traded was 85300 .Negative return was observed Post announcement.
$\mathrm{AAR} t=1 \Sigma \mathrm{AR} i t$
$\mathrm{N} i=1$
$=(1 / 5) \times 0.14$
$=0.028$

Jubilee Holding Issued bonus shares on $30^{\text {th }}$ march 2012.The share price reaction to bonus issue on $30^{\text {th }}$ March 2012 was negative. The announcement attracted a decrease in share price on the date of announcement and post announcement. The abnormal return on the day of announcement was -0.38 the volume traded was 1600 .on average positive abnormal return was observed post announcement.
$\mathrm{AAR} t=1 \Sigma \mathrm{AR} i t$
$\mathrm{N} i=1$
$=(1 / 5) \times 0$
$=0$

NMG announced bonus issuance on $21^{\text {st }}$ March 2013. The announcement attracted a positive change in share price and the volume traded being 138200 shares.Pre and post announcement sustained a positive return.
$\mathrm{AAR} t=1 \Sigma \mathrm{AR} i t$
$\mathrm{N} i=1$
$=(1 / 5) \times 0$
$=0$

Car \& General announced bonus issuance on January $29^{\text {th }}$ 2014.The announcement attracted a high increase in share price on the date of announcement. On the date of announcement there was a negative abnormal returns of -1.4 with a volume of 12000 traded shares.
$\mathrm{AAR} t=1 \Sigma \mathrm{AR} i t$
$\mathrm{N} i=1$
$=(1 / 5) \times 0$
$=0$

### 4.3 Interpretation of the Data and Conclusion

From the research findings bonus issue has an impact on share price. The impact is varied pre and post announcement. The abnormal returns of the securities sampled have to be averaged then checked if the mean differs from zero. In statistical terms the null hypothesis of the test is that the mean of abnormal returns is zero. The alternative hypothesis is that the mean of abnormal returns differ from zero. Pre-event abnormal
returns would indicate that the event is partially anticipated and post-event abnormal returns indicate the information is not.

### 4.3.1 Cumulative Average Abnormal Returns (CAAR)

CAAR is the sum of average abnormal returns for the sample firms. A CAAR of 0.028 was arrived at as under.
$\mathrm{CAAR}_{t}=\Sigma \mathrm{AAR}_{i t}$
$=0+0+0+0+0.028=0.028$
In statistical terms, the null hypothesis, if the mean of abnormal returns is zero is rejected at 0.01 level since the CAAR is more than 0.01 .That is 0.028 , the alternative hypothesis is that the mean of abnormal returns differ from zero is accepted implying that bonus issue announcements have an effect on the share price.

### 4.3.2 Conclusion

From the findings there was an increase in the share price as well as volume of shares traded after the announcement of bonus issue meaning that the management has confidence in the performance of the company in future resulting in shareholders confidence. There was abnormal return pre the bonus issuance meaning there might have been insider trading.

## CHAPTER FIVE SUMMARY, CONCLUSION AND RECOMMENDATIONS

### 5.1 Introduction

This chapter gives a summary of the study of the Effect of Bonus Issue Announcement on share price of companies listed at the Nairobi Stock Exchange, the results, conclusion and the recommendations

### 5.2 Summary

The aim of the study was to find out the effect of bonus issue announcement on share price of companies listed at the Nairobi stock exchange. Five companies listed at NSE that had bonus issue announcement during the period 2010-2014 were analyzed. Results show that there is an effect of bonus issue announcement on share prices during the period before and after the bonus issue announcement. Kenyan stock market is thus efficient thatis stock prices are adjusted according to any news arriving in market hence the significant increase or deterioration in stock returns that is price and volume of traded shares prior to and after bonus issue announcement for the companies listed at NSE. The significant CAARs suggest that bonus issue announcement provide valuable information which the market uses to adjust share prices.

### 5.3 Conclusion

Bonus issue announcements are informational events that cause changes in share prices. Bonus issue announcement are reflected in share prices almost immediately. On average, it takes 1 day for prices to react to bonus issue.

