THE EFFECT OF BONUS ISSUES ANNOUNCEMENT ON THE STOCK RETURNS OF COMPANIES LISTED AT THE NAIROBI SECURITIES EXCHANGES

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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.

Signed …………………………………… Date……………………………….

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

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DEDICATION

I dedicate this Research project to my dear dad, Mr. Douglas Shikuku and my loving mum Mrs. Agnes Shikuku for their love, great sacrifice and investment to ensure the success of my education through the provision and their continuous encouragement.

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ABBREVIATIONS AND ACRONYMS

AAR: Average Abnormal returns

AR: Abnormal returns

CAAR: Cumulative average abnormal returns

CAR: Cumulative abnormal returns

EMH: Efficient Market Hypothesis

NSE: Nairobi Securities Exchange

ABSTRACT

The correlation between announcements of bonus issues and returns on the stock market has been an area of discussion for a long time, the study aimed at determining the effects of bonus issue announcement on stock market returns 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 64 firms listed at Nairobi Securities Exchange as at 31st December 2018. Census sampling was used to select all companies that issued bonus between 2014 and 2018. The event study methodology was used to determine the influence of Bonus Issues Announcement on stock market returns. The event window period was between 15 days before and 15 days 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. Once the data was coded, it was entered the Statistical Package for Social Sciences (SPSS) version 24 for analysis. From the study a positive relationship between bonus issue and share price of firms listed at the NSE due to a positive CAAR of 0.1279 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

The relationship between announcements of bonus issues and returns of stocks over time has been a topic of empirical literature. Theoretically, bonus issues increase the number of equity stocks, but do not affect the proportional ownership of the stock by the shareholder. The bonus issue date is commonly known in beforehand, so no new information should be included. Therefore, a significant price reaction on the stock returns as a result of the bonus issue announcement is not expected. The empirical studies of bonus issues and stock returns have however shown a statistical significant stock price reaction supporting the semi strong form Efficient Market Hypothesis (Mishra, 2004).

The research looked at different literature, both international and local, to try understand the effect of bonus issue announcement on stock market return of entities listed at the Nairobi Securities Exchange which have issued bonus issues within the last five years from 2014 to 2018. The event study methodology was applied using an event period of 15 days before and after the announcement.

1.1.1 Bonus Issue

Bonus issues is described a supply of free additional shares to stockholders instead of a dividend, which is in proportion to the shares already held (Dhar & Chaocharia, 2008). It is usually based on the quantity of shares held by shareholders at the time of the announcement. Bonus shares are usually announced when there is adequate profit for an

organization to declare a dividend but may not have cash to pay it. Bonus issues have no effect on the shareholder's stock ownership, but they however boost the amount of equity stocks.

Theoretical analysis shows that the bonus issue announcement date is usually known beforehand therefore no one expects any significant reaction to the share prices upon announcement. However, empirical studies explain that a market reaction exists consequent to announcement of the bonus issues hence causing a rise in the share prices. This supports the semi-strong EMH, which reveal that security markets will rapidly adjust to reflect the new data available on the market (Miller & Modigliani, 1961).

An entity can either distribute bonus shares from retained earnings or accumulated reserves of capital. When earnings are retained, an entry is made in the books to add the retained earnings to the amount paid in the balance sheet of the shareholder's equity. It adjusts these accumulated funds into paid-up capital if it is issued by the accumulated capital reserves. In both instances, however, the business gets no money (Pandey, 2005). Bonus issues may be issued out for various reasons; They may be issued out when a company has sufficient reserves which may not be needed in the future, it may also be issued out when to reduce the rate of dividends paid out as payments of dividends at high rates may attract competitors in the business. This therefore reduces the rate of dividends paid out from year to year hence regularizing it.

1.1.2 Stock Returns

A stock may be defined as a representation of equity ownership of an entity. A share price is the unit price of one share of a number of an entity's sealable shares, according to Huang (2004). When an individual purchases a stock, they immediately become a shareholder of the company. Stock prices usually change on a daily basis. Stocks are usually traded in the stock market. Stock markets refer to the physical location for overall market activity in a country. These activities may include the buying and selling of stocks. Stock prices in a certain country may be affected by various factors. These may include; dividend policy, bonus issues, stock splits, behavioral and other macro-economic factors. Supply and demand forces usually mostly drive stock prices (Mlonzi, Kruger & Nthoesane, 2011).

The economy of a country is a significant influencer of the stocks market. If the economy performs well, the market is said to be bullish and portrays factors such as high production, low unemployment rate and low inflation among other factors, this leads to rising stock prices in the respective stock markets. The inverse is said to be in the case of an economy performing poorly, the share prices will reduce in such an economy because of high inflation and low production among other factors. Other markets that provide opportunities for people to invest are mainly foreign markets, which mainly deals with derivative instruments such as futures, forwards and options (Dickson & Muragu, 1994).

Stock markets are important as they allow competition between various instruments of various entities in financial and non-financial institutions. By allowing competition, markets are able to satisfy each investors' risk and return preferences (Aduda &

Cheramum, 2010). Stock markets also give more than just a securities selling and buying platform. They also act as a user-capital saver coordinator by sharing risk, transferring assets, and pooling resources among the multiple investors.

According to Lee (1998), stock returns are defined as a gain or loss on an investment that is highly sensitive to expectations and fundamentals in a market. The stock return is usually monetary and is measured over a particular period which is either capital or income, relative on a security and expressed as a percentage. The stock market return is usually arrived at by the market index based on the percentage of the previous closing index.

The stock price performance is measured using the return value on the stock. If the obtained share price is higher than the previous period, the stock is termed to be superior price performance, the same happens when it is lower. This is computed through taking the change in market price of stock over the holding period (Kuria & Riro, 2013). Alternatively, it may be measured using the abnormal rate of return (actual return less expected stock of return). The increase or decrease in stock price performance acts as an indicator of the market performance. NSE 20 Share price index monitors the performance of Kenya's stock market.

1.1.3 Effect of Bonus Issue Announcements on Stock Returns

A signal can also be described as a warning or an indicator. The bonus issue is usually an indicator that an entity is able to service greater equity usually as a result of confidence of the management that the company would grow its profits and distribute dividends on all its

future shares. The signaling effect can be best described as a change in the share prices of a stock because of an announcement. It is presumed that, managers may use dividend payments to convey future earnings for investors. An increase in dividend payment may be an affirmative signal conveying possible increase in share prices for the firm in the future while a decline may be a negative signal that the share prices will decline in the future (Malkiel, 1970). Expectation of a bonus issue in a certain entity brings a climate of optimism to the share market hence leading to a rise in the company's stocks just before or upon the announcement of the bonus issues. Investors therefore expect the same direction to be followed by modifications in dividends and security prices (Boehmer, 2009).

According to Aduda and Chemarum (2010), a change in market is always expected on financial information announcements; the change may be positive leading to increase in value of shares or shares traded or negative leading to the decline in value of shares and shares traded. According to Amuthan & Ayyapan (2011), bonus issues sensitizes the market and may give a sign that the entity is well performing with the possibility to make large profits. Using the signaling theory, Dhar and Chhochharia (2008) indicated that management may issue bonus stocks or stock splits in an undervalued firm to suggest certainty in a company's future development leading to more investors investing in the business.

1.1.4 Nairobi Securities Exchange

Between 1920s and 1953, the British colonialists dealt with shares in Kenya without a physical trading floor. The NSE was set up and recorded as a voluntary shareholder

corporation under the Societies Act (1954) and was charged with the duty to set up the stock market and regulate trading operations. Trading was carried out by telephone and negotiated rates.

The NSE is one of Sub-Saharan Africa's leading exchanges, based in Kenya. It includes around 64 listed companies from the agricultural, automotive and accessory industries, banking, commercial and service industries, construction and related industries, power and oil, insurance, investment, manufacturing, telecommunications. It has over 40 trading participants and has over USD 10 Million daily trading volume. Derived from NSE website: https://www.nse.co.ke.

NSE trades in equities, preference shares, government and treasury bonds and other bonds. Trading hours in the NSE begin from 09:30 to 15:30. The NSE is sub Saharan Africa's fourth- largest stock exchange. Several brokers are licensed to trade in the NSE.

The NSE encourages input into Kenyan companies by banning foreign investments in local authorities and foreign controlled companies. However, the Government of Kenya has made several changes to attract foreign investments through the NSE. This was achieved in 1995, when the exchange was free for foreign investors in order to allow them a maximum shareholding limit of 20 percent for organizations and 2.5 percent for people. Currently, the maximum limit has increased to a maximum of 40% of shareholdings for institutions and 5% for individuals. A relatively small percentage of listed companies is however available to the foreigners (Ngugi, 2012). Especially when it comes to privatizing

state-owned enterprises, the NSE plays a main role in Kenyan economy. To boost the funds, a company engages in issuance of more shares and publishing of prospectus which give more details of activities and prospects of a company while also stating price per issue. This facilitates inflow of capital.

Some firms that issued bonus shares between 2014 and 2018 include CIC Insurance, Longhorn Kenya, Panafric, National Bank, Jubilee Insurance, Crown Paints, Williamson Tea Kenya, Kapchorua Tea Company, Diamond Trust Bank, Nairobi Securities Exchange, Jubilee Holdings Limited- Uganda Listing, Cooperative Bank of Kenya, Flame Tree, NIC Bank and Housing Finance Group of Kenya. Derived from NSE website: https://www.nse.co.ke.

1.2 Research Problem

The interconnection between the bonus issues and stock returns in public listed entities is still not clear-cut and is a main challenge to local and foreign investors. Bonus issues are often given to stockholders when a company does not have enough cash and the stockholders expect a routine income. The bonus issues involve no cash flow as they increase the entity's shareholdings but not the net assets of a company (Irving 2005). The main objective of a bonus issue is to boost the share capital of an entity hence the entity being perceived to be bigger than it actually is.

Studies show that prices of stock returns adjust to new information depending on market expectations. According to Chemarum (2010), the Kenyan market reacts favourably to

bonus issues, demonstrated by the rise in stock quantities traded around the moment of the announcement of the bonus issue. Theoretically, bonus shares signal management's perspective of the position of a company (Miller & Kevin, 1985).

Managers therefore use this to communicate prospective growth of the company. According to Beaver and Wright (1979), security prices are affected by information relayed in the market. Fama and French (1998) observe an interrelation between share prices and cash dividends. Mishra (2005) explains that the bonus issue date is usually anticipated therefore no unfamiliar information is anticipated and therefore it does not influence the stock prices returns substantially when announced. According to a research done by Friend and Puckett (1964), no close relationship exists between bonus issues and stock returns.

Several researchers conducted research on the Nairobi Securities Exchange's semi-strong form of EMH on dividends and stock splits. For instance, Aduda and Chemarum (2010) have evaluated the stock splits effects in the Nairobi Securities Exchange and detected a positive relationship. Simbovo (2006) and Musau (2007) have also carried out a research on stock splits. Olowe (1998) performed a research on how semi strong efficiency EMH affects dividends and the value of the firm. Gitobu (2000) conducted a survey to determine the impacts on share prices of macroeconomic factors such as inflation, exchange rates, interest rates and money supply. It is therefore evident that share issues affect stock prices returns in the market either positively or negatively.

There have been few research on the bonus issues effect on share prices in companies listed on the Nairobi Security Exchange and contradictory observations have been made on them. The studies performed in Kenya have been too few to give a result on this effect. This makes it difficult to generalize the reaction of the Kenyan market as a result of a bonus issue. There was no consensus on how the markets respond to bonus issues, therefore, the kind of market reaction on the Kenyan market caused by the bonus issue can not be generalized. The study therefore assists in filling this gap by asking, "What is the effect of bonus issues announcements on stock returns of companies listed in the Nairobi Security Exchange?"

1.3 Objective of the Study

The objective of the study is to determine the effect of bonus issue announcements on the stock returns of companies listed in the Nairobi Securities Exchange.

1.4 Value of the Study

The research is essential to various parties who seek to realize the interrelation between bonus issues and stock returns. It is important to the theory as it will either challenge or support the existing theories through the findings in this research.

It is also important to the scholars, as they will use this research as a point of reference to perform their research. The report will provide the stakeholders with knowledge so that they can make sound decisions. They will be impacted with knowledge that will prepare them for the stock markets. It will also enable stockbrokers to make sound choices on

whether they will purchase shares or sell shares when bonus announcements are made. The study will also enable fund managers to offer sound advice to the investors on the best investment opportunities available.

The study is important to the government, as it will enable them to formulate policies that will enhance investment opportunities in the countries hence promoting economic growth and stability. This will ascertain how the tax policies from the government will influence the entity's dividend decisions and thus be able to formulate a tax policy that encourages market activity.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter includes the literature review that will form the basis of our work. To identify literature gaps, this will be evaluated. The theoretical review will allow the investigator to discuss related theories while the empirical review will allow the investigator to review other researchers work on the effect of bonus issues announcements have on stock returns.

2.2 Theoretical Review

The research examined the Efficient Market Hypothesis, Behavioral Finance Theory, and Theory of Signaling Effects.

2.2.1 Efficient Market Hypothesis

An efficient capital market is whereby stock markets adapt promptly to arrival of new data. The current market prices therefore show all information about the stock. The EMH widely known as the random walk theory describes that present share prices completely represent all accessible data about a company's value, making the use of this data impossible to generate surplus profits. This implies that in anticipating future prices, it is not feasible to use previous or present share prices. The general EMH was split into three subgroups by Fama (1970), the weak, the semi-strong and the strong EMH.

The weak form EMH indicates that the market reflects all previous market data, including historical rates, trading volume data and other information generated by the market,

effectively. It illustrates that there should be no connection between historical information and data with future return prices. According to Mabhunu (2004), researchers use mainly use limited public information such as financial statements and other reports to review share prices. Bodie et al (2005) explains the chronological order of the past has no effect on future returns, as historical data is available to the public.

The semi-strong EMH describes that present prices completely represent the data accessible to the public (including announcing income, dividends, stock splits, new issues and other financial occurrences). It includes the weak form EMH, since all data is public in the weak form efficiency (Bodie et al, 2005). Since all information is publicly available, investors cannot make surplus returns from trading with such information. They can only do so using insider trading. Some event studies have been used to examine how share prices adjust to certain events such as dividend announcements, bonus issue announcements, stock splits, initial public offerings (IPOs) and other events (Mabhunu, 2004).

A strong form EMH explains that all share prices completely represent all public and private data (Cheo et al, 2012). It incorporates the weak efficiency and the semi-strong efficiency. Because market prices are unbiased, the accessibility of all public and private data leaves investors without motivation. The real share price is thought to be a true value of its inherent value in an efficient market. The market is said to consist of various reasonable investors who are regularly receiving and reading news and reacting promptly to this news (Fama, 1970).

Grossman and Stigliz (1995) explain that an efficient market cannot exist, as the investors require a return for gathering all information, which makes it impossible if all the information is available to the public. He explains that without an incentive to gather information, there would be no reason to trade leading to a decline in the market. Sustainable market equilibrium therefore requires sufficient arbitrage opportunities to reward investors for reacting quickly to the market information. Ball (2009) explains the limitations in the EMH as it focuses on the monetary exchange and the demand side of the market with limited explanations on the supply side.

Supply factors include how much information is available to the public and the source of the information. Another limitation of the EMH is that the information is considered objective. However, reality is that investors may be subjective and interpret the information in different ways. They may be influenced by their own beliefs or by the actions of others, this therefore leads to some unexpected decisions being made by the investors. The weaknesses in the EMH have resulted to increased beliefs of the behavioral finance, which contrasts the EMH by explaining that the investors are irrational and act on their sentiments and emotions to make investment decisions (Chen, 2007).

2.2.2 Behavioral Finance Theory

Behavioral finance takes into consideration how different psychological behaviors influence how people or organizations respond to data. It argues that individuals suffer from cognitive and emotional biases and therefore act in an unreasonable manner. Behavioral finance claims that securities prices and investment choices are affected by

other variables such as heuristic biases, frame reliance, mental and social influences, and market inefficiencies, not just intrinsic value (Barberis & Huang, 2003).

The behavioral aspects that affect investment decisions can be explained as; Heuristic Driven biases. These are mostly decisions made by investors based on rules of thumb, the main influences may include; anchoring: Refers to a tendency by investors to make investment decisions based on a certain reference point usually the anchor. Once people have formed an anchor it is difficult to change their perspective even when new information contrary to the anchor comes up. Representativeness: Refers to making decisions based on stereotypes. Investors' decisions are influenced by past data and recent happenings as opposed to current situation. Over confidence: When investors have experience, they are likely to make invest based on their experiences rather than considering current information (Solt & Statman, 1996). Aversion to ambiguity: Refers to the fact that people tend to avoid situations where they have little information about the possible outcomes. They tend to create choices that they clearly understand the results of the future. Innumeracy: People have a general problem with numbers. People tent to pay more attention to big numbers as opposed to considering the real value of the change.

Frame dependency; refers to the tendency to invest based on how the information is presented. According to Mlonzi (2011), as investors analyze their gains and losses they not only consider the nominal value but also consider emotional gains and losses. The emotional value we attach to a certain investment decision influences our investment decision as much as the investment information we will get about that investment. Frame dependence can be understood better by analyzing, Mental accounting: As opposed to

traditional finance theory, mental accounting states that investors lack the computational capability or will power to evaluate decisions in terms of the influence on their wealth hence individuals group their wealth in various mental accounts and attach various value to each account based on each accounts significance. Narrow framing: People will tent to analyze each investment separately as opposed to analyzing their portfolios. Also refers to tendency to make short-term decisions even when the investment was long term. Shadow of the past: People make investment decisions based on the recent past outcomes. If one gained from a previous investment they are more likely to take more risk in a similar investment in future but if they lost previously then they will shy away from that investment regardless of the information at hand currently. Other ways that past events affect current decisions are; Status quo bias, endowment effect and cognitive dissonance. Behavioral portfolios: States that as opposed to investors amassing their investment portfolios based on purposeful and rational asset diversification they amass their portfolios based on their goals e.g. safety, income and growth. The three goals are placed in separate mental accounts and decisions on each are made independently. Prosperity theory: People look at prospective gains or losses with regard to a specific reference point mostly the purchase price. They feel more pain from losses than the joy they will derive from an equal amount of gain.

Emotional and social influences can also create bias in decision making in the following ways; Emotional timeline: Investors experience different emotions as they invest. Depending on emotions that an investor is experiencing, investment decisions will differ. Hope induces investors to look at the upside and as a result, they will be more inclined to

investments, which assure maximum capital gains while Fear induces investors to look on the down side and as a result, they will be influenced more by security of the investment. Herd Instincts and Overreaction: Human beings have a great desire to belong to a group. People will tent to make decisions as a group as opposed to individual analysis (Barberis & Huang, 2003).

Market inefficiencies: Due to behavioral variables, there is a difference between the stock market price and the intrinsic value. This argument is based on two assumptions. Noise traders as described by Solt and Statman (1998) are not rational traders as their investment decisions are not fully supported by fundamentals but by beliefs and sentiments. Arbitrage operation by rational investors does not fully counter the irrationality caused by noise traders in the market as arbitragers are limited by associated risks of investment which are the risk of making losses from buying undervalued assets whose value drops further and the risk of resale price as arbitragers have to sale at a particular time. Behavioral Finance incorporates feelings, mental mistakes, and their impact on investors and decision-making processes, according to Barberis and Thaler (2003). It is defined by Linct (1998) as a human error research when interacting with data. Shefrin (1998) has also used Behavioral Finance to explain behaviors of investors. Several writers have used behavioral finance to define and clarify the anomalies associated with how the market responds to data. Therefore, it argues against other theories like the Efficient Market Hypothesis.

The behavioral finance theory has well described share price anomalies such as overreaction and stock price response due to investors' irrational habits (Barberis & Huang,

2003). It concentrates on establishing the extent to which different market forces such as trends in individual and social psychology and cultural development affect the expectations of investors and identify their level of trust and fear. This anomalies violate the EMH theory and contradict that share prices move reasonably during corporate announcements. Behaviorists hold that sometimes, the main explanations of stock markets are the engines of economic, social and animal psychology (Keynes, 1936).

2.2.3 Signaling Theory

The first signaling model suggested by Brennan and Copeland (1988). The theory identifies that economic data serves as a means of transmitting data from an entity's leadership to that entity's shareholders. Fama (1998) clarified that any information asymmetry between stockholders and executives could be reduced by announcing stock splits in a business.

According to Arthur, Busenitz, Hoskisson and Johnson (2009), signals tend to sensitize markets and tend to indirectly affect customer choices. In instances where there are corporate announcements, signals before the announcements sensitize the shareholders. Bonus shares therefore act as a signal that the market is doing well. (Mishra 2005) found in his studies that a substantial favorable abnormal return existed for a duration of 5 days before the announcement of bonus shares.

2.3 Determinants of Stock Returns

There are various factors that affect share prices and stock market returns and performance. Some of them include economy, fiscal and monetary policies, inflation, exchange rates and

investments. According to Garza- Garcia and Yu (2010), the rising of share index indicates economic growth while the decline of share index indicates an unstable economy.

2.3.1 Bonus Issue Announcements

Bonus issues are describes as the free additional shares to stockholders instead of a dividend, which is usually in proportion to the shares already held (Dhar & Chaocharia, 2008). An entity's stockholders are given bonus issues when the entity is short of cash and investors expect regular income. Since issuing bonus shares increases a company's share capital, it is perceived that the company is larger and thus attracts its investors. The stock price falls by increasing the quantity of shares, making the stock more accessible to its investors.

2.3.2 Monetary and Fiscal Policies

According to Reilly (1997), these countries' economies are influenced by currency and fiscal policies introduced by separate national government agencies. The resulting financial circumstances have a positive or negative impact on all sectors and businesses in the economy, which in turn has an impact on stock performance. According to Stiglitz (1993), fiscal policies such as tax cuts promote spending while increased taxes discouraged spending. Mendelson (1976) explains that a restrictive monetary policy could lead to a step up in interest rates leading to a rise in capital costs which would make it expensive for people to buy sustainable products and fund their homes through mortgages. This results in a rise in a security's share prices and stock returns.

2.3.3 Inflation

Inflation is the rate at which prices of goods go up. It causes the difference between nominal and real interest rates which ultimately alters the saving and spending patterns of individuals and companies. A high inflation rate causes a reduction in the purchasing power of investors leading to demand lower than supply, which causes an increase in the share prices. A low inflation rate causes an increase in purchasing power of investors hence leading to demand higher than supply, which causes a reduction in share prices. According to Reilly (1997) firms which experience abrupt changes in rates of inflation find it hard to plan, thereby undermining the growth of the firm.