The objective of this study was to determine the effect of bonus issue announcement on share prices of companies listed at the NSE. From the study carried out, the results showed bonus announcement has an impact on share prices. The market changes to anticipation of bonus announcement and later corrects its self after the announcement. To achieve the above mentioned it was assumed that the cumulative abnormal returns arising from bonus issue announcement are significantly different from zero. This is because bonus issue announcement is quickly reflected in the share price thus allowing for statistically significant abnormal returns to be generated on the basis of trading.

### 5.4 Recommendations for Policy

The comparisons done were purely based on price trends and did not take into account changes in the market condition like growth and profitability of the firm, firm size and other market conditions which could have affected the activity of shares.

This is just an academic study indicating that even in Kenya, bonus issue announcement impacts stock returns. To find out exact magnitude, trend if any of how much and in which direction bonus issue announcement impacts stock returns in Kenya (prior to bonus issue announcement and after the announcement) a detailed analysis at a technical level covering all aspects is required.

### 5.5 Limitations of the Study

The study was expensive; with the introduction of selling of data by the NSE hence I couldn't cover more companies and a longer event window period.

Literature review heavily depended on studies of economically developed countries whose economic nature is different from that of Kenya.

The study was carried out on a five year period, a longer period of research would be give a broader dimension of the effect of bonus announcement on share prices.

This study is limited to one developing securities market, future work may be carried out for other developing markets in the Africa to ascertain the extent to which the findings.

### 5.6 Areas of Further research

A detailed analysis at a more technical level covering all aspects including more independent variables affecting bonus issue announcement is required for further studies in the area.

A study of whether bonus announcement affects volume traded by companies should be carried out.

A detailed analysis of more listed companies and their bonus issue announcements can give us more accurate results.

An extended event window period and more years of study would be recommended to find out the broader perspective regarding stock price changes pre and post bonus issue announcements, in Kenya.

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## APPENDICES

## Appendix 1. Companies that issued bonus Period 2007-2014

| Company | Bonus Ratio | Year |
| :---: | :---: | :---: |
| E.A breweries | 1:5 | 31/8/2007 |
| Jubilee insurance | 1:4 | 26/4/2007 |
| Kenya Power \& Lighting Co Ltd | 1:10 | 19/10/2011 |
| Nation media | 1:10 | 22/3/2011 |
| NIC Bank | 1:10 | 24/2/2011 |
| Kenya Re | 1:6 | 2012 |
| Coop bank | 1:5 | 2012 |
| Eaagads Ltd | 1:1 | 26/11/2008 |
| BAT kenya | 1:5 | 2012 |
| CMC Holdings | 1:5 | 08/01/2008 |
| Unga group | 1:5 | 25/09/2008 |
| City Trust | 1:10 | 14/10/2008 |
| NIC Bank | 1:10 | 19/02/2009 |
| CMC Holdings | 1:5 | 08/01/2008 |
| Unga group | 1:5 | 25/09/2008 |
| City Trust | 1:10 | 14/10/2008 |
| Centum Investment | 1:10 | 07/06/2011 |
| NIC Bank | 1:10 | 19/02/2009 |


| Kenya Re insurance | $1: 6$ | $24 / 04 / 2012$ |
| :--- | :--- | :--- |
| Carbacid | $1: 2$ | $23 / 10 / 2013$ |
| Car and General | $1: 5$ | $29 / 01 / 2014$ |

## Appendix 11.Share price reaction to bonus issue announcement

Centum Investment announced a Bonus of 1:10 ( 1 share for every 10 held)on 08-June-2010. Book Closure 16-July-2010.

| Days | Closing <br> Share Price | Share index | Returns | Abnormal return | Cumulative <br> Abnormal <br> Return | Volume Traded |
| ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| -15 | 18.85 | 9106 | 0.0000 | -18.3152 | -18.3152 | 115600 |
| -14 | 18.8 | 9209 | 17.7973 | -0.5179 | -18.83 | 112100 |
| -13 | 18.85 | 9214 | 17.8527 | -0.4626 | -19.30 | 88400 |
| -12 | 18.9 | 9228 | 17.9026 | -0.4126 | -19.71 | 99400 |
| -10 | 18.95 | 9263 | 17.9526 | -0.3626 | -20.07 | 177400 |
| -9 | 19.05 | 9258 | 18.0552 | -0.2600 | -20.33 | 202900 |
| -8 | 18.95 | 9187 | 17.9447 | -0.3705 | -20.70 | 102800 |
| -7 | 18 | 9070 | 16.9472 | -1.3680 | -22.07 | 93100 |
| -6 | 18.4 | 9186 | 17.4217 | -0.8935 | -22.96 | 90500 |
| -5 | 18.7 | 9233 | 17.7160 | -0.5992 | -23.56 | 153300 |
| -4 | 18.95 | 9225 | 17.9632 | -0.3520 | -23.91 | 212600 |
| -3 | 19.1 | 9265 | 18.1079 | -0.2074 | -24.12 | 129300 |
| -2 | 19.2 | 9293 | 18.2052 | -0.1100 | -24.23 | 197000 |
| -1 | 19.2 | 9285 | 18.2000 | -0.1152 | -24.35 | 320900 |
| 0 | 21 | 9287 | 20.0857 | 1.7705 | -22.58 | 1171600 |
| 1 | 21 | 9244 | 20.0000 | 1.6848 | -20.89 | 397200 |
| 2 | 20.75 | 9276 | 19.7380 | 1.4227 | -19.47 | 304500 |
| 3 | 20.75 | 9318 | 19.7500 | 1.4348 | -18.03 | 207500 |
| 4 | 20.5 | 9352 | 19.4878 | 1.1726 | -16.86 | 202200 |
| 5 | 20.5 | 9394 | 19.5000 | 1.1848 | -15.68 | 371800 |
| 6 | 20 | 9435 | 18.9750 | 0.6598 | -15.02 | 345400 |
| 7 | 20.25 | 9439 | 19.2623 | 0.9471 | -14.07 | 130700 |
| 8 | 20.5 | 9432 | 19.5122 | 1.1970 | -12.87 | 93100 |
| 9 | 20.25 | 9385 | 19.2377 | 0.9224 | -11.95 | 141700 |


|  | 90.25 | 9395 | 19.2500 | 0.9348 | -11.02 | 246900 |
| ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| 11 | 20.5 | 9409 | 19.5122 | 1.1970 | -9.82 | 418400 |
| 12 | 20.5 | 9459 | 19.5000 | 1.1848 | -8.63 | 484500 |
| 13 | 21.75 | 9473 | 20.8075 | 2.4922 | -6.14 | 387600 |
| 14 | 22.5 | 9464 | 21.5333 | 3.2181 | -2.92 | 138600 |
| 15 | 22.25 | 9500 | 21.2388 | 2.9235 | 0.00 | 333200 |

Source NSE 2010 Price list

NIC Bank announced a Bonus ratio of 1:10 on 24-Feb-2011. Books closure 07-Apr-2011. Payment 25-May-2011