2.3.4 Exchange Rates

Exchange rates are defined by Donnelly and Sheehy (1996) as the value of a currency for conversion purposes. Economies with weak exchange rates against the dollar will expand as buying commodities in that economy will be cheap and share prices will be seen to rise. This also suggests that the exported goods of a company become cheaper internationally when its currency is weakened, this helps to increase growth and profits for export based companies. Some studies show that there an interrelation between exchange rates and stock markets returns while others show no relationship.

2.3.5 Investments

Other investments other than share prices affect stock market performance (Chen, Goldstein & Jiang 2009). Securities markets are competing with other assets in the

economy for investments. These include, among others, government bonds, treasury bills, property, and foreign equity. Competition between stock markets and other investments is often high. Hence the share prices may rise or fall depending on how well the other investments are performing. Investor participation in the NSE also has an effect on stock market pricing and yields. Retrieved from NSE website: https://www.nse.co.ke

2.4 Empirical Review

There have been several research work done to determine the effects of bonus issues announcements on stock prices and returns.

2.4.1 International Evidence

Patel and Wolfson (1984) studies investigated the impacts of dividend and bonus announcements on the share price variance, mean and correlation. The outcome showed that announcements of dividends and bonuses carry less activity than profits do. Barnes and Shiguang (2011) used the event study methodology to analyze the effects of bonus issues on share prices in China. An investigative window was used of 20 days before year-end and 20 days after year-end, and constructing three portfolios, which consisted of 103 proposals categorized as small bonus portfolios, 37 proposals categorized as middle bonus portfolios and 56 proposals categorized as large bonus portfolios. The result showed that huge bonus ratio, which is measured as amount of bonus shares divided by the amount of actual shares appeal to positive returns, at the same time low bonus ratio shares appeal to low returns.

Mishra (2005) did a research on bonus issues market reaction in India, to determine the market efficiency. This was done by studying the period from 1998 to 2004 using 46 bonus issues samples using a 180-day event window. The findings collected showed that owing to leaked data, the stocks would begin showing abnormal returns 8 days to 9 days before the announcing date.

Lakinshok and Lev (1987) performed a study comprising of 1015 share split and 1257 bonus issues events from 1963 to 1982. They designed a control sample through pairing every company sampled with a company that had almost the same size of assets. They examined companies' performance, which issued bonus shares in terms of income and dividends growth. This research analyzed five years before and after the month the bonus issue was announced using the simple average and the median.

The outcome did not provide assistance for signaling the bonus issues because in the pre-announcement era there was a reasonable above-average income bonus issues performance. Travlos, Trigeorgis and Vafeas (2001) evidenced how considerable favorable abnormal returns occur during bonus issues announcements as anticipated with evidence from developed security markets. Darell and Frank (2010) studied insider trading with an interest to establish whether it influences stock prices around the acquisition date on the risk adjusted using a 20-day event window. The results showed no significant impact on the businesses' risk-adjusted yields announcing insider purchase around the dates of the announcement as defined by the event period.

Kumar and Halageri (2011) assessed India's market efficiency focusing on the bonus issue events from 1996 to 2001 using 15 days before and after event window the announcements. They studied fifty-four bonus issue announcements from companies that were listed. They determined that the Indian stock markets did not immediately integrate data on bonus announcements in the share prices completely. Ball and Brown (1968) developed an abnormal performance index methodology to examine consumer response to announcements of income by separating the samples into companies announcing profits above expectations and those announcing income below expectations. The results supported the semi- strong form EMH.

Hadi (2006) conducted extensive studies on the weak, semi-strong and strong market efficiency form. He performed this study on the Jordan market and found that the stock market responded with blended signals to release various data about certain companies' liquidity, solvency and profitability. The overall hypothesis is that the market is semi-strongly effective because, once published on the market, economic data is regarded as public data.

2.4.2 Local Evidence

Cheramum (2010) discovered that Kenyan markets are responding favorably to stock splits and bonus issues as stated by the rise in amounts of stocks traded around the announcements. This is compatible with the theory of signaling, which explains that executives are announcing splits and bonuses to pass data to shareholders and prospective investors. The research also showed an average abnormal 0.05 percent confidence level return as a consequence of announcing the bonus issues.

Koech (2013) noted that bonus issues and stock splits caused share prices to increase. He claimed that the impacts of share prices prevailed over an average period of 1 month using a period of 60 days and that stock split announcements on stocks persisted on an average of 1 month. Dickson and Muragu (1994) focused specifically on the Nairobi Securities Exchange to study market efficiency in emerging nations. Using correlation tests on person, coefficient correlation tests, binominal tests, Q stats and runs tests, they found that the Nairobi Securities Exchange was efficient in the weak form.

Mlambo and Biekpe (2007) reviewed weak form EMH in stock markets in Africa using the serial runs tests of correlation. Markets such as Namibia, Zimbabwe and Kenya have been found to be effective in a comparatively weak form. A research conducted by Gachuhi and Iraya (2017) on the impacts of bonus issues on NSE-listed companies disclosed that abnormal returns in previous years have been dramatically reduced from 2009 to 2010. Results from the study stated that a good predictor of stock returns is market return. Mutinda (2005) examined the effects of dividends announcements for the future of the corporations listed in the NSE. The outcome was that high-dividend securities gained a lot of value than low-dividend securities. This is because of bonus announcements as companies that announce bonus announcements are assumed to gain more profit in future hence gain value faster.

2.5 Conceptual Framework

Kombo and Tromp (2006) describe a conceptual framework as a tool aimed at helping the researcher gain knowledge about the research being studied. It sets a basis on how ideas

are linked, that is, the dependent variable under evaluation and the independent variable. It is derived from theory to help identify concepts included in the phenomena and to show relationships. The relationships among the variables in our study are shown below:

Independent Variable   **Dependent Variable**

Bonus Issue Announcements	→	Stock returns (increase/decrease)
		Speed at which price changes
		Sustainability of price
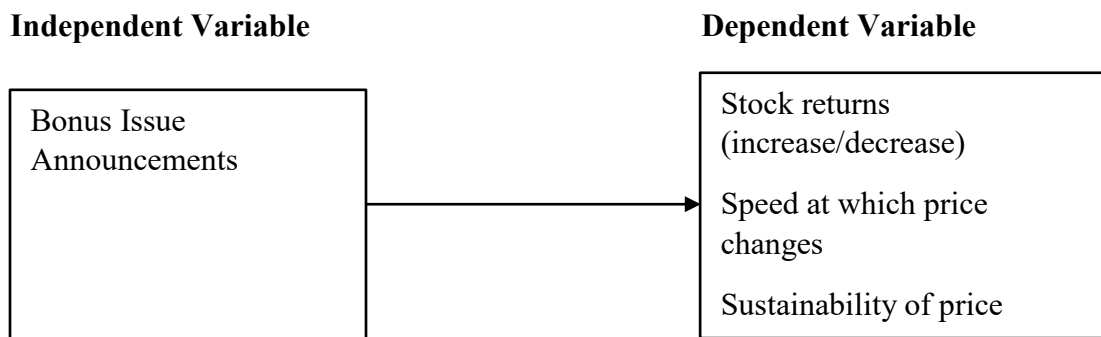
Figure 2.1: Conceptual Framework

The above diagram shows effect of bonus issue announcements on stock returns. The announcement made on bonus issues can either result to investors buying or selling their shares. According to the EMH, securities prices are anticipated to quickly adjust to reflect the information received. Therefore, the information results to a rise or a fall in share prices. According to Nyamosi (2011), if the market is semi-strong, there will be fast price adjustments and no returns after three days. However, changes are anticipated to be sluggish in a weak form EMH, and excess returns are expected to be important after three days of announcements.

2.6 Summary of Literature Review

From our literature review, it is apparent that many academics have been investigating the effect of bonus issues announcements on stock returns worldwide. However, many studies

have been done in developed economies and understudied in the Kenyan economy. The market reaction from bonus announcements as shown by other studies in other countries cannot be generalized in the Kenyan market due to various reasons such as differences in the economic environment and political environment. The research therefore aims to bring out a clear view on the effect of bonus issues announcements on stock returns in entities listed in the Nairobi Securities Exchange. The study period used of 5 years (2014 to 2018) is sufficient to perform our study and capture any gaps that have been overlooked by previous researches.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The methodology used in this research is described in this section. These are the techniques, instruments, and sources of information, population, and samples from which information were gathered to achieve the study's goal, which is the effects of bonus issues announcements on stock returns of companies listed on the Nairobi Securities Exchange. The study research uses the event study methodology to adopt a descriptive design. The research design, population and sampling design, techniques of information collection, techniques of data analysis and validity and reliability testing are also discussed in this chapter. It further explains how the data was processed and tools applied in the analysis and presentation of data.

3.2 Research Design

Research design is defined as the arrangement of data collection and analysis conditions for the purpose of combining relevance for research purposes (Kothari, 2008). Dul and Hak (2008) define the research design as an arrangement of information collection and evaluation circumstances to combine significance with the study purpose. Research design guides on information collection, measurement, and analysis techniques. The research design used was event study methodology (Dolley, 1993 & Fama, 1969) to determine how and whether share prices respond to bonus issue announcements.

An event is what the investigator prefers to study. Announcements of bonus shares are the events in this research (Barnes & Shiguang, 2002). The event window is the announcement period of the occurring event. The event window is combined with the announcement day and the days before and after the announcement day. The estimation time for the variables is an estimation window. Abnormal returns, which are given by return during the event window minus normal returns, usually show whether the market has anticipated data about the event. The event date can be expressed as t0. The event window was 15 days before and after announcement. This can be expressed as -15 to +15. The estimation period is the period before the occurrence of the event. The method therefore clearly shows the impact of bonus issues before and after the announcement.

3.3 Population

Target population is the population that a researcher would like to generalize the research outcomes (Mugenda & Mugenda, 2003). According to Kothari (2004), a target population is the total number of respondents in the researcher's total environment of interest.

This research targets all NSE-listed Kenyan-based businesses and those that undertook bonus issues between 2014 and 2018. The companies are classified into ten categories known as sectors. The sectors are; agricultural sector, automobiles and accessory sectors, banking sector, commercial and services sector, construction and allied sector, energy and petroleum sector, insurance sector, investment sector, manufacturing sector, telecommunication sector and real estate sector. In total there were 64 companies listed as at December 2018 (NSE Website).

3.4 Sampling Design

Sampling is the method of selecting an amount of individuals for a research to represent the large group they were chosen from. Mugenda and Mugenda (2013) explain that a sample size of 10 to 30 percent is a good representation of the target population when the study population is less than 10,000 and thus 30 percent is suitable for analysis. The total number of bonus issues from 2014 to 2018 were 16. Since the study population is small, the study was a census where all the members of the population were considered. Census is important because all the population members are included and the conclusions drawn can be generalized to the population without undue bias. The period 2014 to 2018 was preferred as it would give the most current trend of the investors' reactions.

3.5 Data Collection

The research used secondary data for analysis from the annual published accounts of NSE-listed companies and whose five-year (2014-2018) information is publicly available in form of financial statements and proxies. Data captured was announcement date, market index, daily closing share prices and trade volumes over a 15-day preceding event window and 15-day post announcement of bonus issue. The share prices for the relevant period under review were obtained from the monthly NSE bulletins focusing on the date of issue of the bonus as the date of the event.

3.6 Data Analysis

Brown and Warner (1980) clarify that the processing of information includes converting responses into a form that can be manipulated for statistical production. It involves editing,

coding, entering information and tracking the entire processing of information. The model used in this research calculated the abnormal daily returns ahead of the event window over an estimated period of one calendar year.

The research used The Event Study Standard Market Model to accomplish its goal. The assessment involved examining the abnormal returns for 15 days prior and post the announcement event for each of the sampled firms. The abnormal returns of the businesses and the average abnormal returns are calculated at each point in time.

3.6.1 The Analytical Model

(Fama 1970) specifies the model to be used to estimate the normal rate of return on a stock as:

Step I: Calculation of Stock Price's expected daily return

The sampled shares' anticipated daily returns (D_{it}) are computed as:

$D_{it} = (P_t - P_t\text{-}1) + D0_t / P_t\text{-}1$ ……………………………………. **Equation 3.1:**

Where:

D_{it} = Daily returns at time t,

P_t = Closing Share Price at time t,

$P_t\text{-}1$ = Closing Share Price one day before time t.

$D0_t$ = Dividends at time t

Step II: Normal Return Calculation:

The normal return is computed using the standard market model as shown below:

$R_{it} = \alpha_i + \beta_i Rm_t + \mu_{it}$ ……………………………….…. **Equation 3.2:**

Where:

R_{it} = rate of return on security i in period t

Rm_t = rate of return on the market index in period t

α_i = constant in regression equation

β_i = slope of regression equation (beta value of security)

μ_{it} = disturbance term

Step III: Abnormal Return Calculation:

The abnormal returns are determined for all stocks using the method of constant mean return. Abnormal returns are the difference for each share in the event window between the actual returns and the estimated normal returns. These are the unexpected components of the returns, which can be defined as error terms in the econometrics model. Error terms represent variation in the dependent variable, which are unknown and not caused in the dependent variable. Abnormal returns are computed as shown below:

$AR_{it} = R_{it} - NR_{it}$……………………………..…… **Equation 3.3:**

Where:

AR_{it} = Abnormal Return of stock i in time t,

R_{it} = Actual Return of stock i in time t,

NR_{it} = Normal Return of stock i in time t.

Step IV: Average Abnormal Return t, AAR$_t$ estimation

This is computed to determine the effect of the event overall sample.

The average abnormal returns (AARs) are estimated as shown during the event period (-15 to + 15):

$AAR_t = 1/N \sum_{t=k}^{t} ARit$ ....**Equation 3.4:**

Where:

AAR_t=Average abnormal return on stock at time t

AR_{it}= Abnormal Return of stock *i* in time *t*,

N=Number of securities in the sample.

Step V: Cumulative Abnormal Return (CAAR) Computation

The cumulative average abnormal returns (CAAR) were then calculated for the event period. This is achieved first by calculating for each variable the cumulative abnormal yield (CAR) and then finding the average CARs for each day.

The formula for CAR and CAAR for each variable is as shown below:

$CAR_t = AR_i, t1-\ldots\ldots\ldots\ldots + AR_i, t2 = \Sigma AR_{it}$ ……….. **Equation 3.5:**

$CAAR_t = 1/N \sum_{t-k}^{t+k} AARit$ ……………………………..... **Equation 3.6:**

$Nt=1$ $t=t1$ The market model that will be applied is; Y=a+b1x1+error term.

Assuming that values, indices and their respective returns are normally distributed during the event duration, the t-statistical method was used to assess the value at a confidence interval of 95 percent, using the average cumulative abnormal return and standard deviation to establish the appropriate empirical t-statistics. The test of significance of abnormal return will be done using the hypothesis:

H_O: $AR_{it} = 0$

H_1: $AR_{it} \neq 0$

CHAPTER FOUR

DATA ANALYIS, FINDINGS AND DISCUSSIONS

4.1 Introduction

Presented in this chapter are the results of our analysis into the effect of bonus issue announcements on the stock returns of listed companies in the Nairobi Securities Exchange. Data collected from the listed firms that had announced bonus issue between 2014 and 2018 was used in our analysis. The study was an event analysis of how bonus issue announcement influences stock returns.

There were sixteen (16) bonus issue announcements between 2014 and 2018 spread among fourteen (14) firms. The stock returns reactions of the fourteen (14) companies to bonus issue announcements was analyzed 15 pre and post announcement. Analysis was done using SPSS (Version 24) and Microsoft's Excel (2016). To predict the expected returns of stocks, the researcher used Regression analysis was conducted. The statistical significance of the effect of bonus issue announcements was checked using T-test.

4.2 Response Rate

The study analyzed the stock returns of all the 14 firms that had made bonus issue announcements from 2014 to 2018. The study was a census and therefore be suitable for determining the effect of bonus issue announcements on the stock returns of companies listed in the Nairobi Securities Exchange.

4.3 Reaction of Stock Returns to Bonus Issue Announcements

The section discusses the stock returns reactions to bonus issue announcement 15 days pre and post announcement.

4.3.1 CIC Insurance

The reaction of CIC Insurance stock returns to bonus issue announcement on 12th March 2014 is as shown in figure 4.1.

Figure 4.1: CIC Insurance Stock Returns
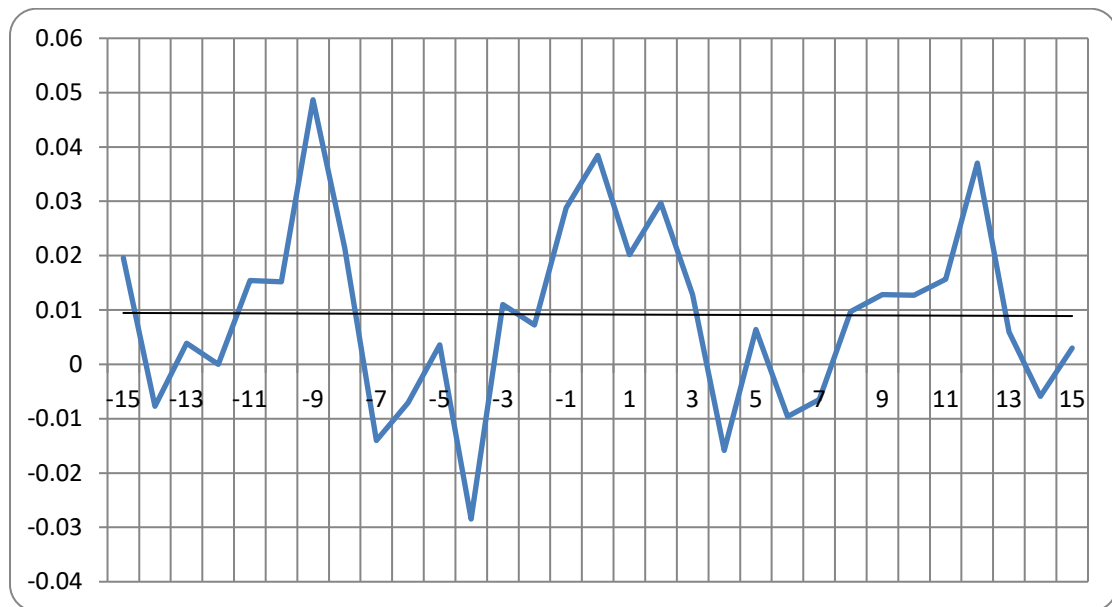
Source: Research Data (2019)

CIC Insurance stocks were not very sensitive to bonus issue announcement. The highest stock return of 0.0487 was recorded 9 days pre bonus issue announcement while the least stock return of -0.0285 was recorded 4 days before the event. On average, CIC Insurance

stocks reacted positively as evidenced by an increase from an average of 0.00784 before the announcement to an average of 0.00855 after the announcement. The CAAR for CIC insurance for the 30 day event window was 0.20428.

4.3.2 Longhorn Kenya Stock Returns

The reaction of Longhorn Kenya stock returns to bonus issue announcement on 26th September 2014 is as shown in figure 4.2.

Figure 4.2: Longhorn Kenya Stock Returns
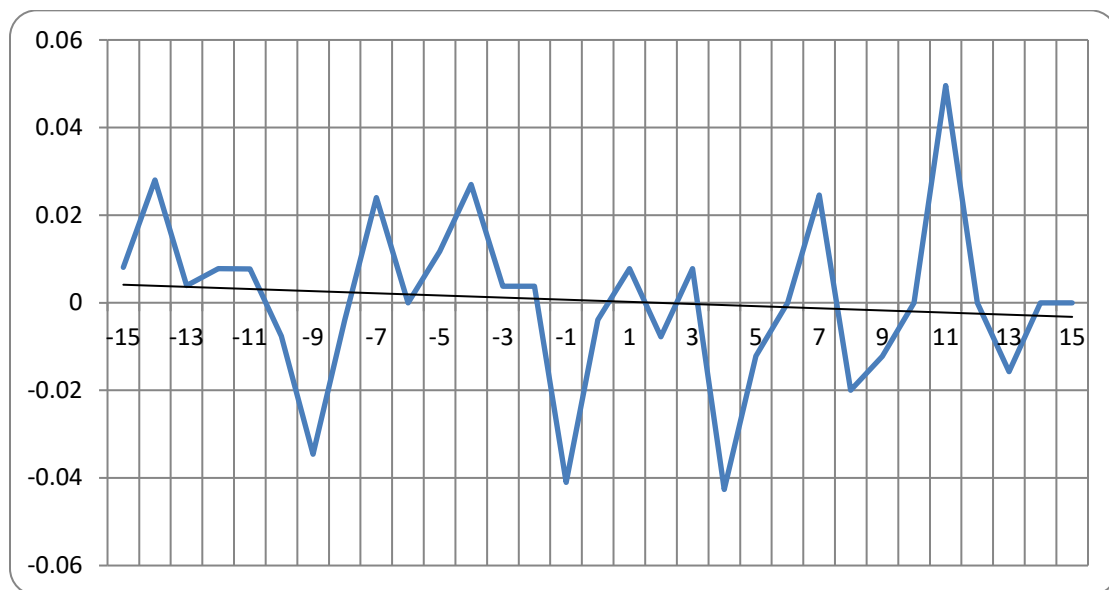
Source: Research Data (2019)

Longhorn Kenya stocks returns reacted negatively to bonus issue announcement as indicated by the trendline. The stock returns decreased from an average return of 0.00256 before bonus issue announcement to an average of -0.00138 after the bonus issue announcement. The immediate reaction after a day after the announcement was positive as

evidenced by a stock return of 0.00781. However, the stock returns were not very sensitive as indicated by the small return value. The CAAR for Longhorn Kenya for the 30 day event window was 0.06166.

4.3.3 Panafric Stock Returns

The reaction of Panafric stock returns following the bonus issue announcement on 27th February 2015 is as shown in figure 4.3.

Figure 4.3: Panafric Stock Returns
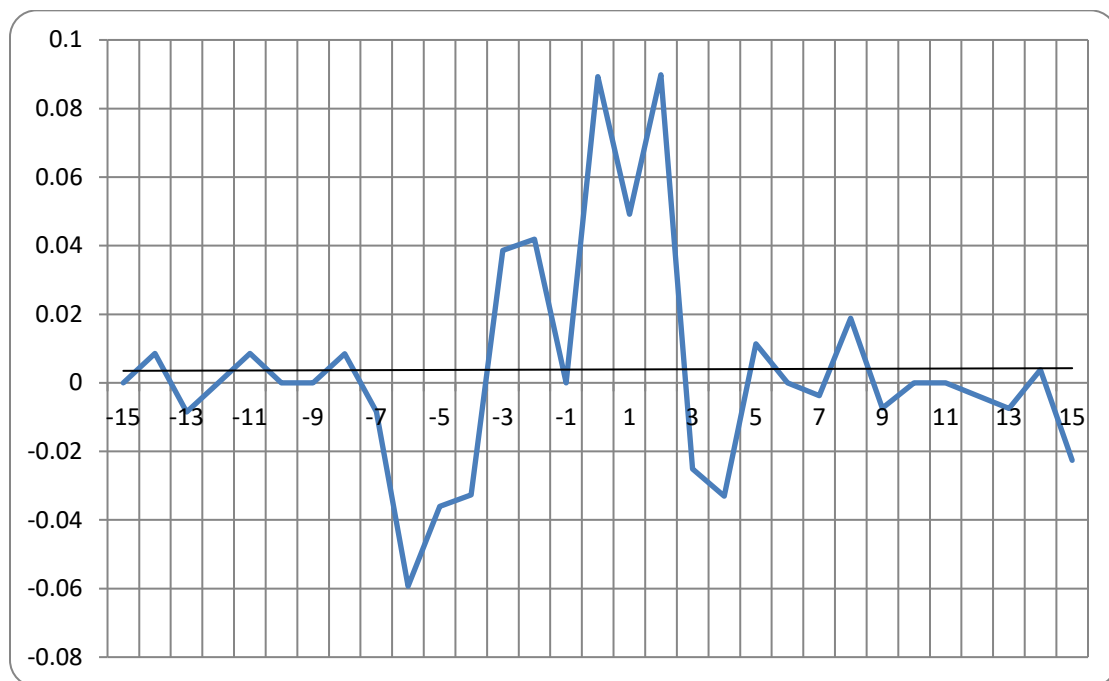
Source: Research Data (2019)

Panafric stock returns reacted sharply to the bonus issue announcement as evidenced by an increase from stock return of 0 a day before the announcement to a positive value of 0.0893 after the announcement. Overall, Panafric stock reacted positively to the bonus issue

announcement as indicated by an increase in stock returns from an average of -0.00259 15 days before bonus issue announcement to an average of 0.00466 15 days after the bonus issue announcement. The CAAR for Panafric for the 30 day event window was 0.13415.

4.3.4 National Bank of Kenya Stock Returns

National Bank of Kenya announced two bonus issues between 2014 and 2018. The reaction of the banks stocks to the two bonus issues of 3rd March 2015 and 27th April 2017 is as shown in figures 4.4(a) and 4.4(b).

Figure 4.4(a): National Bank of Kenya Stock Returns
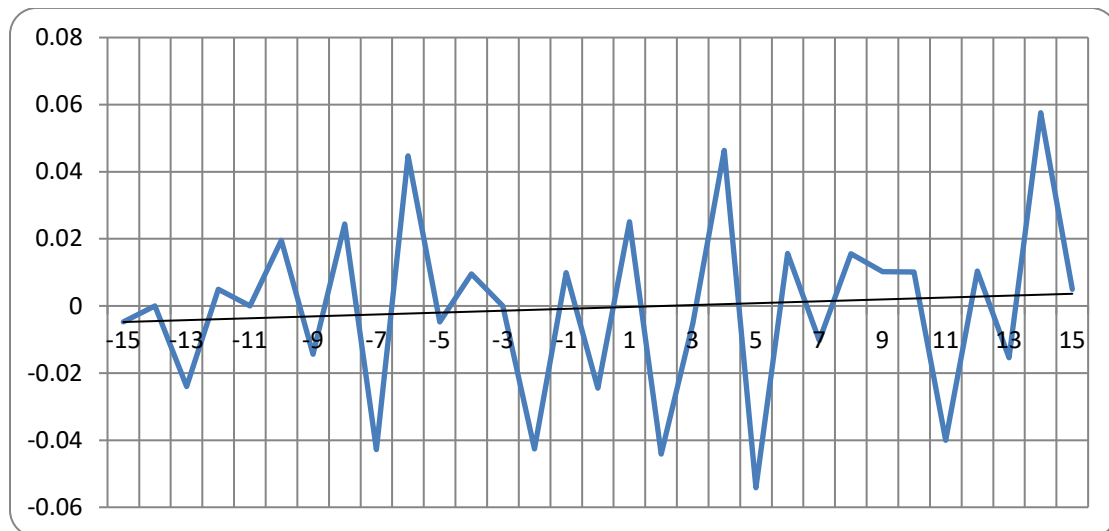
Source: Research Data (2019)

National Bank of Kenya stocks recorded erratically to the first bonus issues. Overall, the reaction was positive as the stock returns increased from an average -0.00136 15 days before the announcement to an average of 0.00179 15 days after the announcement. The CAAR for National Bank of Kenya for the 30 day event window was -0.06096.

**Figure 4.4(b): National Bank of Kenya Stock Returns**
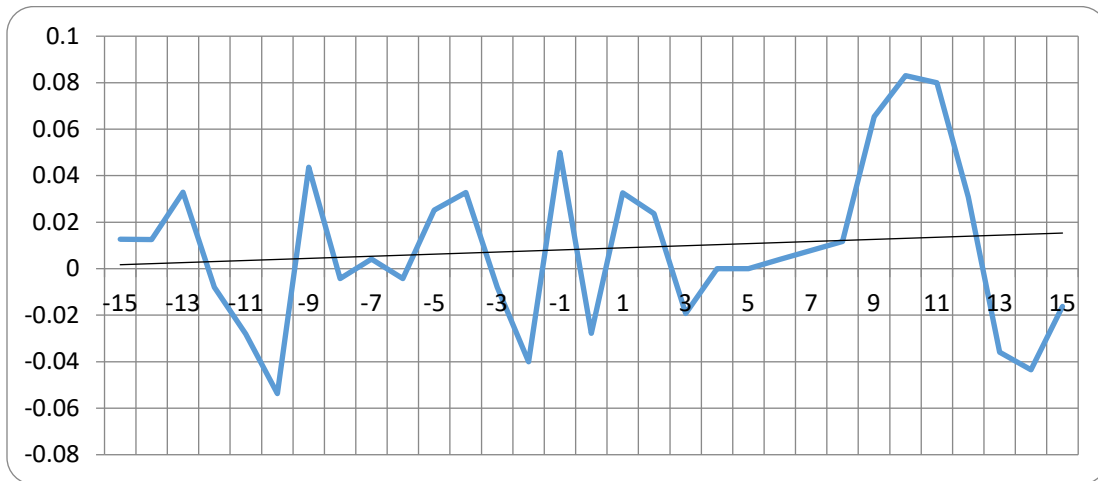
Source: Research Data (2019)

The reaction of National Bank of Kenya stocks to the second bonus issues was also positive. The average stock returns increased from 0.00452 15 days before the bonus issues announcement to 0.01494 15 days after the bonus issues announcement. The CAAR for National Bank of Kenya for the 30 day event window was 0.31295.

4.3.5 Jubilee Insurance Stock Returns

Jubilee Insurance also announced two bonus issues between 2014 and 2018. The reaction of the company's stocks to the two bonus issues of 25th March 2015 and 27th March 2017 is as shown in figures 4.5(a) and 4.5(b).

Figure 4.5(a): Jubilee Insurance Stock Returns
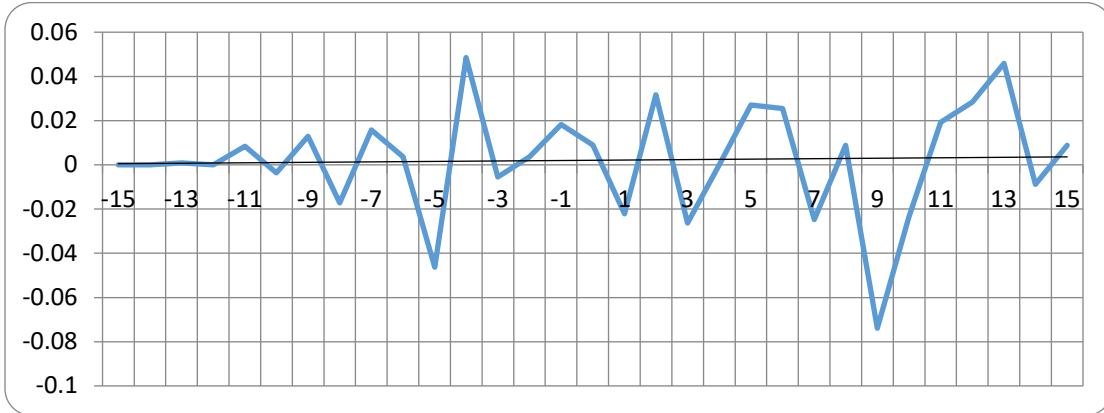
Source: Research Data (2019)

Jubilee Insurance stock returns were sensitive to the stock split. The stocks reacted negatively to the to the announcement of two bonus issues. After the first announcement, Jubilee Insurance stock returns decreased from an average of 0.00261 before the announcement to an average of 0.00105 after the announcement. After the second bonus issues announcement, stock returns decreased from an average of -0.00039 before the announcement to an average of -0.00070 after the announcement. The CAAR for Jubilee Insurance for the 30 day event window was -0.03903 in 2017 and 0.01101 in 2015.

Figure 4.5(b): Jubilee Insurance Stock Returns
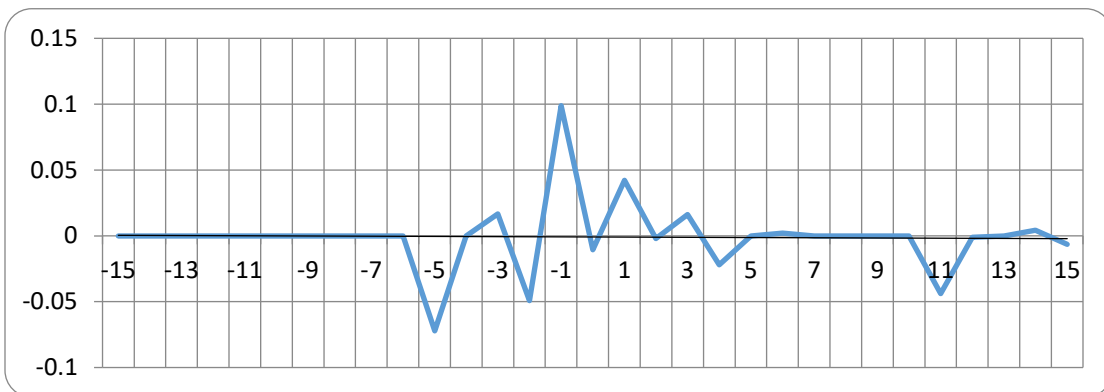
Source: Research Data (2019)

4.3.6 Crown Paints Ltd Stock Returns

The reaction of Crown Paints Ltd stock returns to the bonus issues announcement of 4th

May 2015 are as shown in figure 4.6.

Figure 4.6: Crown Paints Ltd Stock Returns
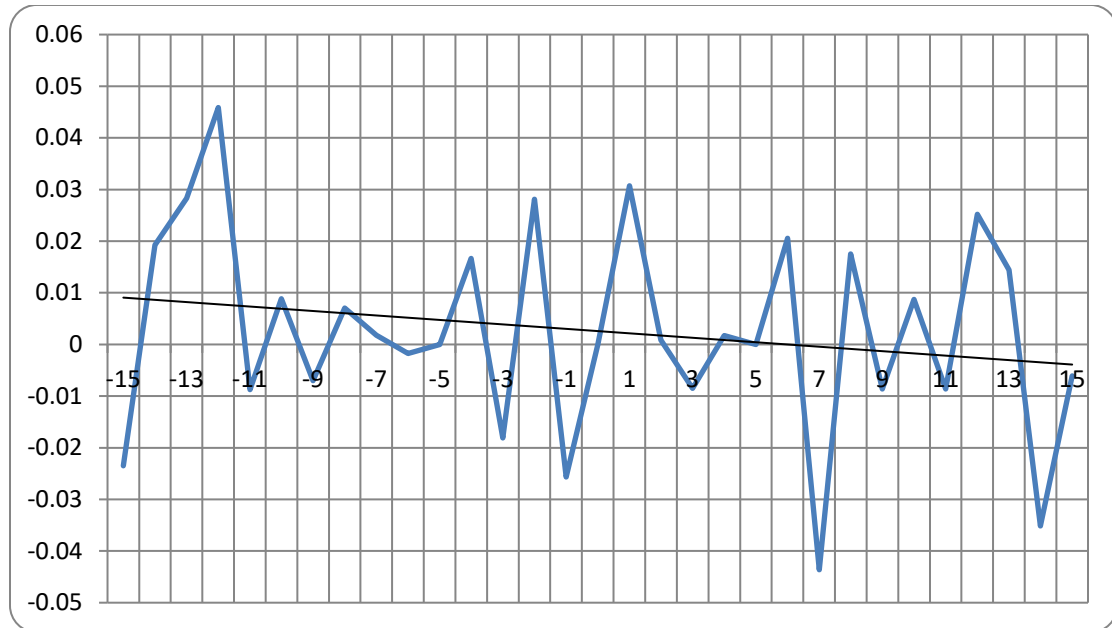
Source: Research Data (2019)

The trendline indicates that Crown Paints Ltd stocks reacted adversely to the bonus issues announcement. This is also evidenced by decrease in average stock returns from 0.00474 before the bonus issues announcement to 0.00061 after the announcement. The figure also indicates that Crown Paints Ltd stocks were very sensitive to the bonus issues announcement. The CAAR for Crown Paints Ltd for the 30 day event window was -0.00804.

4.3.7 Williamson Tea Kenya Stock Returns

The reaction of Williamson Tea Kenya stock returns to the bonus issues announcement of 15th June 2015 are as shown in figure 4.7.

Figure 4.7: Williamson Tea Kenya Stock Returns
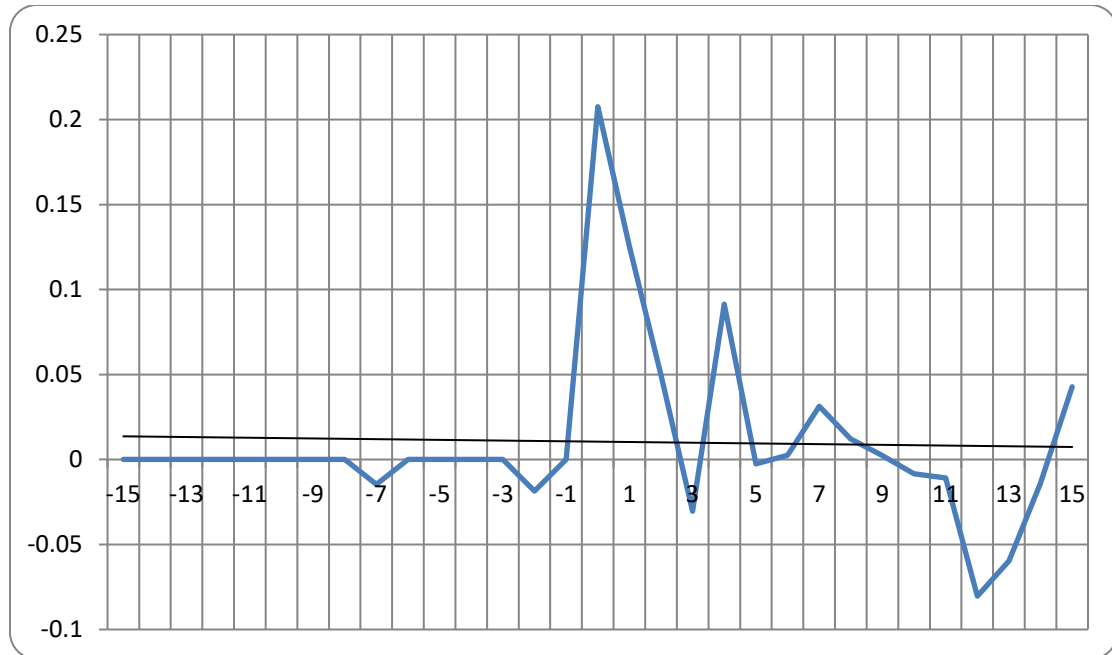
Source: Research Data (2019)

Williamson Tea Kenya stocks reacted sharply to bonus issues announcement. This shows that the Williamson Tea Kenya stocks were very sensitive to bonus issues announcement. On announcement day, the stock returns shot from zero (0) to 0.2075 indicating an immediate positive reaction. The overall reaction of Williamson Tea Kenya stocks was also positive. The average returns increased from -0.00221 before the bonus issues announcement to 0.01009 after the bonus issues announcement. The CAAR for Williamson Tea Kenya for the 30 day event window was 0.30816.

4.3.8 Kapchorua Tea Company Stock Returns

The reaction of Kapchorua Tea Company stock to the bonus issues announcement of 15th June 2015 are as shown in figure 4.8.

Figure 4.8: Kapchorua Tea Company Stock Returns
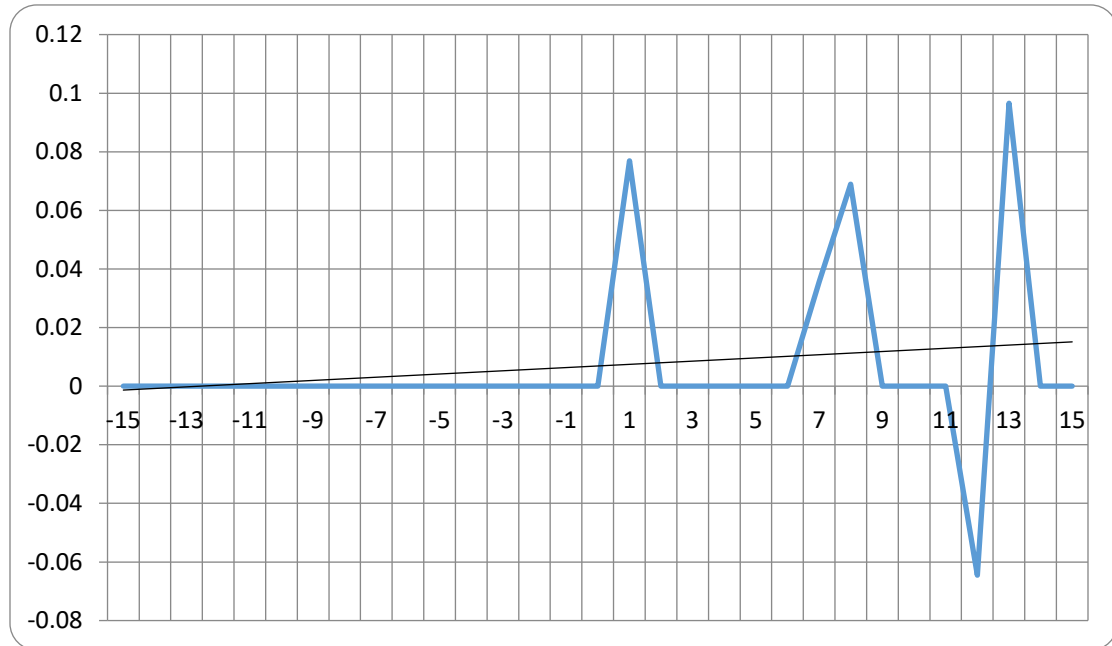
Source: Research Data (2019)

The trendline indicates an increase in stock returns of over the study period. The figure also indicates the Kapchorua Tea Company stocks were very sensitive to the announcement as evidenced by the immediate increase from zero (0) value on the day of announcement to 0.0769 after the announcement day. On average, Kapchorua Tea Company stock return rose from an average of 0.00 before the announcement to 0.01424 after the announcement. The CAAR for Kapchorua Tea Company for the 30 day event window was 0.20898.

4.3.9 Diamond Trust Bank Stock Returns

The reaction of Diamond Trust Bank stock returns to the bonus issue announcement of 10th March 2016 are as shown in figure 4.9.

Figure 4.9: Diamond Trust Bank Stock Returns
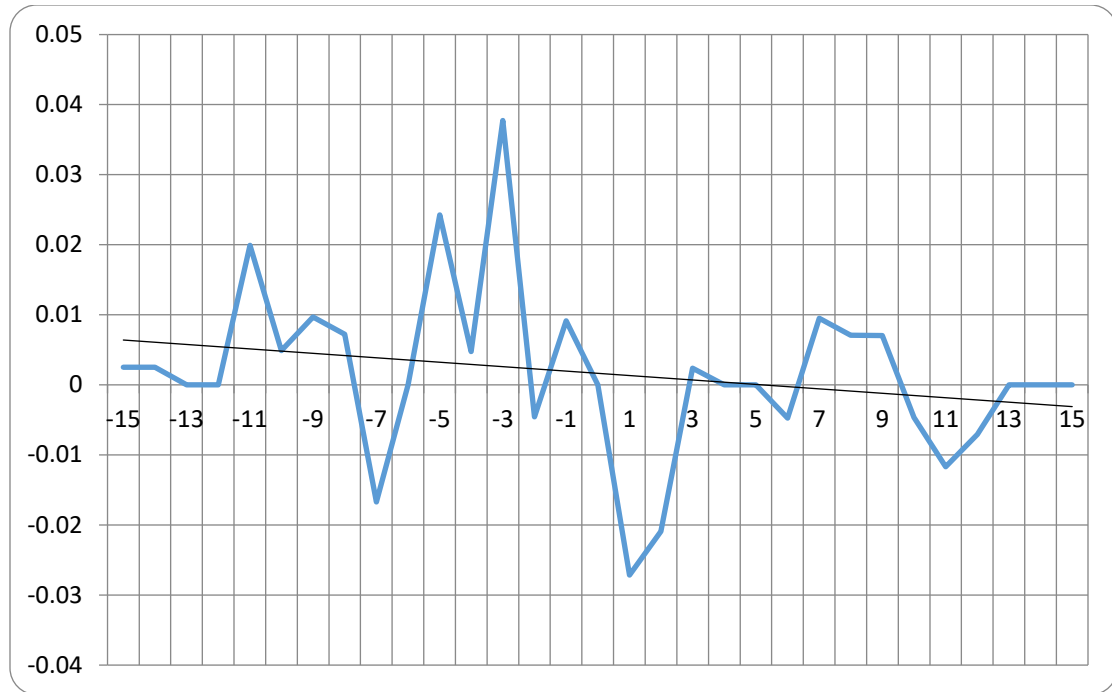
Source: Research Data (2019)

Diamond Trust Bank stocks reacted negatively to bonus issue announcement as indicated by the trendline. This is also evidenced by the decrease in average returns from 0.00675 before the bonus issue announcement to -0.00335 after the bonus issue announcement. The Diamond Trust Bank stocks were also found to be sensitive to the bonus issue announcement as evidenced by the immediate decrease in stock returns a day after the announcement. The CAAR for Diamond Trust Bank for the 30 day event window was 0.05995.

4.3.10 Nairobi Securities Exchange Stock Returns

The reaction of Nairobi Securities Exchange stock returns to bonus issue announcement on 24th March 2016 are as shown in figure 4.10.