| Days | Closing <br> Share Price | Share index | Returns | Abnormal return | Cumulative <br> Abnormal <br> Return | Volume Traded |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| -15 | 50 | 9791 | 0.0000 | 0.0067 | 0.0067 | 19400 |
| -14 | 50 | 9784 | 0.00000 | 0.0067 | 0.01 | 38600 |
| -13 | 50 | 9791.2 | 0.00000 | 0.0067 | 0.02 | 85900 |
| -12 | 50 | 9784.9 | 0.00000 | 0.0067 | 0.03 | 90500 |
| -10 | 50 | 9763 | 0.00000 | 0.0067 | 0.03 | 16500 |
| -9 | 50 | 9796 | 0.00000 | 0.0000 | 0.03 | 93300 |
| -8 | 50 | 9768 | 0.00000 | 0.0067 | 0.04 | 51700 |
| -7 | 50 | 9780 | 0.00000 | 0.0067 | 0.05 | 15400 |
| -6 | 50 | 9779 | 0.00000 | 0.0000 | 0.05 | 292500 |
| -5 | 50 | 9777 | 0.00000 | 0.0067 | 0.05 | 150000 |
| -4 | 50 | 9742 | 0.00000 | 0.0067 | 0.06 | 21800 |
| -3 | 50 | 9653 | 0.00000 | 0.0067 | 0.07 | 75200 |
| -2 | 50.5 | 9694 | 0.00990 | 0.0166 | 0.08 | 110400 |
| -1 | 51.5 | 9696 | 0.01942 | 0.0261 | 0.11 | 141100 |
| 0 | 52 | 9752 | 0.00962 | 0.0163 | 0.13 | 85300 |
| 1 | 51.5 | 9773 | -0.00971 | -0.0030 | 0.12 | 171100 |
| 2 | 50 | 9666 | -0.03000 | -0.0233 | 0.10 | 92400 |
| 3 | 50 | 9535 | 0.00000 | 0.0067 | 0.11 | 114500 |
| 4 | 50.5 | 9511 | 0.00990 | 0.0166 | 0.12 | 96000 |
| 5 | 50.5 | 9508 | 0.00000 | 0.0067 | 0.13 | 172100 |
| 6 | 50 | 9501 | -0.01000 | -0.0033 | 0.13 | 14400 |
| 7 | 49.75 | 9401 | -0.00503 | 0.0017 | 0.13 | 88700 |
| 8 | 48.75 | 9303 | -0.02051 | -0.0138 | 0.11 | 44200 |


| 9 | 46.75 | 9147 | -0.04278 | -0.0361 | 0.08 | 35200 |
| ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| 10 | 45.75 | 8924 | -0.02186 | -0.0152 | 0.06 | 149600 |
| 11 | 46.5 | 9000.89 | 0.01613 | 0.0228 | 0.09 | 74900 |
| 12 | 47.75 | 9133 | 0.02618 | 0.0329 | 0.12 | 38000 |
| 13 | 49.25 | 9246 | 0.03046 | 0.0372 | 0.16 | 139100 |
| 14 | 49.25 | 9228 | 0.00000 | 0.0067 | 0.16 | 250700 |
| 15 | 47.75 | 9227 | -0.03141 | -0.0247 | 0.14 | 9800 |

## Source NSE 2011 Price list

Jubilee Holdings Ltd announced a Bonus ratio 1:10 on 30-March-2012. Books closure: 23-May-2012 (Subject to approval)

| Days | Closing Share Price | Share index | Returns | Abnormal return | Cumulative <br> Abnormal <br> Return | Volume Traded |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| -15 | 160 | 7404 | 0.0000 | -0.0042 | -0.0042 | 1800 |
| -14 | 160 | 7404 | 0.0000 | -0.0042 | -0.01 | 0 |
| -13 | 170 | 7305 | 0.0588 | 0.0547 | 0.05 | 200 |
| -12 | 161 | 7305.6 | -0.0559 | -0.0601 | -0.01 | 1200 |
| -10 | 175 | 7313 | 0.0800 | 0.0758 | 0.06 | 4600 |
| -9 | 177 | 7271 | 0.0113 | 0.0071 | 0.07 | 1400 |
| -8 | 185 | 7164 | 0.0432 | 0.0391 | 0.11 | 2200 |
| -7 | 197 | 7247 | 0.0609 | 0.0567 | 0.17 | 9900 |
| -6 | 185 | 7298 | -0.0649 | -0.0690 | 0.10 | 9300 |
| -5 | 184 | 7352 | -0.0054 | -0.0096 | 0.09 | 6200 |
| -4 | 184 | 7323 | 0.0000 | -0.0042 | 0.08 | 1500 |
| -3 | 184 | 7338 | 0.0000 | -0.0042 | 0.08 | 900 |
| -2 | 184 | 7353 | 0.0000 | -0.0042 | 0.07 | 10200 |
| -1 | 184 | 7346 | 0.0000 | -0.0042 | 0.07 | 11800 |
| 0 | 178 | 7347 | -0.0337 | -0.0379 | 0.03 | 1600 |
| 1 | 173 | 7324 | -0.0289 | -0.0331 | 0.00 | 900 |
| 2 | 177 | 7392 | 0.0226 | 0.0184 | 0.02 | 32700 |
| 3 | 177 | 7397 | 0.0000 | -0.0042 | 0.01 | 2800 |
| 4 | 177 | 7397 | 0.0000 | -0.0042 | 0.01 | 2800 |
| 5 | 171 | 7371 | -0.0351 | -0.0393 | -0.03 | 2000 |
| 6 | 170 | 7410 | -0.0059 | -0.0100 | -0.04 | 3500 |