Figure 4.10: Nairobi Securities Exchange Stock Returns
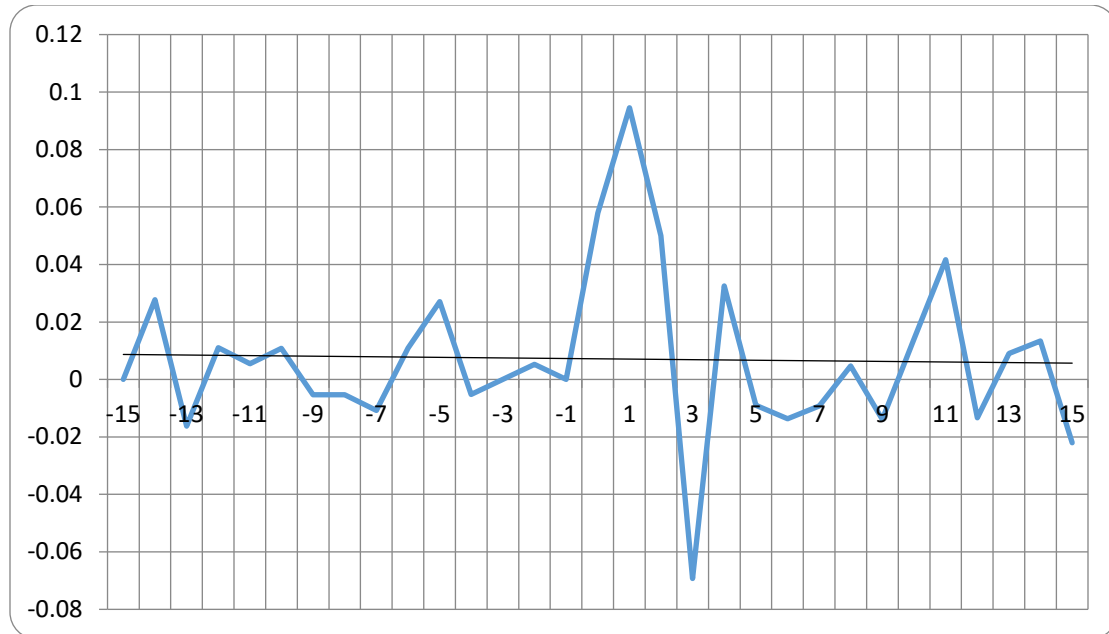
Source: Research Findings (2019)

Nairobi Securities Exchange stocks were very sensitive to the bonus issue announcement. A day before the announcement, the stock return value was zero. However, this shot up to 0.0579 on the very day of announcement and kept rising to 0.0945 a day after the announcement. Overall, Nairobi Securities Exchange stock reacted positively to bonus issue announcement as evidenced by an increase in average stock returns from 0.00368 15 days pre announcement to 0.00730 15 days post announcement. The CAAR for Nairobi Securities Exchange for the 30 day event window was 0.27127.

4.3.11 Cooperative Bank Stock Returns

The behavior of Cooperative Bank stock returns following bonus issue announcement on 17th March 2017 are as shown in figure 4.11.

Figure 4.11: Cooperative Bank Stock Returns
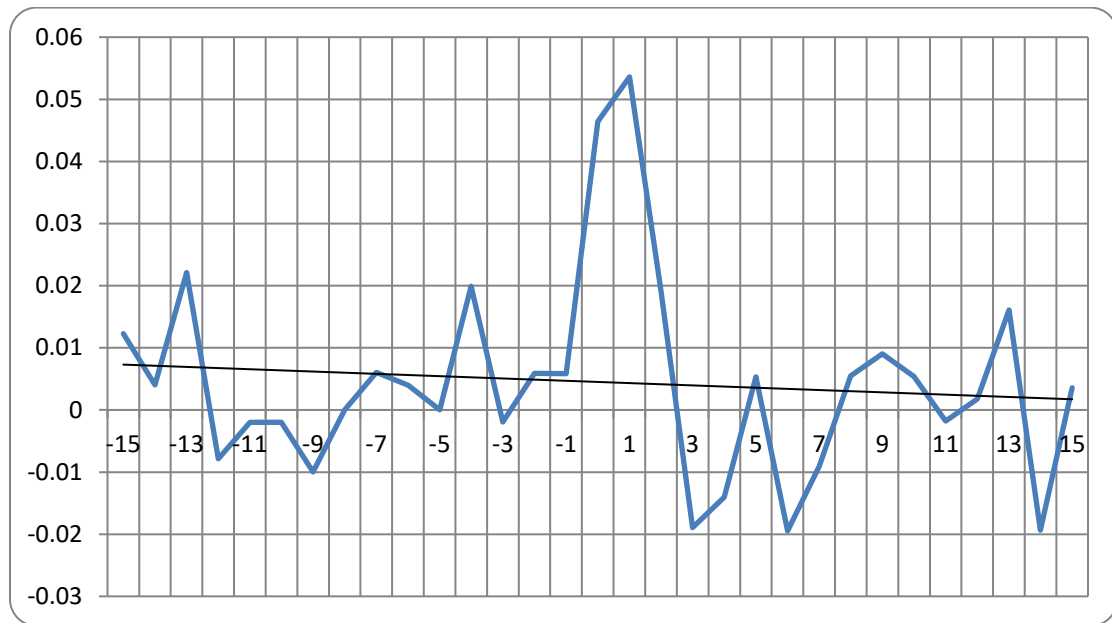
Source: Research Data (2019)

Cooperative Bank stocks had a very sharp and immediate reaction to the announcement of the bonus issue. The stock returns rose sharply from 0.00584 pre- announcement day to 0.0536 after the announcement day. On the announcement day, the stock return stood at 0.0464. Overall, the reaction of Cooperative Bank to bonus issue announcement was negative as evidenced by the decrease from an average of 0.00376 before the announcement to an average of 0.00247 after announcement. The CAAR for Cooperative Bank for the 30 day event window was 0.15918.

4.3.12 Flame Tree Group Stock Returns

The reaction of Flame Tree Group stock returns to the bonus issue announcement of 28th April 2017 is as shown in figure 4.12.

Figure 4.12: Flame Tree Group Stock Returns
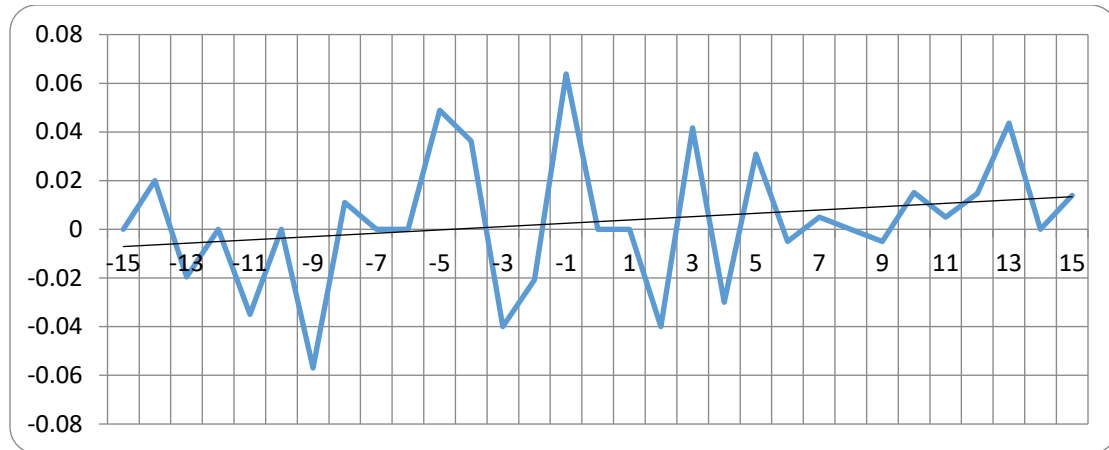
Source: Research Data (2019)

Flame Tree Group reacted positively to the bonus issue announcement as indicated by the trendline. This depiction is also supported by the increase in average stock returns from 0.0005 before the announcement to an average of 0.006 after the bonus issue announcement. The immediate reaction to the announcement was erratic. The CAAR for Flame Tree Group for the 30 day event window was 0.04325.

4.3.13 NIC Bank Stock Returns

The reaction of NIC Bank stock to bonus issue announcement of 22nd March 2018 is as shown in figure 4.13.

Figure 4.13: NIC Bank Stock Returns
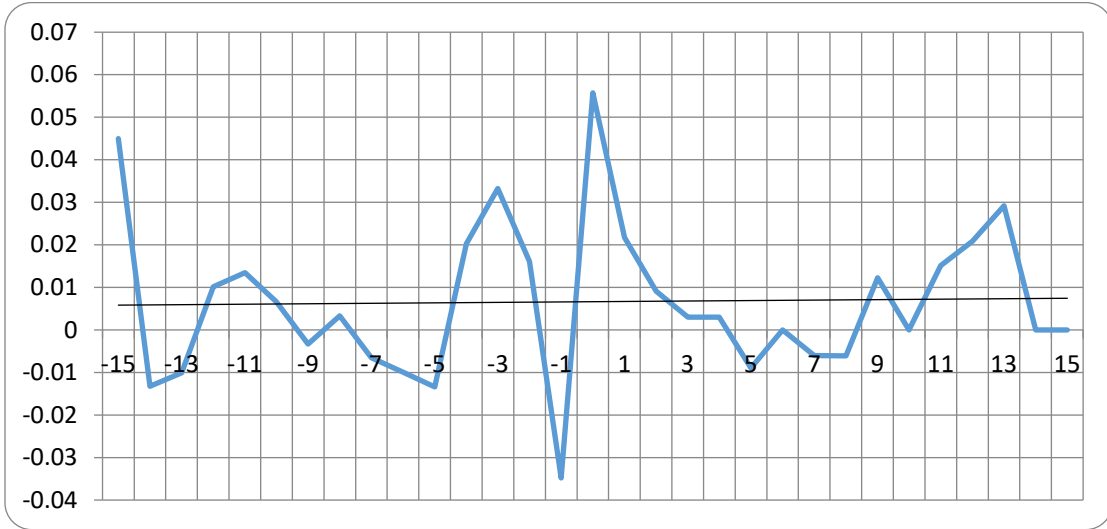
Source: Research Data (2019)

NIC Bank reacted immediately and sharply to the bonus issue announcement and the reaction was erratic as shown by the figure. Overall, NIC Bank stocks reacted positively to the bonus issue announcement. This assertion is supported by the increase in the stock return from an average of 0.00379 before the bonus issue announcement to an average of 0.00621 after the bonus issue announcement. The CAAR for NIC Bank for the 30 day event window was 0.18280.

4.3.14 Housing Finance Group Stock Returns

The reaction of Housing Finance Group stock returns to the bonus issue announcement of 29th March 2018 is as shown in figure 4.14.

Figure 4.14: Housing Finance Group Stock Returns
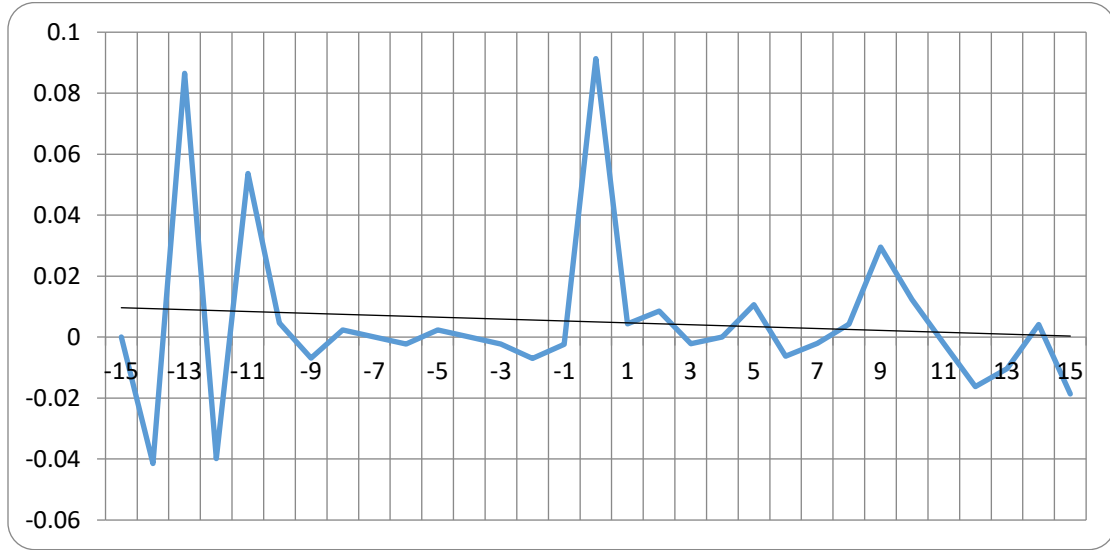
Source: Research Data (2019)

The trendline indicates that the Housing Finance Group Limited reacted negatively to the bonus issue announcement. This observation is empirically supported by the decrease in stock returns from an average of 0.00316 before the bonus issue announcement to an average of 0.00106 after the bonus issue announcement. The Housing Finance Group Limited stocks were also very sensitive to the announcement as indicated by the immediate and sharp reaction on the day of the announcement. The CAAR for Housing Finance Group Limited for the 30 day event window was 0.19077.

4.4 Abnormality of Stock Returns following the Stock Split

This section outlines the results of the abnormality test of the stock returns for the NSE listed firms that had made bonus issue announcements between 2014 and 2018. The summary of the abnormal returns and the significance level is as tabulated in Table 4.1.

Table 4.1: Abnormality of Stock Returns on Bonus Issue Announcements

Company	Average Abnormal Returns	STDEV	Skewness	Kurtosis	T-test
CIC insurance	0.0066	0.0170	0.1580	0.1901	6.2931
Longhorn Kenya	0.0020	0.0211	-0.1264	1.1197	2.4281
Panafric	0.0043	0.0319	1.1157	2.6207	2.0735
National Bank	-0.0020	0.0271	-0.0725	-0.1090	-1.7668
Jubilee Insurance	0.0015	0.0256	-0.9213	1.6940	0.8572
Crown Paints	-0.0003	0.0197	-0.1691	0.0316	1.1724
Williamson Tea Kenya	0.0099	0.0517	2.2178	7.0067	9.1102
Kapchorua Tea Co.	0.0067	0.0278	1.8132	5.0199	3.3469
Diamond Trust Bank	0.0019	0.0125	0.4706	2.2365	2.1084
Nairobi Securities Exchange	0.0088	0.0292	0.6644	2.9347	10.3212
Jubilee Holdings Ltd	-0.0013	0.0273	0.8983	6.7880	-0.5341
Cooperative Bank (K)	0.0051	0.0170	0.8108	1.7984	5.2707
National Bank of Kenya	0.0101	0.0338	0.4059	-0.1490	2.6899
Flame Tree Group	0.0014	0.0276	0.0158	0.0881	-0.8020
NIC Bank	0.0059	0.0182	0.4721	1.7851	5.0921
Housing Finance Group	0.0062	0.0275	1.2997	3.1705	5.3181

Source: Research Data (2019)

The study found out that most firms recorded positive abnormal returns following the bonus issue announcements over the event window of 31 days   . The abnormal returns recorded were less than 1 or -1 implying none of the investors gained or lost greatly. Only National Bank, Crown Paints and Jubilee Holdings Ltd recorded negative average abnormal returns. None of the abnormalities was statistically significant as shown by the t-test values greater than 0.05. Most of the firms recorded skewness and kurtosis values outside the range of ±1.96 further confirming presence of abnormality

The trend of the abnormality following the bonus issue announcements is as shown in Figure 4.15.

Figure 4.15: Average Abnormal Returns
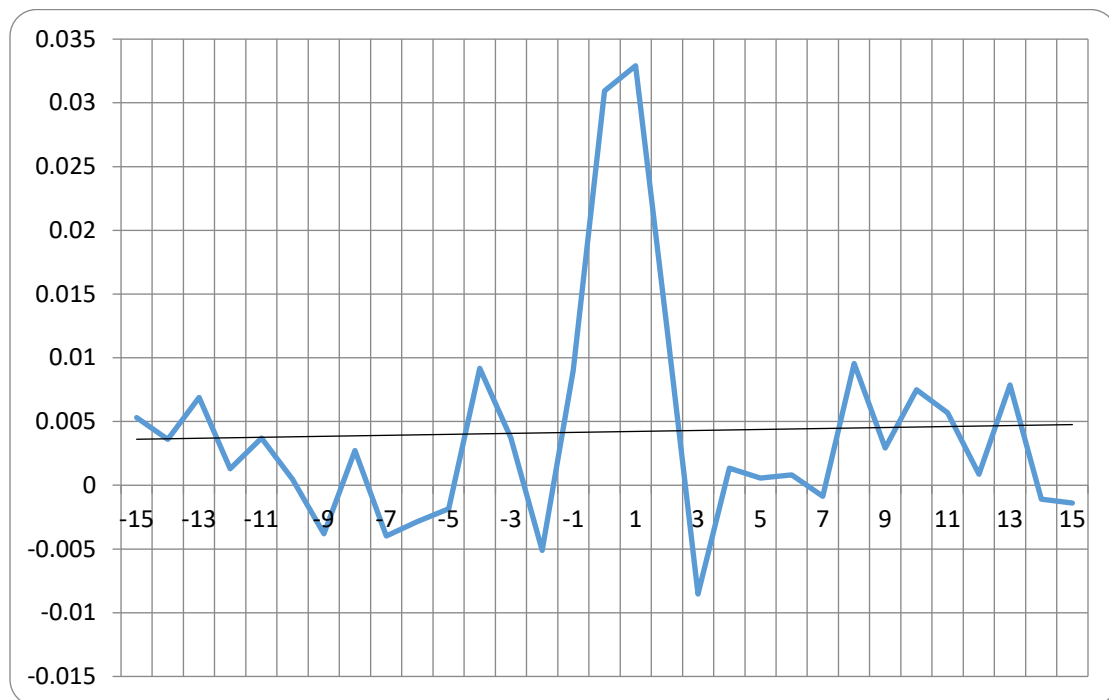
Source: Research Data (2019)

Result shows that the stocks reacted quickly to bonus issue announcements indicating that the stock market is efficient. The highest abnormality was highest on after the announcement days as indicated by average value of 0.0309 and 0.0329 respectively.

4.5 The Cumulative Abnormal Returns

The results of the study on Cumulative Average Abnormal Returns of the listed firm following the stock splits are as illustrated in Figure 4.16.

Figure 4.16: Cumulative Abnormal Returns (CAR)
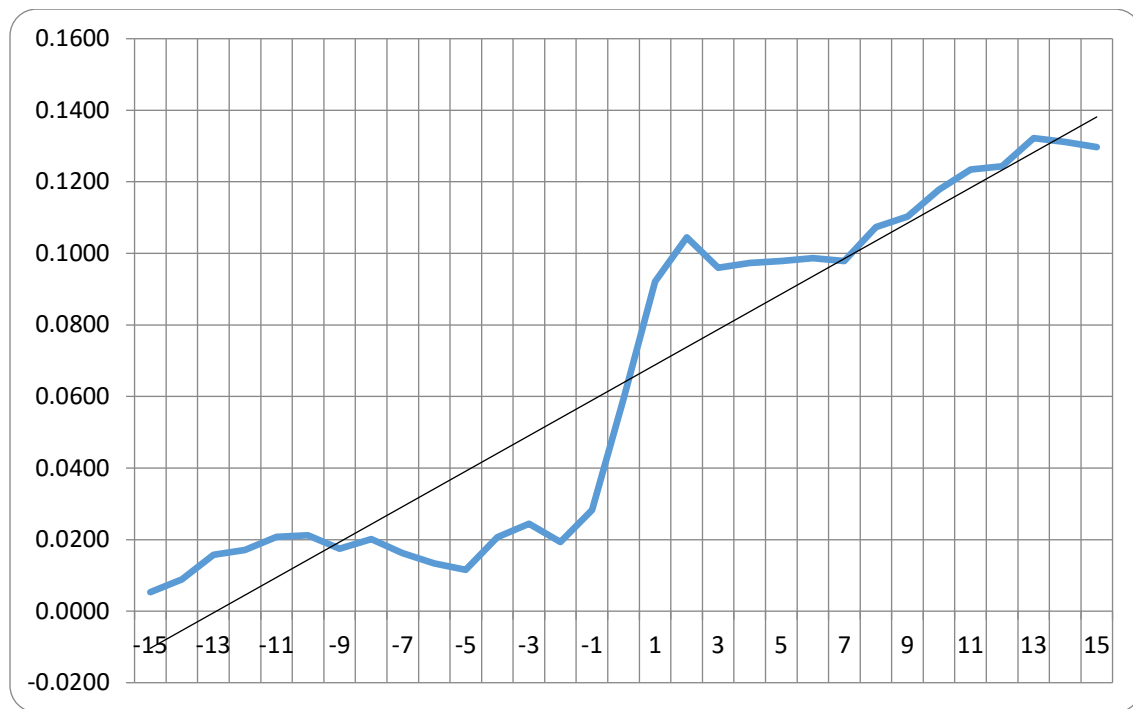
Source: Research Data (2019)

Positive cumulative average abnormal returns were recorded 15 days before bonus issue announcements and 15 days after the bonus issue announcements. The increase in cumulative average abnormal returns was steady over the event window as indicated by the trendline. The increase in was much steeper after the bonus issue announcements. The values increased from 0.0592 on the announcement day to 0.1297 15 days after the announcement. These results indicate that a bonus issue announcement has a cumulative positive effect on the stock returns for companies listed at the NSE contrary to the findings of Gachuhi and Iraya (2017) who established that bonus issues resulted to dramatic reduction in abnormal returns for NSE-listed firms between 2009 to 2010.

4.6 Discussion of Research Findings

The research aimed at determining the effect of bonus issue announcements on the returns on stocks of companies listed on the Nairobi Securities Exchange by analyzing stock reaction of 14 listed firms that had announced bonus issues from 2014 to 2018. The research also discussed the abnormal returns and cumulative abnormal returns and found out that 56.25% (9/16) of the bonus issues resulted to a positive increase in the stock returns. The study found out that most firms recorded positive abnormal returns following the bonus issue announcements over the 31-day event window.

The abnormal returns recorded were less than 1 or -1 implying none of the investors gained or lost greatly. Only National Bank, Crown Paints and Jubilee Holdings Ltd recorded negative average abnormal returns. None of the abnormalities was statistically significant

as shown by the t-test values greater than 0.05. This contrary to the findings of Gachuhi and Iraya (2017) who established that bonus issues resulted to dramatic reduction in abnormal returns for NSE-listed firms between 2009 to 2010.

Trading activity was also generally considered to increase after issue of bonus compared to before issue of bonus. Before and after bonus issue, the disparity in trading activity was found not to be very large except. A bonus issue is a signal that the company is capable of servicing its larger share. The management would not have given these shares if they were not sure that they could increase their profits in the future and pay dividends on all these shares (Charles, 2006). (Dhar & Chaocharia, 2008) describe bonus share issue enable companies to increase liquidity since there is no cash outgoing, the equity will be more practical as per the balance sheet than it would otherwise be. Profits staying the same, the company can not pay an increased capital high dividend. By not declaring a high dividend, it can avoid the government's high employee claims and regulations, and capitalizing reserves substantially increases the company's creditworthiness.

The study found that the Kenyan market has generally reacted positively to announcements of the bonus issue. Papaioannou, et. al, (2002) notes that the signaling hypothesis expressed by bonus announcements conveys valuable private information regarding future earnings to investors. Managers have better knowledge about future earnings as managers and investors may have asymmetric information. Peterson (1971) notes that after the announcement of the bonus issue a change in the share price occurs because the announcement of the bonus issue may have beneficial information content, investors are

aware that companies generally increase the total dividend payout after the bonus issue, which in turn demonstrates the management's confidence in the future of the company. Healy and Palepu (1988) empirically support the informative link between dividends and earnings. They show that for at least one year after the announcement, firms that initiate dividends have significant earnings growth. After the issue of bonuses, there was a rise in stock amounts traded in relation to those before the issue of bonuses. This was found to be in line with Copeland's (1979) research, which indicated that business management was using issues to bring it back to an acceptable value, 26 which in effect increased demand. Company managers sought to issue bonus shares to encourage investors to buy their seemingly cheaper stock as they increase their liquidity, Huang (2004) states that bonus issue enable companies to increase liquidity since there is no cash outgoing, capital will be more realistic per balance sheet than it would otherwise be. Profits remaining the same can not be declared high on expanded capital by the company. By not declaring a high dividend, it can avoid the government's high employee claims and regulations, and capitalizing reserves substantially increases the company's creditworthiness. The conceptual viewpoint suggests that a corporation that offers bonus shares must adjust the stock price to keep the overall shareholder assets unchanged. This study showed a positive mean return on the bonus issue.

According to the Efficient Market Hypothesis (EMH) efficient markets, competitive markets ''ruthlessly exploit all available information when setting security prices" (Ball, 2009). Fama (1995) describes an efficient market as one where actual security prices represent precise estimates of their intrinsic values at all times. In an efficient market, asset

prices must fully reflect all information available in the market. Grossman and Stiglitz (1995) argue investors require a return for gathering information, which is impossible if all available information is already included in share prices, this accounts for the market reaction to share issues without an incentive to gather information, trade would not be justified and the economy would crash.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter discusses the findings summary, the conclusions drawn from the study, policy change recommendations, and future research suggestions. Then the study presents the study's major limitations.

5.2 Summary of Findings

The research was intended to determine the effect of bonus issue announcements on the stock returns of companies listed in the Nairobi Securities Exchange. The study analyzed the stock reaction of 14 listed companies that between 2014 and 2018 had announced 16 bonus issues. Abnormal returns and cumulative abnormal returns were also discussed in the study.

The study found out that 56.25% (9/16) of the bonus issues resulted to a positive increase in the stock returns while 43.75% (7/16) resulted to a negative effect on stock returns. The study found out that most firms recorded positive abnormal returns following the bonus issue announcements over the event window of 30 days. The abnormal returns recorded were less than 1 or -1 implying none of the investors gained or lost greatly. Only National Bank, Crown Paints and Jubilee Holdings Ltd recorded negative average abnormal returns. None of the abnormalities was statistically significant as shown by the t-test values greater than 0.05.

Positive cumulative average abnormal returns were recorded over the event period. The increase in cumulative average abnormal returns was steady over the event window as indicated by the trendline. The increase in was much steeper after the bonus issue announcements. The values increased from 0.0592 on the announcement day to 0.1297 15 days post announcement. These results indicate that a bonus issue announcement has a cumulative positive impact on the stock returns for firms listed at the NSE. This contrary to the findings of Gachuhi and Iraya (2017) who established that bonus issues resulted to dramatic reduction in abnormal returns for NSE-listed firms between 2009 to 2010.

The study establish the variability of the stock return following bonus issue announcements thus determine the market reaction to bonus issue. Results support the semi-strong form of an efficient market hypothesis as stock prices respond to public information so rapidly that no investor can receive an above-normal return by trading on the announcement day and subsequent duration. From the study, the results indicated that the quantities of shares traded on an announcement of bonus issue generally increased. This was particularly true in the days surrounding the issue of bonuses.

Trading activity was also generally seen to increase after bonus issue compared to before bonus issue. It was noticed that the gap in trading activity before and after bonus issue was not very big. Both companies have shown growth in trade but not with inequalities. The results showed a positive announcement effect on the traded shares resulting from the issue of bonuses. There was a positive average unusual return on the issue date, which at 0.05%

was very small. The cumulative abnormal return was calculated throughout the event period to track abnormal returns over a number of trading days.

In practice, if no one can gain extraordinary returns by investing based on the information found in the company's earnings reports, a stock market is informatively efficient in terms of earnings releases. No adverse responses to prices must occur beyond the announcement period. It is possible to view the publication of financial results as a routine and no new information on the market, so the market tends to change the information in the share price automatically and correctly. White et al. (2012) supports this, that while earnings are important indicators of a company's financial results, when posted, they no longer constitute news and have little or no effect on the 41 market. Mabhunu (2004) implies that changes in price must result from release of new data.

Only during the second month of the announcement, NSE reported a substantial and negative abnormal return as the market first underreacted and later stabilized the bonus issue announcement earnings. The findings also fit the Danish stock market study by Sponholtz (2005), with evidence suggesting that the announcement date is accompanied by significant abnormal price reactions. Our findings are similar to those of other companies, such as Grinbalt et al. (1984), that responds favourably to split announcements of dividends and stocks. The findings are in line with the market's effective hypothesis (EMH), as large abnormal returns do not continue to occur afterwards.

5.3 Conclusion

The aim of the research was assess the impact of bonus issue announcement on stock returns of listed companies at the NSE that was checked and the results showed that the announcement of the impact of bonus issue on stock returns even in Kenya. The study concludes that 56.25% (9/16) of the bonus issues resulted to a positive increase in the stock returns of firms listed at the NSE between 2014 and 2018 while 43.75% (7/16) resulted to a negative effect on stock returns. The analysis also suggests that the announcement of the bonus issue has a significant cumulative effect on the stock returns of companies listed on the Nairobi Securities Exchange. The increase in stock returns increases more steadily after the bonus issue announcements.

In summary, the findings above show that in preparation of the announcement of bonus issues, the market overreacts but corrects after publication of bonus news that may not be as good or lucrative as originally anticipated. An anomaly also exists about the NSE's semi-strong form efficiency status, and shareholders can benefit from the listed companies' reward share announcement events as indicated by the positive CAAR that is compatible with previous studies conducted by Olweny (2011) and Aduda and Chemarum (2010), that researched the announcement of dividends and stock splits in the NSE, respectively.

The accumulated abnormal returns resulting from the declaration of reward problem are presumed to be significantly different from zero in order to achieve the above stated. This is because the declaration of the bonus issue is quickly reflected in the share price so that abnormal returns are statistically significant can only be generated on the basis of trading

on the 42th announcement month. In our study of an event study methodology, we find evidence of effective stock price change to bonus issuance announcements for the listed companies.

The study also concludes that the reaction of stock returns of NSE-listed firms to bonus issue announcement is not statistically significant. The quick reaction to the bonus issue announcement is an indication that indicates that the Nairobi Securities Exchange is efficient and therefore sensitive to information. From the study, it has been found that Kenya is an effective stock market that responds to any negative or positive market news. Investors are responding positively to the company's stocks that probably promote higher returns in the future and vice versa.

5.4 Recommendations

A variety of recommendations that arise from the study's findings from proper dissemination of information to safeguarding the market from insider abuse, providing funds for capital market research, improving the communication infrastructure. The key recommendations are:

It was established that there was an abnormal reaction to bonus issue announcement though statistically insignificant. This is as a result speculative trading at the NSE. This points to a need for further investor education to reduce the speculative trading which leads to abnormal reaction. The capital Markets Authority should formulate and implement appropriate trading guidelines to streamline trading activities at the NSE with a bid to make

the market more efficient by reduce abnormalities that create opportunities for investors gain or lose unfairly.

Provide funding for research into the capital market. The government and the NSE should fund capital market research. This will help to improve the efficiency of the market, and provide more information to the public so that they can make informed decisions when making investment decisions. Discourage manipulation by insiders. By increasing surveillance, the NSE can promote the efficiency of the Kenyan stock market. NSE needs to continue tracking market activities at the NSE in order to prevent insider abuse and to ensure prosecution of those caught. Insider trading has the effect of some traders.

Improve the infrastructure of communication. Efforts are being made to improve Kenya's communication infrastructure and should be encouraged to do so. Information on the stock market, as is done in developed markets, should be shared on a daily basis. Most Kenyan newspapers and television stations now disseminate stock market information during the weekdays, and this can be extended to weekends.

Provide the necessary training to support stock market growth and development. NSE can do this through courses, seminars, conferences, symposia and publications for public enlightenment. This is important because the idea of investing in the stock market still needs to be trained by many Kenyans. In addition, NSE can encourage community discourse on topical issues, implement policy changes and foster prudent stock market growth innovation.

Most business performance analyses, including this one, concentrate on evaluating returns and assumptions using statistical tests. Experienced high-standard deviation indicated a broad variation between individual announcement events and companies, which offers further justification in the suggestion that further work investigating the sum of earnings and evaluating company announcements might be more informative.

The key assumption of the method of event study was the capacity to determine the date of the event. Two key event dates did not occur in this case of bonus issues: the announcement date and the effective date. The date of the announcement was not complete and the date of the bonus issue was therefore defined as the date of the event. The comparisons made were purely based on price trends and did not take into account changes in the overall market conditions. Other market conditions could have emerged that have an effect on the general market share operation and on returns, so the market model had to be used.

In addition, a study may also be performed to extend this study, as this study only takes into account a few variables. It is clear that economic, political variables, and trading frequency may be important in determining share price. A study should therefore be conducted involving other variables rather than share prices in order to determine the effects of bonus issues announcements. The correlations made were based purely on price trends and failed to take account of shifts in market conditions like growth and profitability

of the firm, firm size and other market conditions which could have affected the activity of shares.

A study should also be conducted in order to compare and contract how bonus issue announcements affect developed countries and developing countries as the economies are different. This research is for a developing economy hence the research would not be so accurate to generalize the overall effect of bonus issue announcements on stock market. Future research can also be conducted on other African developing markets to determine the extent to which the results are being made.

Bonus issues are not so different from stock splits. Especially for higher-ratio splits, it is necessary to find out how the market reacts to stock splits. This can be done so that to know how different they are from issues of shares. Further research should be conducted to show whether bonus issues will react in the same manner as stock splits would. Bonus issues in the Nairobi Stock Exchange are found to be relatively new. Nevertheless, by using bonus issues most businesses plan to assign their shares do so.

A research can be done to investigate the impact of investor behaviors on the Nairobi Securities Exchange. This is because the investor behaviors determine the volume of shares traded as discussed in the Behavioral Finance Theory. This would therefore be a great way to look at the effects of bonus issues announcements on stock prices while also considering how investors react to their environment.

The study was carried out on a five year period, a longer period of research would give a broader dimension of the effect of bonus announcement on share prices. The study was only done for the period between 2014 to 2018. A longer period would give more concrete performance results on how bonus issues announcements affect stock returns over time. This in addition would create an expectation and clear gaps on contrasting positive and negative effects of bonus issues on stock prices.

The main goal of the EMH is to ensure that stock prices fully reflect all available market knowledge. It has been found that the uncertainty following bonus issue announcements has a significant impact on the performance of listed companies ' share prices in Kenya. This is just an empirical study that shows that bonus issues affect stock returns even in Kenya. A detailed technical level study is needed which covers all aspects to determine the exact degree, pattern if any of magnitude and in which direction bonus issue impacts stock returns in Kenya (before and after announcement). This will ensure that some gaps that have not been explored in this study can be resolved as other technical aspects have been considered.

The corporate events contain information relevant for the valuation of stock and therefore the stock market may use that information to revise the prices of securities. Thus, the investors are advised that when the company comes up with the bonus issue, the investor should take immediate investment decision (buy or sell) in order to benefit from the bonus issue announcement. The corporate events should also therefore be taken into consideration.

5.5 Limitation of the Study

The study was limited to determine the effect of share issue on stock prices in the Stock Exchange market, in achievement of its objective the study was limited to 10 firms listed companies in the NSE that have had bonus issues for the period of six years starting from year 2014 to 2018. A common challenge with using secondary data is that the researcher has no control over the accuracy of the data. To deal with this challenge and ensure accurate data, the researcher resulted to getting the data either from Nairobi Securities Exchange or from the licensed vendors.

The research was also limited to the degree of secondary source information accuracy. While the data could be verified as it came from the publications of the Nairobi Securities Exchange, it could still be prone to these shortcomings. Historical data on stock prices is not available for free. The researcher had to purchase it from vendor licensed by Nairobi Securities Exchange. Therefore, getting data on stock prices following a bonus issue announcement was financially difficult. Bonus share issue is not very popular in the Kenyan securities market. This made it difficult on how many companies could be selected for the study. Hence only a few number of companies could be selected for the purpose of the study.

This study was also limited to the fact that the public is not well informed on the bonus issue. There is need for NSE to enlighten the public through programs, seminars, workshops, symposiums and publications. This is necessary because the prospect of investing in the stock market still needs to be educated by many Kenyans. In addition, NSE

can encourage community discussion on topical issues, facilitate policy changes and foster prudent stock market growth innovation.

The review of literature heavily relied on research studies conducted in the developed countries whose economic circumstances are different in nature from those existing in Kenya hence experiencing a short fall in applying the deductions to the local scene. The market has also been assumed to be efficient and thus this information was immediately reflected in the share prices. It has been assumed further that there were no other significant intervening variables that might have affected the share prices that went unrecorded. Due to unavailability of data this research was restricted to entities quoted in the Nairobi Stock Exchange. Better knowledge would have been gained about what happens in the Kenyan Market if the sample had been drawn from both the quoted and unquoted companies.

Information content in a capital market can be studied with respect to corporate event announcements of stock split, buyback, right issue, bonus announcement, merger & acquisition, dividend etc., and its disseminations. However, this study studied was confined to bonus announcement only. Therefore, the study was confined to only one event announcement. This was an event study, and all the limitations of the analysis tool of an event study are applicable to this study. Furthermore this research is restricted to one emerging securities market, further analysis on other developing markets in the African region can be carried out to assess the degree to which the effects can be generalized. Bonus announcements in the developing markets for stock market price reaction include potentially interesting areas for future research.

The research takes only a small number of variables into consideration. A study should therefore be conducted involving other variables rather than share prices in order to determine the effects of bonus issues announcements. The comparisons made were based purely on price trends and failed to take account of changes in market conditions like growth and profitability of the firm, firm size and other market conditions which could have affected the activity of shares.

Due to unavailability of data this study was restricted to companies quoted in the Nairobi Stock Exchange. Better knowledge would have been gained about what happens in the Kenyan Market if the sample had been drawn from both the quoted and unquoted companies. However only quoted companies' data is readily available and unquoted companies' data is not easily available. Looking at both quoted and unquoted companies would enable us to clearly tell the effect of bonus issue announcement on stock returns of all companies hence would give us a general and direct result.

Technical aspects of the effect of bonus issues on the share prices of companies listed in the NSE have not been used and are important to help us determine the magnitude, trend is one of magnitude and in what direction bonus issues impact stock returns in Kenya. This would ensure that some gaps not studied in this research can be covered as other technical aspects have been taken into consideration.

The study did not focus on the impact of investor behaviors on the Nairobi Securities Exchange. This is because the investor behaviors determine the volume of shares traded as discussed in the Behavioral Finance Theory. This would therefore be a great way to look at the effects of bonus issues announcements on stock prices while also considering how investors react to their environment.

The study did not focus on other corporate events that contain information relevant for the valuation of stock and therefore the stock market may use that information to revise the prices of securities. Other corporate events aside from bonus issue announcements also affect the stock returns of companies. When analyzing how bonus issue announcements affect stock returns, this should be taken into account. These corporate announcements may include, among other factors, stock splits, dividends, fusions and acquisitions.

The study used the event study method and used the event date. Two key event dates did not occur in this case of bonus issues: the date of the announcement and the effective date. The announcement date was not complete and therefore the date of the bonus issue was listed as the event date. The correlations made were based purely on price trends and have failed to take account of shifts in overall market conditions. There may have been other market conditions that have an effect on the general market share activity.

The study was only done for the period between 2014 to 2018. A longer period would give more concrete results on how bonus issues announcements affect stock returns over time. This in addition would create an expectation and clear gaps on contrasting positive and

negative effects of bonus issues on stock prices. The researcher also faced the challenge of inadequate money to fund the project. A lot of expenses were incurred while travelling to collect data, print the available data, and typeset the document as while as print the final copies of the research project. The researchers handled the problem by managing well the little money they had saved.

5.6 Suggestions for Further Research

The study was carried out 15 days pre and post bonus issue announcement. This event window was a little short. The researcher suggests that in future, a similar study should be carried out over a larger event window preferable ±30 days may yield different results as observing the movement of stock within such a long period would enable us to get more concrete results.

Bonus issues in the Nairobi Stock Exchange were considered to be relatively new. Nevertheless, by using bonus issues most businesses planning to offer their shares do so. A study can be done to investigate the impact of investor behaviors on the Nairobi Securities Exchange. Bonus issues are similar to stock splits. In general for higher-ratio splits, it is necessary to find out how the market reacts to stock splits. This can be done so that to know how different they are from issues of shares.

This research used a simple market-based approach to assess abnormal returns. More study is needed in this field and more independent variables such as those relating to company size, growth and profitability need to be included in order to determine if, if other factors

are taken into account, the market would still react positively to reward announcements. From a detailed analysis of listed companies and their effect on bonus issue notifications, we can obtain more reliable results. Extended information, the rates of bonus issue announcements can be examined along an extended activity period to see the true picture of stock returns in Kenya before and after announcements of bonus issuance..

The study suggests that future studies on the impact of the appropriation of the NSE-listed companies' earnings on future earnings should be conducted. This would demonstrate critically what shows the company's future earnings. A research to assess the relationship between the size of the stock dividend and unusual returns on the bonus issue could be carried out. A study could be conducted to assess the investors' interpretation of the various forms of dividends and dividend policies adopted by the companies. A study could be carried out to determine whether there are increases in volumes of shares traded as a result of bonus issues. A research can be conducted to determine whether bonus issuing companies' profits grow as a result of issuing bonus to the shareholders.

A study should also be conducted in order to compare and contract how bonus issue announcements affect developed countries and developing countries as the economies are different. For a developing economy, this research is therefore not so accurate to generalize the overall effect of bonus issue announcements on stock market returns. Future work can also be done on other African developing markets to determine the extent to which the findings are being made.

Further studies done in the future could investigate specific sectors such as financial sector, industrial sector or technological sector. This would give more concentration as to how bonus issues affect share prices in specific sectors. Different sectors have different socio economic factors that affect them. This therefore would cater for the industry specific variables and would give a more general picture of the effect of share prices to these specific industries. Studies could also be undertaken using monthly stock returns as opposed to daily stock returns to establish if a similar relationship exist between stock returns and bonus issues.

While building on this study, the researcher suggests that further studies could be done on this area but in addition, attempt to isolate any other information released in the market subsequent to bonus issues to help confirm that the liquidity reaction is solely due to bonus issues related information. This may be other corporate announcements such as stock splits, dividends, mergers and acquisitions, dissolving of companies among other variables.

A more detailed technical analysis 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 as it would give us a broader perspective in determining whether there is insider trading involved in most transactions.

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. The study was only done for the period between 2014 to 2018. A longer period would give more concrete

results on how bonus issues announcements affect stock returns over time. This in addition would create an expectation and clear gaps on contrasting positive and negative effects of bonus issues on stock prices.