| 7 | 173 | 7437 | 0.0173 | 0.0132 | -0.03 | 300 |
| ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| 8 | 175 | 7472 | 0.0114 | 0.0073 | -0.02 | 600 |
| 9 | 173 | 7468 | -0.0116 | -0.0157 | -0.04 | 1000 |
| 10 | 173 | 7493 | 0.0000 | -0.0042 | -0.04 | 2500 |
| 11 | 177 | 7549 | 0.0226 | 0.0184 | -0.02 | 1600 |
| 12 | 184 | 7338 | 0.0380 | 0.0339 | 0.01 | 900 |
| 13 | 184 | 7353 | 0.0000 | -0.0042 | 0.01 | 10200 |
| 14 | 184 | 7346 | 0.0000 | -0.0042 | 0.00 | 11800 |
| 15 | 184 | 7347 | 0.0000 | -0.0042 | 0.00 | 1600 |

Source NSE 2012 Price list

Nation Media Group announced a bonus ratio of 1:5 on 21-March-2013. Books closure 12-April-2013.

| Days | Closing <br> Share Price | Share index | Returns | Abnormal return | Cumulative <br> Abnormal Return | Volume Traded |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| -15 | 267 | 10655 | 0.0000 | -0.0045 | -0.0045 | 8300 |
| -14 | 270 | 10718 | 0.0111 | 0.0066 | 0.00 | 2800 |
| -13 | 269 | 10809 | -0.0037 | -0.0083 | -0.01 | 28600 |
| -12 | 270 | 10928 | 0.0037 | -0.0008 | -0.01 | 15300 |
| -10 | 270 | 11030 | 0.0000 | -0.0045 | -0.01 | 3300 |
| -9 | 270 | 11179 | 0.0000 | -0.0045 | -0.02 | 5700 |
| -8 | 275 | 11537 | 0.0182 | 0.0136 | 0.00 | 16700 |
| -7 | 280 | 11937 | 0.0179 | 0.0133 | 0.01 | 30700 |
| -6 | 282 | 11802 | 0.0071 | 0.0026 | 0.01 | 37800 |
| -5 | 280 | 11593 | -0.0071 | -0.0117 | 0.00 | 5100 |
| -4 | 282 | 11323 | 0.0071 | 0.0026 | 0.00 | 19200 |
| -3 | 283 | 11256 | 0.0035 | -0.0010 | 0.00 | 6500 |
| -2 | 282 | 11320 | -0.0035 | -0.0081 | 0.00 | 13100 |
| -1 | 286 | 11352 | 0.0140 | 0.0094 | 0.00 | 36600 |
| 0 | 303 | 11321 | 0.0561 | 0.0516 | 0.06 | 138200 |
| 1 | 330 | 11409 | 0.0818 | 0.0773 | 0.13 | 50500 |
| 2 | 321 | 11478 | -0.0280 | -0.0326 | 0.10 | 22400 |
| 3 | 330 | 11409 | 0.0273 | 0.0227 | 0.12 | 50500 |
| 4 | 332 | 11478 | 0.0060 | 0.0015 | 0.13 | 22400 |
| 5 | 355 | 11791 | 0.0648 | 0.0603 | 0.19 | 10200 |