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APPENDICES

Appendix 1: Companies that issued Bonus Period 2014 to 2018

Company	Year	Bonus ratio
CIC insurance	12-Mar-2014	1:5
Longhorn Kenya	26-Sep-2014	3:2
Panafric	27-Feb-2015	1:2
National Bank	03-Mar-2015	1:10
Jubilee Insurance	25-Mar-2015	1:10
Crown Paints	04-May-2015	2:1
Williamson Tea Kenya	15-Jun-2015	1:1
Kapchorua Tea Company	15-Jun-2015	1:1
Diamond Trust Bank	10-Mar-2016	1:10
Nairobi Securities Exchange	24-Mar-2016	1:3
Jubilee Holdings Limited	27-Mar-2017	1:10
Cooperative Bank (K) Ltd	17-Mar-2017	1:5
National Bank of Kenya	27-Apr-2017	1:10
Flame Tree Group	28-Apr-2017	1:10
NIC Bank	22-Mar-2018	1:10
Housing Finance Group	29-Mar-2018	1:10

Appendix 2: Companies listed in the NSE

1. Kurwitu Ventures

2. Nairobi Securities Exchange Ltd Ord 4.00

3. B.O.C Kenya Ltd Ord 5.00

4. British American Tobacco Kenya Ltd Ord 10.00

5. Carbacid Investments Ltd Ord 5.00

6. East African Breweries Ltd Ord 2.00

7. Mumias Sugar Co. Ltd Ord 2.00

8. Unga Group Ltd Ord 5.00

9. Eveready East Africa Ltd Ord.1.00

10. Kenya Orchards Ltd Ord 5.00

11. Flame Tree Group Holdings Ltd Ord 0.825

12. Safaricom PLC Ord 0.05

13. Stanlib Fahari I-REIT

14. New Gold Issuer (RP) Ltd

15. Eaagads Ltd Ord 1.25 AIMS

16. Kapchorua Tea Co. Ltd Ord Ord 5.00 AIMS

17. Kakuzi Ord.5.00

18. Limuru Tea Co. Ltd Ord 20.00

19. Rea Vipingo Plantations Ltd Ord 5.00

20. Sasini Ltd Ord 1.00

21. Williamson Tea Kenya Ltd Ord 5.00

22. Car and General (K) Ltd Ord 5.00

23. Barclays Bank Ltd Ord 0.50

24. Stanbic Holdings Plc. ord.5.00

25. I&M Holdings Ltd Ord 1.00

26. Diamond Trust Bank Kenya Ltd Ord 4.00

27. HF Group Ltd Ord 5.00

28. KCB Group Ltd Ord 1.00

29. National Bank of Kenya Ltd Ord 5.00

30. NIC Group PLC

31. Standard Chartered Bank Ltd Ord 5.00

32. Equity Group Holdings Ord 0.50

33. The Co-operative Bank of Kenya Ltd Ord 1.00

34. BK Group PLC

35. Express Ltd Ord 5.00

36. Sameer Africa PLC Ord 5.00

37. Kenya Airways Ltd Ord 5.00

38. Nation Media Group Ord. 2.50

39. Standard Group Ltd Ord 5.00

40. TPS Eastern Africa (Serena) Ltd Ord 1.00

41. Scangroup Ltd Ord 1.00

42. Uchumi Supermarket Ltd Ord 5.00

43. Longhorn Publishers Ltd

44. Deacons (East Africa) Plc Ord 2.50

45. Nairobi Business Ventures Ltd

46. Athi River Mining Ord 5.00

47. Bamburi Cement Ltd Ord 5.00

48. Crown Paints Kenya PLC. 0rd 5.00

49. E.A.Cables Ltd Ord 0.50

50. E.A.Portland Cement Ltd Ord 5.00

51. Total Kenya Ltd Ord 5.00

52. KenGen Ltd Ord. 2.50

53. Kenya Power & Lighting Co Ltd

54. Umeme Ltd Ord 0.50

55. Jubilee Holdings Ltd Ord 5.00

56. Sanlam Kenya PLC 0rd 5.00

57. Kenya Re-Insurance Corporation Ltd Ord 2.50

58. Liberty Kenya Holdings Ltd

59. Britam Holdings Ltd Ord 0.10

60. CIC Insurance Group Ltd Ord 1.00

61. Olympia Capital Holdings ltd Ord 5.00

62. Centum Investment Co Ltd Ord 0.50

63. Trans-Century Ltd

64. Home Afrika Ltd Ord 1.00

Appendix 3: Data Collection Form

CIC Insurance

Date	Open	Close	Price	R	NSE20INDE	MR	(E)R	AR	CAR	AR t-test
4-Apr-14	8.4	8.45	8.425	0.00298	4,908.75	-0.00190	0.00243	0.00054	0.20428	12.1132
3-Apr-14	8.4	8.4	8.4	-0.00592	4,918.07	-0.00314	0.00236	-0.00828	0.20373	12.081
2-Apr-14	8.5	8.4	8.45	0.00595	4,933.56	-0.00532	0.00224	0.00372	0.21201	12.5719
1-Apr-14	8.3	8.5	8.4	0.03704	4,959.96	0.00287	0.00271	0.03433	0.20830	12.3515
31-Mar-14	8	8.2	8.1	0.01567	4,945.78	-0.00536	0.00223	0.01344	0.17397	10.316
28-Mar-14	7.95	8	7.975	0.01270	4,972.45	0.00279	0.00271	0.00999	0.16053	9.519
27-Mar-14	7.8	7.95	7.875	0.01286	4,958.62	-0.00214	0.00242	0.01044	0.15054	8.92647
26-Mar-14	7.7	7.85	7.775	0.00974	4,969.24	-0.00097	0.00249	0.00725	0.14009	8.3073
25-Mar-14	7.7	7.7	7.7	-0.00645	4,974.05	0.00263	0.0027	-0.00915	0.13284	7.87726
24-Mar-14	7.8	7.7	7.75	-0.00958	4,961.02	-0.00216	0.00242	-0.01200	0.14199	8.41972
21-Mar-14	7.85	7.8	7.825	0.00643	4,971.74	0.00623	0.00291	0.00353	0.15399	9.13151
20-Mar-14	7.85	7.7	7.775	-0.01582	4,940.97	0.00084	0.00259	-0.01842	0.15047	8.92245
19-Mar-14	8	7.8	7.9	0.01282	4,936.80	0.00164	0.00264	0.01018	0.16888	10.0145
18-Mar-14	7.6	8	7.8	0.02970	4,928.74	0.00124	0.00262	0.02709	0.15870	9.41073
17-Mar-14	7.55	7.6	7.575	0.02020	4,922.65	-0.01228	0.00183	0.01837	0.13162	7.80452
14-Mar-14	7.3	7.55	7.425	0.03846	4,983.83	0.00467	0.00282	0.03565	0.11325	6.71521
13-Mar-14	7	7.3	7.15	0.02878	4,960.65	0.00503	0.00284	0.02594	0.07760	4.60147
12-Mar-14	6.85	7.05	6.95	0.00725	4,935.81	0.00406	0.00278	0.00447	0.05166	3.06323
11-Mar-14	7	6.8	6.9	0.01099	4,915.84	-0.00561	0.00222	0.00877	0.04719	2.79837
10-Mar-14	6.95	6.7	6.825	-0.02847	4,943.57	0.00751	0.00298	-0.03145	0.03842	2.2783
7-Mar-14	7.1	6.95	7.025	0.00357	4,906.72	0.00211	0.00267	0.00091	0.06987	4.14319
6-Mar-14	7	7	7	-0.00709	4,896.40	-0.00129	0.00247	-0.00956	0.06897	4.08952
5-Mar-14	7.2	6.9	7.05	-0.01399	4,902.72	-0.00081	0.0025	-0.01648	0.07853	4.6565
4-Mar-14	7.1	7.2	7.15	0.02143	4,906.70	-0.00574	0.00221	0.01922	0.09501	5.6339
3-Mar-14	6.8	7.2	7	0.04869	4,935.01	0.00032	0.00256	0.04613	0.07579	4.49436
28-Feb-14	6.55	6.8	6.675	0.01521	4,933.41	0.00357	0.00275	0.01246	0.02967	1.75918
27-Feb-14	6.5	6.65	6.575	0.01544	4,915.85	0.00252	0.00269	0.01275	0.01721	1.02046
26-Feb-14	6.45	6.5	6.475	0.00000	4,903.48	0.00567	0.00287	-0.00287	0.00446	0.2642
25-Feb-14	6.5	6.45	6.475	0.00388	4,875.82	0.00559	0.00287	0.00101	0.00733	0.43457
24-Feb-14	6.45	6.45	6.45	-0.00769	4,848.71	0.00258	0.00269	-0.01039	0.00632	0.37483
21-Feb-14	6.5	6.5	6.5	0.01961	4,836.25	0.00615	0.0029	0.01671	0.01671	0.99069

Longhorn Kenya

Date	Open	Close	Price	R	NSE 20 INDE	MR	(E)R	AR	CAR	AR t-test
17-Oct-14	125	125	125	0.00000	5,279.88	-0.00193	-0.0001	0.00014	0.06166	2.70725
16-Oct-14	125	125	125	0.00000	5,290.09	-0.00278	0.0003	-0.00030	0.06152	2.70099
15-Oct-14	125	125	125	-0.01575	5,304.86	0.00108	-0.0017	-0.01405	0.06182	2.71414
14-Oct-14	127	127	127	0.00000	5,299.12	-0.00229	4.3E-05	-0.00004	0.07587	3.33079
13-Oct-14	127	127	127	0.04959	5,311.27	0.00583	-0.0042	0.05375	0.07591	3.33265
10-Oct-14	121	121	121	0.00000	5,280.46	0.00150	-0.0019	0.00192	0.02216	0.97296
9-Oct-14	121	121	121	-0.01224	5,272.53	-0.00290	0.00036	-0.01260	0.02024	0.88867
8-Oct-14	125	120	122.5	-0.02000	5,287.87	-0.00233	6.4E-05	-0.02006	0.03285	1.44205
7-Oct-14	125	125	125	0.02459	5,300.21	-0.00437	0.00112	0.02347	0.05291	2.32289
6-Oct-14	122	122	122	0.00000	5,323.49	0.00587	-0.0042	0.00418	0.02944	1.29258
3-Oct-14	122	122	122	-0.01215	5,292.42	0.00815	-0.0054	-0.00679	0.02526	1.10906
2-Oct-14	122	125	123.5	-0.04264	5,249.65	-0.00340	0.00062	-0.04325	0.03205	1.40703
1-Oct-14	128	130	129	0.00781	5,267.54	0.00227	-0.0023	0.01013	0.07530	3.3059
30-Sep-14	128	128	128	-0.00775	5,255.62	-0.00042	-0.0009	-0.00683	0.06517	2.86125
29-Sep-14	130	128	129	0.00781	5,257.81	0.00783	-0.0052	0.01301	0.07200	3.16093
26-Sep-14	128	128	128	-0.00389	5,216.96	-0.00612	0.00202	-0.00592	0.05899	2.58989
25-Sep-14	132	125	128.5	-0.04104	5,249.07	-0.01382	0.00601	-0.04706	0.06491	2.84961
24-Sep-14	134	134	134	0.00375	5,322.65	-0.01016	0.00412	-0.00037	0.11197	4.9156
23-Sep-14	135	132	133.5	0.00376	5,377.29	-0.00538	0.00164	0.00211	0.11234	4.93196
22-Sep-14	130	136	133	0.02703	5,406.39	0.01863	-0.0108	0.03781	0.11022	4.83912
19-Sep-14	129	130	129.5	0.01172	5,307.52	0.01621	-0.0095	0.02125	0.07241	3.17913
18-Sep-14	128	128	128	0.00000	5,222.87	0.00264	-0.0025	0.00251	0.05116	2.24622
17-Sep-14	128	128	128	0.02400	5,209.10	-0.00156	-0.0003	0.02433	0.04865	2.13603
16-Sep-14	125	125	125	-0.00398	5,217.25	0.00661	-0.0046	0.00058	0.02432	1.06775
15-Sep-14	126	125	125.5	-0.03462	5,182.98	0.00261	-0.0025	-0.03212	0.02374	1.04229
12-Sep-14	130	130	130	-0.00763	5,169.50	-0.00542	0.00166	-0.00930	0.05587	2.45261
11-Sep-14	132	130	131	0.00769	5,197.67	0.00148	-0.0019	0.00960	0.06516	2.86079
10-Sep-14	130	130	130	0.00775	5,190.01	0.00137	-0.0019	0.00960	0.05556	2.43942
9-Sep-14	129	129	129	0.00389	5,182.89	0.00273	-0.0026	0.00644	0.04596	2.01776
8-Sep-14	127	130	128.5	0.02800	5,168.80	0.00164	-0.002	0.02999	0.03952	1.73487
5-Sep-14	125	125	125	0.00806	5,160.32	0.00061	-0.0015	0.00952	0.00952	0.41814

Panafric

Date	Open	Close	Price	R	NSE 20 IN	MR	(E)R	AR	CAR	AR t-test
20-Mar-15	133	127	130	-0.02256	5,304.41	-0.00788	-0.0104	-0.01220	0.13415	6.11399
19-Mar-15	133	133	133	0.00377	5,346.56	0.00079	0.00037	0.00341	0.14635	6.67015
18-Mar-15	133	132	132.5	-0.00749	5,342.36	0.00537	0.00603	-0.01352	0.14294	6.51486
17-Mar-15	134	133	133.5	-0.00373	5,313.84	-0.00530	-0.0072	0.00343	0.15647	7.13111
16-Mar-15	134	134	134	0.00000	5,342.17	-0.00152	-0.0025	0.00248	0.15303	6.97472
13-Mar-15	134	134	134	0.00000	5,350.30	0.00052	3.3E-05	-0.00003	0.15055	6.86149
12-Mar-15	134	134	134	-0.00741	5,347.54	-0.00278	-0.004	-0.00337	0.15058	6.86297
11-Mar-15	135	135	135	0.01887	5,362.43	-0.00117	-0.002	0.02092	0.15395	7.01649
10-Mar-15	133	132	132.5	-0.00376	5,368.69	-0.00056	-0.0013	-0.00246	0.13304	6.06325
9-Mar-15	133	133	133	0.00000	5,371.69	-0.00028	-0.001	0.00096	0.13550	6.17551
6-Mar-15	133	133	133	0.01141	5,373.22	-0.00699	-0.0093	0.02066	0.13454	6.13186
5-Mar-15	133	130	131.5	-0.03309	5,411.05	-0.00916	-0.0119	-0.02115	0.11388	5.1904
4-Mar-15	138	134	136	-0.02509	5,461.08	-0.00244	-0.0036	-0.02146	0.13504	6.15456
3-Mar-15	141	138	139.5	0.08984	5,474.45	-0.00458	-0.0063	0.09611	0.15650	7.13281
2-Mar-15	124	132	128	0.04918	5,499.64	0.00151	0.00126	0.04792	0.06039	2.75236
27-Feb-15	115	129	122	0.08929	5,491.37	0.00284	0.0029	0.08638	0.01247	0.56817
26-Feb-15	112	112	112	0.00000	5,475.84	0.00147	0.00122	-0.00122	-0.07392	-3.3689
25-Feb-15	112	112	112	0.04186	5,467.78	0.00230	0.00224	0.03962	-0.07270	-3.3134
24-Feb-15	105	110	107.5	0.03865	5,455.23	-0.00011	-0.0007	0.03939	-0.11232	-5.1192
23-Feb-15	105	102	103.5	-0.03271	5,455.84	-0.00184	-0.0029	-0.02983	-0.15171	-6.9145
20-Feb-15	107	107	107	-0.03604	5,465.90	-0.00145	-0.0024	-0.03364	-0.12188	-5.555
19-Feb-15	115	107	111	-0.05932	5,473.81	0.00510	0.0057	-0.06502	-0.08824	-4.0217
18-Feb-15	118	118	118	-0.00840	5,446.04	0.00783	0.00908	-0.01748	-0.02322	-1.0583
17-Feb-15	119	119	119	0.00847	5,403.72	0.00859	0.01002	-0.00154	-0.00574	-0.2615
16-Feb-15	118	118	118	0.00000	5,357.69	0.00330	0.00347	-0.00347	-0.00420	-0.1912
13-Feb-15	118	118	118	0.00000	5,340.08	0.00117	0.00084	-0.00084	-0.00072	-0.033
12-Feb-15	118	118	118	0.00855	5,333.86	0.00072	0.00029	0.00826	0.00011	0.00512
11-Feb-15	117	117	117	0.00000	5,330.01	0.00319	0.00334	-0.00334	-0.00815	-0.3713
10-Feb-15	117	117	117	-0.00847	5,313.06	0.00321	0.00336	-0.01184	-0.00481	-0.2191
9-Feb-15	118	118	118	0.00855	5,296.07	0.00291	0.00299	0.00556	0.00703	0.32029
6-Feb-15	117	117	117	0.00000	5,280.72	-0.00070	-0.0015	0.00147	0.00147	0.06695

National Bank

Date	Open	Close	Price	R	NSE 20 IN	MR	(E)R	AR	CAR	AR t-test
24-Mar-15	25	25.75	25.375	0.00495	5,254.60	-0.00210	0.00156	0.00339	-0.06096	-2.0733
23-Mar-15	25.5	25	25.25	0.05759	5,265.67	-0.00730	0.00204	0.05555	-0.06435	-2.1887
20-Mar-15	23	24.75	23.875	-0.01546	5,304.41	-0.00788	0.0021	-0.01756	-0.11990	-4.0779
19-Mar-15	24	24.5	24.25	0.01042	5,346.56	0.00079	0.00129	0.00913	-0.10234	-3.4807
18-Mar-15	24	24	24	-0.04000	5,342.36	0.00537	0.00086	-0.04086	-0.11147	-3.7912
17-Mar-15	25	25	25	0.01010	5,313.84	-0.00530	0.00186	0.00824	-0.07061	-2.4015
16-Mar-15	24.5	25	24.75	0.01020	5,342.17	-0.00152	0.0015	0.00870	-0.07886	-2.6819
13-Mar-15	24	25	24.5	0.01554	5,350.30	0.00052	0.00131	0.01423	-0.08756	-2.9779
12-Mar-15	24.5	23.75	24.125	-0.01026	5,347.54	-0.00278	0.00162	-0.01188	-0.10179	-3.4619
11-Mar-15	24.75	24	24.375	0.01563	5,362.43	-0.00117	0.00147	0.01416	-0.08991	-3.0579
10-Mar-15	23	25	24	-0.05419	5,368.69	-0.00056	0.00141	-0.05560	-0.10407	-3.5394
9-Mar-15	25	25.75	25.375	0.04639	5,371.69	-0.00028	0.00139	0.04500	-0.04847	-1.6484
6-Mar-15	23.5	25	24.25	-0.00513	5,373.22	-0.00699	0.00201	-0.00714	-0.09347	-3.179
5-Mar-15	25.5	23.25	24.375	-0.04412	5,411.05	-0.00916	0.00222	-0.04633	-0.08633	-2.9361
4-Mar-15	25	26	25.5	0.02513	5,461.08	-0.00244	0.00159	0.02354	-0.03999	-1.3602
3-Mar-15	25	24.75	24.875	-0.02451	5,474.45	-0.00458	0.00179	-0.02630	-0.06353	-2.1607
2-Mar-15	25.25	25.75	25.5	0.00990	5,499.64	0.00151	0.00122	0.00868	-0.03723	-1.2663
27-Feb-15	25	25.5	25.25	-0.04265	5,491.37	0.00284	0.0011	-0.04375	-0.04591	-1.5615
26-Feb-15	26.5	26.25	26.375	0.00000	5,475.84	0.00147	0.00122	-0.00122	-0.00216	-0.0736
25-Feb-15	26.25	26.5	26.375	0.00957	5,467.78	0.00230	0.00115	0.00842	-0.00094	-0.032
24-Feb-15	26.25	26	26.125	-0.00476	5,455.23	-0.00011	0.00137	-0.00613	-0.00936	-0.3184
23-Feb-15	26.5	26	26.25	0.04478	5,455.84	-0.00184	0.00153	0.04324	-0.00323	-0.1098
20-Feb-15	24.25	26	25.125	-0.04286	5,465.90	-0.00145	0.0015	-0.04435	-0.04647	-1.5806
19-Feb-15	25.75	26.75	26.25	0.02439	5,473.81	0.00510	0.00089	0.02351	-0.00212	-0.0721
18-Feb-15	25.5	25.75	25.625	-0.01442	5,446.04	0.00783	0.00063	-0.01505	-0.02563	-0.8715
17-Feb-15	26	26	26	0.01961	5,403.72	0.00859	0.00056	0.01905	-0.01057	-0.3596
16-Feb-15	25.25	25.75	25.5	0.00000	5,357.69	0.00330	0.00105	-0.00105	-0.02962	-1.0074
13-Feb-15	25.5	25.5	25.5	0.00493	5,340.08	0.00117	0.00125	0.00367	-0.02857	-0.9716
12-Feb-15	25.75	25	25.375	-0.02404	5,333.86	0.00072	0.00129	-0.02533	-0.03224	-1.0965
11-Feb-15	26.25	25.75	26	0.00000	5,330.01	0.00319	0.00106	-0.00106	-0.00691	-0.235
10-Feb-15	26	26	26	-0.00478	5,313.06	0.00321	0.00106	-0.00585	-0.00585	-0.1988

National Bank 2

Date	Open	Close	Price	R	NSE 20 IN	MR	(E)R	AR	CAR	AR t-test
22-May-17	8	7.15	7.575	-0.01623	3,296.16	0.00325	-0.0023	-0.01393	0.31295	7.13912
19-May-17	7.5	7.9	7.7	-0.04348	3,285.49	0.01258	-0.0079	-0.03557	0.32688	7.45688
18-May-17	8.1	8	8.05	-0.03593	3,244.69	0.00566	-0.0038	-0.03217	0.36245	8.2682
17-May-17	8.2	8.5	8.35	0.03086	3,226.43	0.00163	-0.0013	0.03219	0.39462	9.00212
16-May-17	8.2	8	8.1	0.08000	3,221.19	-0.00251	0.00116	0.07884	0.36243	8.26769
15-May-17	7.5	7.5	7.5	0.08303	3,229.30	-0.00475	0.0025	0.08053	0.28358	6.46912
12-May-17	6.8	7.05	6.925	0.06538	3,244.72	0.01534	-0.0096	0.07496	0.20306	4.63212
11-May-17	6.5	6.5	6.5	0.01167	3,195.70	0.00639	-0.0042	0.01587	0.12810	2.92213
10-May-17	6.35	6.5	6.425	0.00784	3,175.41	0.01073	-0.0068	0.01465	0.11223	2.56019
9-May-17	6.25	6.5	6.375	0.00394	3,141.69	-0.00402	0.00207	0.00187	0.09758	2.22603
8-May-17	6.5	6.2	6.35	0.00000	3,154.38	0.00233	-0.0018	0.00175	0.09571	2.18335
5-May-17	6.35	6.35	6.35	0.00000	3,147.04	0.00085	-0.0009	0.00086	0.09396	2.14332
3-May-17	6.5	6.2	6.35	-0.01931	3,144.38	0.00327	-0.0023	-0.01699	0.09309	2.12368
2-May-17	6.45	6.5	6.475	0.02372	3,134.15	-0.00155	0.00058	0.02313	0.11008	2.51123
28-Apr-17	6.45	6.2	6.325	0.03265	3,139.03	-0.00581	0.00314	0.02951	0.08695	1.98349
27-Apr-17	6.1	6.15	6.125	-0.02778	3,157.38	-0.00221	0.00097	-0.02875	0.05744	1.31027
26-Apr-17	6.5	6.1	6.3	0.05000	3,164.36	0.00063	-0.0007	0.05073	0.08619	1.96618
25-Apr-17	6	6	6	-0.04000	3,162.37	0.00796	-0.0051	-0.03486	0.03546	0.80889
24-Apr-17	6	6.5	6.25	-0.00794	3,137.41	-0.00183	0.00075	-0.00868	0.07032	1.6042
21-Apr-17	6.6	6	6.3	0.03279	3,143.15	0.00462	-0.0031	0.03592	0.07900	1.80227
20-Apr-17	6	6.2	6.1	0.02521	3,128.69	-0.00655	0.00359	0.02162	0.04309	0.98289
19-Apr-17	5.9	6	5.95	-0.00418	3,149.33	0.00625	-0.0041	-0.00008	0.02146	0.48964
18-Apr-17	6	5.95	5.975	0.00420	3,129.78	0.00899	-0.0058	0.00996	0.02154	0.49137
13-Apr-17	6	5.9	5.95	-0.00418	3,101.89	-0.00026	-0.0002	-0.00399	0.01158	0.26416
12-Apr-17	5.95	6	5.975	0.04367	3,102.71	-0.00227	0.00101	0.04265	0.01557	0.35519
11-Apr-17	5.5	5.95	5.725	-0.05372	3,109.78	0.00172	-0.0014	-0.05233	-0.02708	-0.6178
10-Apr-17	6.05	6.05	6.05	-0.02811	3,104.43	0.00382	-0.0027	-0.02546	0.02525	0.57594
7-Apr-17	6.45	6	6.225	-0.00797	3,092.61	-0.00396	0.00203	-0.00999	0.05071	1.15676
6-Apr-17	6.05	6.5	6.275	0.03292	3,104.89	0.00119	-0.0011	0.03399	0.06070	1.38473
5-Apr-17	6.1	6.05	6.075	0.01250	3,101.19	0.00002	-0.0004	0.01287	0.02671	0.60929
4-Apr-17	6	6	6	0.01266	3,101.12	0.00138	-0.0012	0.01384	0.01384	0.3158

Jubilee Insurance

Date	Open	Close	Price	R	NSE 20 IN	MR	(E)R	AR	CAR	AR t-test
17-Apr-15	570	570	570	0.00885	5,093.00	0.00281	0.00502	0.00383	0.04611	2.18357
16-Apr-15	570	560	565	-0.00877	5,078.74	-0.00922	-0.0054	-0.00335	0.04228	2.00238
15-Apr-15	570	570	570	0.04587	5,126.02	-0.00039	0.00225	0.04362	0.04564	2.16124
14-Apr-15	520	570	545	0.02830	5,128.02	-0.00159	0.0012	0.02710	0.00201	0.09535
13-Apr-15	520	540	530	0.01923	5,136.20	0.00239	0.00466	0.01457	-0.02508	-1.1879
10-Apr-15	520	520	520	-0.02347	5,123.97	-0.00079	0.0019	-0.02537	-0.03966	-1.878
9-Apr-15	525	540	532.5	-0.07391	5,128.03	-0.00278	0.00017	-0.07408	-0.01428	-0.6764
8-Apr-15	570	580	575	0.00877	5,142.35	-0.00722	-0.0037	0.01245	0.05980	2.83204
7-Apr-15	570	570	570	-0.02481	5,179.76	-0.00329	-0.0003	-0.02454	0.04735	2.24231
2-Apr-15	570	599	584.5	0.02544	5,196.86	-0.00833	-0.0046	0.03008	0.07189	3.40442
1-Apr-15	570	570	570	0.02703	5,240.53	-0.00145	0.00133	0.02570	0.04180	1.97974
31-Mar-15	555	555	555	0.00000	5,248.16	0.00106	0.0035	-0.00350	0.01610	0.76256
30-Mar-15	555	555	555	-0.02632	5,242.62	0.00005	0.00263	-0.02895	0.01961	0.9285
27-Mar-15	570	570	570	0.03167	5,242.35	-0.00198	0.00087	0.03080	0.04855	2.29938
26-Mar-15	530	575	552.5	-0.02212	5,252.74	-0.00424	-0.0011	-0.02103	0.01775	0.84058
25-Mar-15	560	570	565	0.00893	5,275.10	0.00390	0.00597	0.00296	0.03878	1.83662
24-Mar-15	560	560	560	0.01818	5,254.60	-0.00210	0.00076	0.01742	0.03583	1.69663
23-Mar-15	550	550	550	0.00365	5,265.67	-0.00730	-0.0038	0.00740	0.01841	0.87169
20-Mar-15	546	550	548	-0.00544	5,304.41	-0.00788	-0.0043	-0.00119	0.01101	0.52121
19-Mar-15	551	551	551	0.04853	5,346.56	0.00079	0.00327	0.04526	0.01220	0.57756
18-Mar-15	500	551	525.5	-0.04628	5,342.36	0.00537	0.00724	-0.05352	-0.03306	-1.5657
17-Mar-15	551	551	551	0.00364	5,313.84	-0.00530	-0.002	0.00566	0.02046	0.96912
16-Mar-15	549	549	549	0.01573	5,342.17	-0.00152	0.00127	0.01446	0.01481	0.70116
13-Mar-15	540	541	540.5	-0.01727	5,350.30	0.00052	0.00303	-0.02031	0.00035	0.01646
12-Mar-15	550	550	550	0.01289	5,347.54	-0.00278	0.00018	0.01271	0.02066	0.97818
11-Mar-15	540	546	543	-0.00367	5,362.43	-0.00117	0.00158	-0.00524	0.00794	0.37607
10-Mar-15	540	550	545	0.00833	5,368.69	-0.00056	0.0021	0.00622	0.01319	0.62444
9-Mar-15	540	541	540.5	0.00000	5,371.69	-0.00028	0.00234	-0.00234	0.00696	0.32972
6-Mar-15	541	540	540.5	0.00093	5,373.22	-0.00699	-0.0035	0.00441	0.00930	0.44052
5-Mar-15	540	540	540	0.00000	5,411.05	-0.00916	-0.0054	0.00536	0.00490	0.23186
4-Mar-15	540	540	540	0.00000	5,461.08	-0.00244	0.00047	-0.00047	-0.00047	-0.0221

Crown Paint

Date	Open	Close	Price	R	NSE 20 IN	MR	(E)R	AR	CAR	AR t-test
25-May-15	575	572	573.5	-0.00607	4,858.61	-0.00437	0.00201	-0.00808	-0.00804	-0.3447
22-May-15	569	585	577	-0.03512	4,879.95	-0.00993	0.00025	-0.03537	0.00004	0.00167
21-May-15	598	598	598	0.01442	4,928.91	0.00091	0.00368	0.01074	0.03540	1.51845
20-May-15	580	599	589.5	0.02522	4,924.45	-0.00349	0.00229	0.02293	0.02467	1.05798
19-May-15	570	580	575	-0.00862	4,941.71	0.00190	0.004	-0.01262	0.00174	0.07462
18-May-15	580	580	580	0.00870	4,932.32	-0.00972	0.00032	0.00838	0.01436	0.61584
15-May-15	575	575	575	-0.00862	4,980.71	0.00020	0.00346	-0.01208	0.00598	0.25652
14-May-15	580	580	580	0.01754	4,979.71	-0.00015	0.00335	0.01420	0.01806	0.77461
13-May-15	570	570	570	-0.04362	4,980.48	-0.00648	0.00134	-0.04497	0.00386	0.1657
12-May-15	594	598	596	0.02055	5,012.94	-0.00587	0.00154	0.01901	0.04883	2.09433
11-May-15	584	584	584	0.00000	5,042.52	-0.00557	0.00163	-0.00163	0.02982	1.27899
8-May-15	584	584	584	0.00172	5,070.75	-0.00079	0.00315	-0.00143	0.03145	1.34897
7-May-15	570	596	583	-0.00850	5,074.76	-0.00181	0.00282	-0.01133	0.03288	1.4103
6-May-15	580	596	588	0.00085	5,083.94	-0.00325	0.00237	-0.00152	0.04421	1.89609
5-May-15	595	580	587.5	0.03070	5,100.51	0.00297	0.00434	0.02636	0.04573	1.96108
4-May-15	570	570	570	0.00000	5,085.40	-0.00118	0.00302	-0.00302	0.01936	0.83033
30-Apr-15	570	570	570	-0.02564	5,091.43	0.00599	0.00529	-0.03093	0.02238	0.95986
29-Apr-15	570	600	585	0.02812	5,061.11	0.00121	0.00378	0.02434	0.05331	2.28659
28-Apr-15	570	568	569	-0.01812	5,055.00	-0.00025	0.00332	-0.02144	0.02897	1.24264
27-Apr-15	589	570	579.5	0.01667	5,056.27	-0.00095	0.00309	0.01357	0.05041	2.16195
24-Apr-15	570	570	570	0.00000	5,061.09	0.00682	0.00556	-0.00556	0.03684	1.57984
23-Apr-15	570	570	570	-0.00175	5,026.79	-0.00318	0.00239	-0.00414	0.04239	1.81817
22-Apr-15	571	571	571	0.00175	5,042.85	-0.00611	0.00146	0.00030	0.04653	1.99564
21-Apr-15	570	570	570	0.00707	5,073.86	-0.00552	0.00165	0.00542	0.04624	1.98299
20-Apr-15	566	566	566	-0.00702	5,102.04	0.00177	0.00396	-0.01098	0.04081	1.75047
17-Apr-15	570	570	570	0.00885	5,093.00	0.00281	0.00428	0.00456	0.05179	2.22119
16-Apr-15	570	560	565	-0.00877	5,078.74	-0.00922	0.00047	-0.00925	0.04723	2.02542
15-Apr-15	570	570	570	0.04587	5,126.02	-0.00039	0.00327	0.04260	0.05647	2.42195
14-Apr-15	520	570	545	0.02830	5,128.02	-0.00159	0.00289	0.02541	0.01387	0.59491
13-Apr-15	520	540	530	0.01923	5,136.20	0.00239	0.00415	0.01508	-0.01154	-0.4949
10-Apr-15	520	520	520	-0.02347	5,123.97	-0.00079	0.00314	-0.02662	-0.02662	-1.1416

Williamson Tea

Date	Open	Close	Price	R	NSE 20 IN	MR	(E)R	AR	CAR	AR t-test
6-Jul-15	380	350	365	0.04286	4,814.11	0.00032	0.00098	0.04188	0.30816	15.5004
3-Jul-15	350	350	350	-0.01408	4,812.57	-0.00559	-0.0013	-0.01279	0.26628	13.3939
2-Jul-15	360	350	355	-0.05960	4,839.60	-0.00387	-0.0006	-0.05897	0.27907	14.0373
1-Jul-15	397	358	377.5	-0.08039	4,858.42	-0.00971	-0.0029	-0.07751	0.33804	17.0035
30-Jun-15	402	419	410.5	-0.01084	4,906.07	0.01416	0.0063	-0.01714	0.41555	20.9023
29-Jun-15	420	410	415	-0.00836	4,837.58	0.00566	0.00303	-0.01139	0.43269	21.7646
26-Jun-15	420	417	418.5	0.00240	4,810.36	0.00242	0.00179	0.00061	0.44409	22.3378
25-Jun-15	410	425	417.5	0.01212	4,798.73	0.00103	0.00125	0.01087	0.44348	22.3072
24-Jun-15	419	406	412.5	0.03125	4,793.77	0.00365	0.00226	0.02899	0.43261	21.7605
23-Jun-15	400	400	400	0.00251	4,776.35	-0.00086	0.00052	0.00198	0.40362	20.3022
22-Jun-15	399	399	399	-0.00250	4,780.48	0.00039	0.001	-0.00350	0.40164	20.2025
19-Jun-15	400	400	400	0.09141	4,778.63	-0.00368	-0.0006	0.09196	0.40514	20.3788
18-Jun-15	363	370	366.5	-0.03042	4,796.26	0.00122	0.00132	-0.03175	0.31318	15.753
17-Jun-15	360	396	378	0.05000	4,790.42	0.00360	0.00224	0.04776	0.34492	17.3499
16-Jun-15	360	360	360	0.12500	4,773.23	0.00287	0.00196	0.12304	0.29717	14.9476
15-Jun-15	290	350	320	0.20755	4,759.58	-0.00114	0.00042	0.20713	0.17412	8.7585
12-Jun-15	265	265	265	0.00000	4,765.02	0.00423	0.00248	-0.00248	-0.03301	-1.6603
11-Jun-15	265	265	265	-0.01852	4,744.95	0.00006	0.00088	-0.01940	-0.03052	-1.5354
10-Jun-15	270	270	270	0.00000	4,744.66	-0.00016	0.00079	-0.00079	-0.01113	-0.5597
9-Jun-15	270	270	270	0.00000	4,745.42	-0.00336	-0.0004	0.00044	-0.01033	-0.5198
8-Jun-15	270	270	270	0.00000	4,761.44	-0.00473	-0.001	0.00096	-0.01077	-0.5418
5-Jun-15	270	270	270	0.00000	4,784.07	0.00215	0.00168	-0.00168	-0.01174	-0.5903
4-Jun-15	270	270	270	-0.01460	4,773.79	-0.00349	-0.0005	-0.01411	-0.01005	-0.5056
3-Jun-15	274	274	274	0.00000	4,790.50	-0.00543	-0.0012	0.00123	0.00406	0.20425
2-Jun-15	274	274	274	0.00000	4,816.66	0.00625	0.00326	-0.00326	0.00283	0.14222
29-May-15	274	274	274	0.00000	4,786.74	-0.00398	-0.0007	0.00068	0.00609	0.30616
28-May-15	274	274	274	0.00000	4,805.89	-0.00617	-0.0015	0.00152	0.00541	0.27212
27-May-15	274	274	274	0.00000	4,835.75	-0.00364	-0.0005	0.00055	0.00389	0.1957
26-May-15	274	274	274	0.00000	4,853.44	-0.00106	0.00045	-0.00045	0.00334	0.16823
25-May-15	274	274	274	0.00000	4,858.61	-0.00437	-0.0008	0.00083	0.00379	0.19068
22-May-15	274	274	274	0.00000	4,879.95	-0.00993	-0.003	0.00296	0.00296	0.14912

Kapchorua Tea

Date	Open	Close	Price	R	NSE 20 INDl	MR	(E)R	AR	CAR	AR t-test
6-Jul-15	159	159	159	0.00000	4,814.11	0.00032	0.001754	-0.00175	0.20898	8.241034
3-Jul-15	159	159	159	0.00000	4,812.57	-0.00559	-0.00711	0.00711	0.21073	8.310203
2-Jul-15	159	159	159	0.09655	4,839.60	-0.00387	-0.00454	0.10109	0.20362	8.02973
1-Jul-15	145	145	145	-0.06452	4,858.42	-0.00971	-0.01331	-0.05121	0.10252	4.043046
30-Jun-15	155	155	155	0.00000	4,906.07	0.01416	0.022531	-0.02253	0.15373	6.062412
29-Jun-15	155	155	155	0.00000	4,837.58	0.00566	0.00977	-0.00977	0.17626	6.950918
26-Jun-15	155	155	155	0.00000	4,810.36	0.00242	0.004912	-0.00491	0.18603	7.336185
25-Jun-15	155	155	155	0.06897	4,798.73	0.00103	0.002827	0.06614	0.19094	7.529905
24-Jun-15	145	145	145	0.03571	4,793.77	0.00365	0.006749	0.02896	0.12480	4.921714
23-Jun-15	140	140	140	0.00000	4,776.35	-0.00086	-2.4E-05	0.00002	0.09584	3.779478
22-Jun-15	140	140	140	0.00000	4,780.48	0.00039	0.001855	-0.00185	0.09582	3.778547
19-Jun-15	140	140	140	0.00000	4,778.63	-0.00368	-0.00425	0.00425	0.09767	3.851692
18-Jun-15	140	140	140	0.00000	4,796.26	0.00122	0.003104	-0.00310	0.09343	3.684273
17-Jun-15	140	140	140	0.00000	4,790.42	0.00360	0.006681	-0.00668	0.09653	3.806678
16-Jun-15	140	140	140	0.07692	4,773.23	0.00287	0.00558	0.07134	0.10321	4.070134
15-Jun-15	130	130	130	0.00000	4,759.58	-0.00114	-0.00044	0.00044	0.03187	1.256678
12-Jun-15	130	130	130	0.00000	4,765.02	0.00423	0.007624	-0.00762	0.03143	1.239304
11-Jun-15	130	130	130	0.00000	4,744.95	0.00006	0.001365	-0.00137	0.03905	1.539969
10-Jun-15	130	130	130	0.00000	4,744.66	-0.00016	0.001033	-0.00103	0.04042	1.59381
9-Jun-15	130	130	130	0.00000	4,745.42	-0.00336	-0.00378	0.00378	0.04145	1.63455
8-Jun-15	130	130	130	0.00000	4,761.44	-0.00473	-0.00583	0.00583	0.03767	1.48556
5-Jun-15	130	130	130	0.00000	4,784.07	0.00215	0.004507	-0.00451	0.03184	1.255705
4-Jun-15	130	130	130	0.00000	4,773.79	-0.00349	-0.00396	0.00396	0.03635	1.433431
3-Jun-15	130	130	130	0.00000	4,790.50	-0.00543	-0.00688	0.00688	0.03239	1.277121
2-Jun-15	130	130	130	0.00000	4,816.66	0.00625	0.010658	-0.01066	0.02550	1.005768
29-May-15	130	130	130	0.00000	4,786.74	-0.00398	-0.00471	0.00471	0.03616	1.426086
28-May-15	130	130	130	0.00000	4,805.89	-0.00617	-0.008	0.00800	0.03145	1.240376
27-May-15	130	130	130	0.00000	4,835.75	-0.00364	-0.0042	0.00420	0.02346	0.924989
26-May-15	130	130	130	0.00000	4,853.44	-0.00106	-0.00032	0.00032	0.01926	0.759402
25-May-15	130	130	130	0.00000	4,858.61	-0.00437	-0.00529	0.00529	0.01893	0.74662
22-May-15	130	130	130	0.00000	4,879.95	-0.00993	-0.01364	0.01364	0.01364	0.53792

Diamond Trust

Date	Open	Close	Price	R	NSE 20 IN	MR	(E)R	AR	CAR	AR t-test
8-Apr-16	210	210	210	0.00000	3,999.33	-0.01356	0.00485	-0.00485	0.05995	2.14348
7-Apr-16	210	210	210	0.00000	4,054.29	0.00603	-0.0019	0.00192	0.06479	2.31676
6-Apr-16	210	210	210	0.00000	4,030.00	0.00333	-0.001	0.00099	0.06287	2.24795
5-Apr-16	210	210	210	-0.00709	4,016.64	0.00203	-0.0005	-0.00655	0.06188	2.21252
4-Apr-16	210	213	211.5	-0.01168	4,008.50	0.00303	-0.0009	-0.01079	0.06843	2.44671
1-Apr-16	214	214	214	-0.00465	3,996.38	0.00359	-0.0011	-0.00357	0.07922	2.83264
31-Mar-16	215	215	215	0.00703	3,982.09	0.00019	9.3E-05	0.00693	0.08279	2.96029
30-Mar-16	212	215	213.5	0.00708	3,981.33	-0.00356	0.00139	0.00568	0.07586	2.71241
29-Mar-16	212	212	212	0.00952	3,995.56	-0.00145	0.00066	0.00886	0.07017	2.50913
24-Mar-16	210	210	210	-0.00474	4,001.36	0.00236	-0.0007	-0.00408	0.06131	2.1922
23-Mar-16	210	212	211	0.00000	3,991.95	0.00882	-0.0029	0.00289	0.06539	2.33822
22-Mar-16	211	211	211	0.00000	3,957.06	0.00478	-0.0015	0.00149	0.06250	2.23492
21-Mar-16	211	211	211	0.00238	3,938.22	-0.00202	0.00086	0.00152	0.06101	2.18147
18-Mar-16	210	211	210.5	-0.02093	3,946.19	0.00472	-0.0015	-0.01946	0.05949	2.1272
17-Mar-16	215	215	215	-0.02715	3,927.65	0.00061	-5E-05	-0.02710	0.07895	2.82295
16-Mar-16	221	221	221	0.00000	3,925.25	0.00106	-0.0002	0.00021	0.10604	3.79188
15-Mar-16	221	221	221	0.00913	3,921.10	-0.00810	0.00296	0.00617	0.10584	3.78449
14-Mar-16	215	223	219	-0.00455	3,953.13	-0.00144	0.00066	-0.00520	0.09967	3.56381
11-Mar-16	220	220	220	0.03774	3,958.82	0.00228	-0.0006	0.03836	0.10487	3.74981
10-Mar-16	212	212	212	0.00474	3,949.82	-0.00040	0.0003	0.00444	0.06650	2.378
9-Mar-16	211	211	211	0.02427	3,951.42	0.00253	-0.0007	0.02499	0.06206	2.21924
8-Mar-16	206	206	206	0.00000	3,941.46	-0.00971	0.00352	-0.00352	0.03708	1.3258
7-Mar-16	206	206	206	-0.01671	3,980.09	-0.00035	0.00028	-0.01699	0.04059	1.45148
4-Mar-16	209	210	209.5	0.00721	3,981.47	0.01246	-0.0041	0.01136	0.05758	2.05885
3-Mar-16	207	209	208	0.00971	3,932.48	-0.00010	0.00019	0.00952	0.04622	1.65266
2-Mar-16	205	207	206	0.00488	3,932.86	0.01258	-0.0042	0.00907	0.03670	1.3124
1-Mar-16	205	205	205	0.01990	3,884.01	0.00564	-0.0018	0.02169	0.02764	0.98818
29-Feb-16	201	201	201	0.00000	3,862.24	-0.00242	0.001	-0.00100	0.00595	0.2126
26-Feb-16	201	201	201	0.00000	3,871.62	0.00118	-0.0002	0.00025	0.00694	0.24825
25-Feb-16	201	201	201	0.00249	3,867.06	0.00419	-0.0013	0.00378	0.00669	0.23937
24-Feb-16	201	200	200.5	0.00250	3,850.93	0.00165	-0.0004	0.00291	0.00291	0.10412

NSE

Date	Open	Close	Price	R	NSE 20 IN	MR	(E)R	AR	CAR	AR t-test
18-Apr-16	28	27.5	27.75	-0.02203	3,929.51	0.00243	0.00042	-0.02245	0.27127	19.794
15-Apr-16	29	27.75	28.375	0.01339	3,920.00	0.00475	0.00232	0.01107	0.29371	21.432
14-Apr-16	27.5	28.5	28	0.00901	3,901.45	-0.00205	-0.0032	0.01224	0.28264	20.624
13-Apr-16	28	27.5	27.75	-0.01333	3,909.47	-0.00404	-0.0049	-0.00848	0.27040	19.7308
12-Apr-16	27.25	29	28.125	0.04167	3,925.32	-0.00840	-0.0084	0.05008	0.27888	20.3497
11-Apr-16	26.75	27.25	27	0.01408	3,958.57	-0.01019	-0.0099	0.02396	0.22881	16.6957
8-Apr-16	26.5	26.75	26.625	-0.01389	3,999.33	-0.01356	-0.0126	-0.00127	0.20485	14.9477
7-Apr-16	26.75	27.25	27	0.00465	4,054.29	0.00603	0.00336	0.00129	0.20612	15.0406
6-Apr-16	27	26.75	26.875	-0.00922	4,030.00	0.00333	0.00115	-0.01037	0.20483	14.9462
5-Apr-16	27.25	27	27.125	-0.01364	4,016.64	0.00203	9.8E-05	-0.01373	0.21520	15.703
4-Apr-16	28	27	27.5	-0.00901	4,008.50	0.00303	0.00092	-0.00992	0.22894	16.7052
1-Apr-16	27.5	28	27.75	0.03256	3,996.38	0.00359	0.00137	0.03119	0.23886	17.4293
31-Mar-16	27.5	26.25	26.875	-0.06926	3,982.09	0.00019	-0.0014	-0.06786	0.20767	15.1535
30-Mar-16	30.25	27.5	28.875	0.05000	3,981.33	-0.00356	-0.0045	0.05446	0.27553	20.1052
29-Mar-16	27.5	27.5	27.5	0.09453	3,995.56	-0.00145	-0.0027	0.09727	0.22107	16.1311
24-Mar-16	24.5	25.75	25.125	0.05789	4,001.36	0.00236	0.00036	0.05753	0.12380	9.03361
23-Mar-16	23.5	24	23.75	0.00000	3,991.95	0.00882	0.00563	-0.00563	0.06627	4.83569
22-Mar-16	23.25	24.25	23.75	0.00529	3,957.06	0.00478	0.00234	0.00295	0.07190	5.24675
21-Mar-16	23.75	23.5	23.625	0.00000	3,938.22	-0.00202	-0.0032	0.00321	0.06896	5.03168
18-Mar-16	23.5	23.75	23.625	-0.00526	3,946.19	0.00472	0.00229	-0.00755	0.06575	4.79776
17-Mar-16	24	23.5	23.75	0.02703	3,927.65	0.00061	-0.0011	0.02809	0.07331	5.34904
16-Mar-16	22.75	23.5	23.125	0.01093	3,925.25	0.00106	-0.0007	0.01162	0.04522	3.29959
15-Mar-16	23	22.75	22.875	-0.01081	3,921.10	-0.00810	-0.0082	-0.00264	0.03360	2.4514
14-Mar-16	23	23.25	23.125	-0.00538	3,953.13	-0.00144	-0.0027	-0.00265	0.03624	2.64431
11-Mar-16	23	23.5	23.25	-0.00535	3,958.82	0.00228	0.0003	-0.00565	0.03888	2.83736
10-Mar-16	23.25	23.5	23.375	0.01081	3,949.82	-0.00040	-0.0019	0.01270	0.04453	3.24947
9-Mar-16	22.75	23.5	23.125	0.00543	3,951.42	0.00253	0.0005	0.00493	0.03183	2.3228
8-Mar-16	23	23	23	0.01099	3,941.46	-0.00971	-0.0095	0.02046	0.02690	1.96292
7-Mar-16	22.5	23	22.75	-0.01622	3,980.09	-0.00035	-0.0018	-0.01438	0.00644	0.4697
4-Mar-16	22.75	23.5	23.125	0.02778	3,981.47	0.01246	0.0086	0.01917	0.02081	1.51863
3-Mar-16	22.5	22.5	22.5	0.00000	3,932.48	-0.00010	-0.0016	0.00164	0.00164	0.11946