| 6 | 366 | 12158 | 0.0301 | 0.0255 | 0.21 | 24400 |
| ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| 7 | 377 | 12139 | 0.0292 | 0.0246 | 0.24 | 32800 |
| 8 | 373 | 12045 | -0.0107 | -0.0153 | 0.22 | 34000 |
| 9 | 379 | 12065 | 0.0158 | 0.0113 | 0.23 | 38200 |
| 10 | 381 | 12041 | 0.0052 | 0.0007 | 0.23 | 17000 |
| 11 | 386 | 12153 | 0.0130 | 0.0084 | 0.24 | 22700 |
| 12 | 398 | 12214 | 0.0302 | 0.0256 | 0.27 | 56700 |
| 13 | 395 | 12171 | -0.0076 | -0.0121 | 0.25 | 12800 |
| 14 | 338 | 12094 | -0.1686 | -0.1732 | 0.08 | 2800 |
| 15 | 314 | 12015 | -0.0764 | -0.0810 | 0.00 | 30300 |

Source NSE 2013 Price list

Car \& General announced a bonus for 1:5 on 29-Jan-2014. Books Closure 19-February2014.

| Days | Closing <br> Share Price | Share index | Return | Abnormal return | Cumulative <br> Abnormal <br> Return | Volume Traded |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| -15 | 28 | 14035 | 0.0000 | -0.0010 | -0.0010 | 4400 |
| -14 | 29.75 | 14159 | 0.0588 | 0.0578 | 0.06 | 2000 |
| -13 | 30 | 14150 | 0.0083 | 0.0073 | 0.06 | 10000 |
| -12 | 28 | 14069 | -0.0714 | -0.0724 | -0.01 | 300 |
| -10 | 28 | 14079 | 0.0000 | -0.0010 | -0.01 | 0 |
| -9 | 28.5 | 14101 | 0.0175 | 0.0166 | 0.01 | 200 |
| -8 | 30 | 14035 | 0.0500 | 0.0490 | 0.06 | 0 |
| -7 | 31.5 | 14028 | 0.0476 | 0.0466 | 0.10 | 100 |
| -6 | 34.5 | 14111 | 0.0870 | 0.0860 | 0.19 | 1000 |
| -5 | 34.5 | 14185 | 0.0000 | -0.0010 | 0.19 | 100 |
| -4 | 34.5 | 14273 | 0.0000 | -0.0010 | 0.19 | 400 |
| -3 | 34.5 | 14273 | 0.0000 | -0.0010 | 0.19 | 3600 |
| -2 | 34.75 | 14457 | 0.0072 | 0.0062 | 0.19 | 1500 |
| -1 | 36.75 | 14336 | 0.0544 | 0.0534 | 0.25 | 0 |
| 0 | 45 | 14127 | 0.1833 | 0.1823 | 0.43 | 12000 |
| 1 | 41.5 | 13466 | -0.0843 | -0.0853 | 0.34 | 13700 |
| 2 | 44.25 | 13651 | 0.0621 | 0.0612 | 0.40 | 3600 |
| 3 | 42 | 13672 | -0.0536 | -0.0546 | 0.35 | 1400 |
| 4 | 44 | 13735 | 0.0455 | 0.0445 | 0.39 | 1200 |


| 5 | 40 | 13726 | -0.1000 | -0.1010 | 0.29 | 4300 |
| ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| 6 | 40 | 13808 | 0.0000 | -0.0010 | 0.29 | 10100 |
| 7 | 40 | 13817 | 0.0000 | -0.0010 | 0.29 | 600 |
| 8 | 40 | 13770 | 0.0000 | -0.0010 | 0.29 | 2100 |
| 9 | 31.25 | 14085 | -0.2800 | -0.2810 | 0.01 | 200 |
| 10 | 31.25 | 14036 | 0.0000 | -0.0010 | 0.01 | 2100 |
| 11 | 31.5 | 14012 | 0.0079 | 0.0069 | 0.01 | 31900 |
| 12 | 31.5 | 14094 | 0.0000 | -0.0010 | 0.01 | 1700 |
| 13 | 30.25 | 13844 | -0.0413 | -0.0423 | -0.03 | 14300 |
| 14 | 32 | 13957 | 0.0547 | 0.0537 | 0.02 | 200 |
| 15 | 31.25 | 14065 | -0.0240 | -0.0250 | 0.00 | 35900 |

Source NSE 2014 Price list