Jubilee Holdings

Date	Open	Close	Price	R	NSE 20 IN	MR	(E)R	AR	CAR	AR t-test
19-Apr-17	467	467	467	-0.00638	3,129.78	0.00899	0.000903	-0.00729	-0.03903	-1.55126
18-Apr-17	470	470	470	0.00427	3,101.89	-0.00026	0.00025	0.00402	-0.03174	-1.26167
13-Apr-17	468	468	468	0.00000	3,102.71	-0.00227	0.000108	-0.00011	-0.03577	-1.42159
12-Apr-17	468	468	468	-0.00107	3,109.78	0.00172	0.00039	-0.00146	-0.03566	-1.41728
11-Apr-17	470	467	468.5	-0.04388	3,104.43	0.00382	0.000538	-0.04442	-0.03420	-1.35935
10-Apr-17	490	490	490	0.00000	3,092.61	-0.00396	-1E-05	0.00001	0.01022	0.406089
7-Apr-17	490	490	490	0.00000	3,104.89	0.00119	0.000353	-0.00035	0.01021	0.405683
6-Apr-17	490	490	490	0.00000	3,101.19	0.00002	0.00027	-0.00027	0.01056	0.419713
5-Apr-17	490	490	490	0.00000	3,101.12	0.00138	0.000366	-0.00037	0.01083	0.430454
4-Apr-17	490	490	490	0.00204	3,096.83	-0.00302	5.58E-05	0.00199	0.01120	0.445015
3-Apr-17	489	489	489	0.00000	3,106.21	-0.00203	0.000126	-0.00013	0.00921	0.365948
31-Mar-17	490	488	489	-0.02200	3,112.52	-0.00320	4.32E-05	-0.02204	0.00933	0.370952
30-Mar-17	500	500	500	0.01626	3,122.51	-0.00190	0.000135	0.01613	0.03138	1.247124
29-Mar-17	492	492	492	-0.00203	3,128.44	0.00625	0.000709	-0.00274	0.01525	0.606185
28-Mar-17	491	495	493	0.04228	3,109.01	0.00350	0.000516	0.04177	0.01799	0.715005
27-Mar-17	473	473	473	-0.01046	3,098.16	0.00661	0.000735	-0.01119	-0.02378	-0.94518
24-Mar-17	478	478	478	0.09885	3,077.81	-0.00163	0.000154	0.09870	-0.01258	-0.5002
23-Mar-17	435	435	435	-0.04918	3,082.85	0.01504	0.001329	-0.05051	-0.11128	-4.42321
22-Mar-17	480	435	457.5	0.01667	3,037.16	0.00973	0.000955	0.01571	-0.06077	-2.41555
21-Mar-17	450	450	450	0.00000	3,007.90	0.00575	0.000674	-0.00067	-0.07648	-3.04008
20-Mar-17	450	450	450	-0.07216	2,990.70	0.00235	0.000435	-0.07260	-0.07581	-3.01327
17-Mar-17	485	485	485	0.00000	2,983.68	0.00619	0.000705	-0.00071	-0.00321	-0.12759
16-Mar-17	485	485	485	0.00000	2,965.31	-0.00191	0.000134	-0.00013	-0.00250	-0.09955
15-Mar-17	485	485	485	0.00000	2,970.98	-0.00102	0.000197	-0.00020	-0.00237	-0.09422
14-Mar-17	485	485	485	0.00000	2,974.01	0.00117	0.000351	-0.00035	-0.00217	-0.08639
13-Mar-17	485	485	485	0.00000	2,970.53	0.00251	0.000446	-0.00045	-0.00182	-0.07242
10-Mar-17	485	485	485	0.00000	2,963.08	0.00404	0.000554	-0.00055	-0.00138	-0.0547
9-Mar-17	485	485	485	0.00000	2,951.15	0.00109	0.000346	-0.00035	-0.00082	-0.03269
8-Mar-17	485	485	485	0.00000	2,947.93	-0.00527	-0.0001	0.00010	-0.00048	-0.01895
7-Mar-17	485	485	485	0.00000	2,963.56	0.00018	0.000282	-0.00028	-0.00058	-0.02304
6-Mar-17	485	485	485	0.00000	2,963.01	0.00042	0.000298	-0.00030	-0.00030	-0.01185

Coop Bank

Date	Open	Close	Price	R	NSE 20 IN	MR	(E)R	AR	CAR	AR t-test
7-Apr-17	14	14	14	0.00358	3,104.89	0.00119	-0.0005	0.00411	0.15918	8.13331
6-Apr-17	14	13.9	13.95	-0.01933	3,101.19	0.00002	-0.0012	-0.01809	0.15507	7.92354
5-Apr-17	14.45	14	14.225	0.01607	3,101.12	0.00138	-0.0004	0.01648	0.17316	8.84805
4-Apr-17	14	14	14	0.00179	3,096.83	-0.00302	-0.0031	0.00489	0.15669	8.00616
3-Apr-17	13.95	14	13.975	-0.00179	3,106.21	-0.00203	-0.0025	0.00070	0.15180	7.75643
31-Mar-17	14	14	14	0.00539	3,112.52	-0.00320	-0.0032	0.00859	0.15109	7.72042
30-Mar-17	13.9	13.95	13.925	0.00906	3,122.51	-0.00190	-0.0024	0.01147	0.14250	7.28131
29-Mar-17	13.7	13.9	13.8	0.00546	3,128.44	0.00625	0.00257	0.00289	0.13103	6.6953
28-Mar-17	13.7	13.75	13.725	-0.00903	3,109.01	0.00350	0.00089	-0.00991	0.12814	6.54739
27-Mar-17	13.95	13.75	13.85	-0.01947	3,098.16	0.00661	0.00279	-0.02226	0.13805	7.05399
24-Mar-17	14.35	13.9	14.125	0.00534	3,077.81	-0.00163	-0.0022	0.00759	0.16031	8.19133
23-Mar-17	14.1	14	14.05	-0.01404	3,082.85	0.01504	0.00795	-0.02198	0.15272	7.80363
22-Mar-17	14.45	14.05	14.25	-0.01893	3,037.16	0.00973	0.0047	-0.02363	0.17470	8.92679
21-Mar-17	14.55	14.5	14.525	0.01930	3,007.90	0.00575	0.00227	0.01703	0.19833	10.1341
20-Mar-17	14	14.5	14.25	0.05360	2,990.70	0.00235	0.00019	0.05342	0.18130	9.26384
17-Mar-17	13.05	14	13.525	0.04642	2,983.68	0.00619	0.00253	0.04389	0.12788	6.5344
16-Mar-17	12.85	13	12.925	0.00584	2,965.31	-0.00191	-0.0024	0.00825	0.08400	4.29193
15-Mar-17	12.85	12.85	12.85	0.00587	2,970.98	-0.00102	-0.0019	0.00774	0.07574	3.87015
14-Mar-17	12.7	12.85	12.775	-0.00195	2,974.01	0.00117	-0.0005	-0.00142	0.06800	3.47442
13-Mar-17	13	12.6	12.8	0.01992	2,970.53	0.00251	0.00028	0.01964	0.06942	3.54687
10-Mar-17	12.55	12.55	12.55	0.00000	2,963.08	0.00404	0.00122	-0.00122	0.04978	2.54357
9-Mar-17	12.6	12.5	12.55	0.00400	2,951.15	0.00109	-0.0006	0.00458	0.05100	2.60591
8-Mar-17	12.4	12.6	12.5	0.00604	2,947.93	-0.00527	-0.0045	0.01051	0.04642	2.37168
7-Mar-17	12.45	12.4	12.425	0.00000	2,963.56	0.00018	-0.0011	0.00114	0.03590	1.83456
6-Mar-17	12.5	12.35	12.425	-0.00996	2,963.01	0.00042	-0.001	-0.00896	0.03476	1.77631
3-Mar-17	12.6	12.5	12.55	-0.00199	2,961.78	-0.00247	-0.0028	0.00077	0.04373	2.2343
2-Mar-17	12.65	12.5	12.575	-0.00198	2,969.12	0.00100	-0.0006	-0.00134	0.04295	2.1947
1-Mar-17	12.5	12.7	12.6	-0.00787	2,966.16	-0.00947	-0.007	-0.00083	0.04429	2.26328
28-Feb-17	12.7	12.7	12.7	0.02213	2,994.53	-0.01279	-0.0091	0.03121	0.04512	2.30571
27-Feb-17	12.5	12.35	12.425	0.00404	3,033.33	0.00339	0.00082	0.00322	0.01392	0.7112
24-Feb-17	12.25	12.5	12.375	0.01227	3,023.07	0.00461	0.00157	0.01070	0.01070	0.54677

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Flame Tree Group

Date	Open	Close	Price	R	NSE 20 IN	MR	(E)R	AR	CAR	AR t-test
23-May-17	5.45	5.45	5.45	0.01395	3,317.16	0.00637	0.00037	0.01358	0.04325	0.94108
22-May-17	5.45	5.3	5.375	0.00000	3,296.16	0.00325	0.00141	-0.00141	0.02968	0.64564
19-May-17	5.45	5.3	5.375	0.04369	3,285.49	0.01258	-0.0017	0.04536	0.03108	0.67621
18-May-17	5.15	5.15	5.15	0.01478	3,244.69	0.00566	0.00061	0.01417	-0.01428	-0.3107
17-May-17	5.05	5.1	5.075	0.00495	3,226.43	0.00163	0.00194	0.00301	-0.02845	-0.619
16-May-17	5.05	5.05	5.05	0.01508	3,221.19	-0.00251	0.00331	0.01177	-0.03146	-0.6845
15-May-17	4.95	5	4.975	-0.00500	3,229.30	-0.00475	0.00404	-0.00904	-0.04323	-0.9406
12-May-17	5	5	5	0.00000	3,244.72	0.01534	-0.0026	0.00259	-0.03419	-0.7438
11-May-17	5	5	5	0.00503	3,195.70	0.00639	0.00037	0.00466	-0.03677	-0.8001
10-May-17	4.95	5	4.975	-0.00500	3,175.41	0.01073	-0.0011	-0.00393	-0.04143	-0.9014
9-May-17	5	5	5	0.03093	3,141.69	-0.00402	0.0038	0.02712	-0.03750	-0.8158
8-May-17	4.85	4.85	4.85	-0.03000	3,154.38	0.00233	0.00171	-0.03171	-0.06462	-1.4059
5-May-17	5	5	5	0.04167	3,147.04	0.00085	0.0022	0.03947	-0.03291	-0.7161
3-May-17	4.8	4.8	4.8	-0.04000	3,144.38	0.00327	0.0014	-0.04140	-0.07238	-1.5748
2-May-17	5	5	5	0.00000	3,134.15	-0.00155	0.00299	-0.00299	-0.03098	-0.6741
28-Apr-17	5	5	5	0.00000	3,139.03	-0.00581	0.00439	-0.00439	-0.02799	-0.6091
27-Apr-17	5	5	5	0.06383	3,157.38	-0.00221	0.0032	0.06062	-0.02360	-0.5134
26-Apr-17	4.7	4.7	4.7	-0.02083	3,164.36	0.00063	0.00227	-0.02310	-0.08422	-1.8324
25-Apr-17	4.65	4.95	4.8	-0.04000	3,162.37	0.00796	-0.0001	-0.03985	-0.06112	-1.3298
24-Apr-17	5	5	5	0.03627	3,137.41	-0.00183	0.00308	0.03319	-0.02127	-0.4628
21-Apr-17	5	4.65	4.825	0.04891	3,143.15	0.00462	0.00095	0.04796	-0.05446	-1.1849
20-Apr-17	4.6	4.6	4.6	0.00000	3,128.69	-0.00655	0.00464	-0.00464	-0.10242	-2.2284
19-Apr-17	4.6	4.6	4.6	0.00000	3,149.33	0.00625	0.00041	-0.00041	-0.09778	-2.1275
18-Apr-17	4.6	4.6	4.6	0.01099	3,129.78	0.00899	-0.0005	0.01148	-0.09737	-2.1184
13-Apr-17	4.55	4.55	4.55	-0.05699	3,101.89	-0.00026	0.00256	-0.05956	-0.10885	-2.3682
12-Apr-17	5	4.65	4.825	0.00000	3,102.71	-0.00227	0.00323	-0.00323	-0.04929	-1.0724
11-Apr-17	4.6	5.05	4.825	-0.03500	3,109.78	0.00172	0.00191	-0.03691	-0.04606	-1.0022
10-Apr-17	5	5	5	0.00000	3,104.43	0.00382	0.00121	-0.00121	-0.00916	-0.1992
7-Apr-17	5	5	5	-0.01961	3,092.61	-0.00396	0.00378	-0.02339	-0.00794	-0.1728
6-Apr-17	5.1	5.1	5.1	0.02000	3,104.89	0.00119	0.00208	0.01792	0.01545	0.33611
5-Apr-17	5	5	5	0.00000	3,101.19	0.00002	0.00247	-0.00247	-0.00247	-0.0537

NIC Bank

Date	Open	Close	Price	R	NSE 20 IND	MR	(E)R	AR	CAR	AR t-test
16-Apr-18	44.25	44	44.125	0.00000	3,801.65	-0.00094	-0.0005	0.00054	0.18280	10.9535
13-Apr-18	44	44.25	44.125	0.00000	3,805.23	-0.00393	-0.0033	0.00329	0.18227	10.9214
12-Apr-18	43.75	44.5	44.125	0.02915	3,820.26	-0.00279	-0.0022	0.03139	0.17898	10.7244
11-Apr-18	42	43.75	42.875	0.02083	3,830.94	0.00364	0.00368	0.01716	0.14759	8.84342
10-Apr-18	41.5	42.5	42	0.01511	3,817.04	0.00189	0.00206	0.01304	0.13043	7.81543
9-Apr-18	41.25	41.5	41.375	0.00000	3,809.86	-0.00287	-0.0023	0.00231	0.11739	7.03394
6-Apr-18	41	41.75	41.375	0.01223	3,820.81	-0.00409	-0.0034	0.01566	0.11508	6.89567
5-Apr-18	41	40.75	40.875	-0.00608	3,836.49	0.00410	0.0041	-0.01017	0.09942	5.95715
4-Apr-18	41.25	41	41.125	-0.00604	3,820.84	-0.00294	-0.0024	-0.00366	0.10959	6.56681
3-Apr-18	41.5	41.25	41.375	0.00000	3,832.12	-0.00344	-0.0028	0.00283	0.11326	6.78636
29-Mar-18	41.5	41.25	41.375	-0.00898	3,845.34	0.00754	0.00726	-0.01625	0.11042	6.61661
28-Mar-18	42	41.5	41.75	0.00300	3,816.56	-0.00146	-0.001	0.00401	0.12667	7.59007
27-Mar-18	41.75	41.5	41.625	0.00301	3,822.12	-0.00236	-0.0018	0.00485	0.12266	7.34961
26-Mar-18	41.5	41.5	41.5	0.00912	3,831.16	-0.00416	-0.0035	0.01262	0.11780	7.05877
23-Mar-18	40.75	41.5	41.125	0.02174	3,847.18	-0.00109	-0.0007	0.02241	0.10518	6.30262
22-Mar-18	39.75	40.75	40.25	0.05574	3,851.37	-0.00282	-0.0023	0.05800	0.08277	4.9598
21-Mar-18	37.25	39	38.125	-0.03481	3,862.27	0.00304	0.00313	-0.03794	0.02477	1.48428
20-Mar-18	40	39	39.5	0.01608	3,850.56	0.00273	0.00284	0.01324	0.06271	3.75734
19-Mar-18	38	39.75	38.875	0.03322	3,840.08	0.01007	0.00959	0.02363	0.04947	2.96401
16-Mar-18	37.25	38	37.625	0.02034	3,801.79	0.00917	0.00877	0.01157	0.02584	1.54804
15-Mar-18	37	36.75	36.875	-0.01338	3,767.23	0.00169	0.00188	-0.01526	0.01426	0.85455
14-Mar-18	37.5	37.25	37.375	-0.00993	3,760.87	0.00419	0.00419	-0.01412	0.02952	1.76894
13-Mar-18	37.75	37.75	37.75	-0.00658	3,745.16	0.00529	0.0052	-0.01178	0.04364	2.61497
12-Mar-18	38	38	38	0.00330	3,725.44	0.00141	0.00162	0.00168	0.05542	3.32057
9-Mar-18	38	37.75	37.875	-0.00329	3,720.21	0.00009	0.00041	-0.00370	0.05374	3.22006
8-Mar-18	38.5	37.5	38	0.00662	3,719.86	-0.00564	-0.0049	0.01148	0.05744	3.44196
7-Mar-18	37.5	38	37.75	0.01342	3,740.97	0.00134	0.00156	0.01186	0.04596	2.75395
6-Mar-18	37	37.5	37.25	0.01017	3,735.95	0.00247	0.0026	0.00757	0.03410	2.04331
5-Mar-18	37	36.75	36.875	-0.01007	3,726.74	-0.00778	-0.0068	-0.00324	0.02653	1.58987
2-Mar-18	37.5	37	37.25	-0.01325	3,755.95	-0.00479	-0.0041	-0.00917	0.02978	1.7842
1-Mar-18	38.25	37.25	37.75	0.04498	3,774.04	0.00621	0.00604	0.03894	0.03894	2.33343

Housing Finance

Date	Open	Close	Price	R	NSE 20 INDE	MR	(E)R	AR	CAR	AR t-test
23-Apr-18	11.85	11.8	11.825	-0.01867	3,716.36	0.00163	0.00125	-0.01993	0.19077	10.1872
20-Apr-18	12.2	11.9	12.05	0.00417	3,710.32	-0.00466	-0.0071	0.01122	0.21070	11.2513
19-Apr-18	12	12	12	-0.01031	3,727.69	-0.00463	-0.007	-0.00330	0.19948	10.652
18-Apr-18	12.15	12.1	12.125	-0.01623	3,745.01	-0.00687	-0.01	-0.00625	0.20277	10.8281
17-Apr-18	12.5	12.15	12.325	-0.00202	3,770.92	-0.00808	-0.0116	0.00955	0.20902	11.1618
16-Apr-18	12.2	12.5	12.35	0.01230	3,801.65	-0.00094	-0.0021	0.01444	0.19947	10.6516
13-Apr-18	11.9	12.5	12.2	0.02954	3,805.23	-0.00393	-0.0061	0.03563	0.18503	9.88067
12-Apr-18	11.8	11.9	11.85	0.00424	3,820.26	-0.00279	-0.0046	0.00882	0.14940	7.97794
11-Apr-18	11.8	11.8	11.8	-0.00211	3,830.94	0.00364	0.00391	-0.00602	0.14058	7.50685
10-Apr-18	11.85	11.8	11.825	-0.00630	3,817.04	0.00189	0.00159	-0.00789	0.14660	7.82858
9-Apr-18	12	11.8	11.9	0.01062	3,809.86	-0.00287	-0.0047	0.01530	0.15450	8.25017
6-Apr-18	11.75	11.8	11.775	0.00000	3,820.81	-0.00409	-0.0063	0.00630	0.13920	7.43301
5-Apr-18	11.8	11.75	11.775	-0.00212	3,836.49	0.00410	0.00451	-0.00663	0.13290	7.09659
4-Apr-18	11.8	11.8	11.8	0.00855	3,820.84	-0.00294	-0.0048	0.01334	0.13953	7.45066
3-Apr-18	11.6	11.8	11.7	0.00429	3,832.12	-0.00344	-0.0054	0.00973	0.12619	6.73856
29-Mar-18	11.6	11.7	11.65	0.09133	3,845.34	0.00754	0.00906	0.08227	0.11646	6.2188
28-Mar-18	10.6	10.75	10.675	-0.00234	3,816.56	-0.00146	-0.0028	0.00049	0.03419	1.82552
27-Mar-18	10.7	10.7	10.7	-0.00696	3,822.12	-0.00236	-0.004	-0.00294	0.03370	1.79956
26-Mar-18	10.8	10.75	10.775	-0.00231	3,831.16	-0.00416	-0.0064	0.00409	0.03664	1.9567
23-Mar-18	10.8	10.8	10.8	0.00000	3,847.18	-0.00109	-0.0023	0.00234	0.03256	1.73849
22-Mar-18	10.8	10.8	10.8	0.00232	3,851.37	-0.00282	-0.0046	0.00695	0.03022	1.61375
21-Mar-18	10.75	10.8	10.775	-0.00231	3,862.27	0.00304	0.00312	-0.00543	0.02327	1.24282
20-Mar-18	10.8	10.8	10.8	0.00000	3,850.56	0.00273	0.0027	-0.00270	0.02871	1.5329
19-Mar-18	10.8	10.8	10.8	0.00232	3,840.08	0.01007	0.01241	-0.01009	0.03141	1.67731
16-Mar-18	10.85	10.7	10.775	-0.00691	3,801.79	0.00917	0.01122	-0.01813	0.04150	2.21593
15-Mar-18	10.8	10.9	10.85	0.00463	3,767.23	0.00169	0.00133	0.00330	0.05963	3.1842
14-Mar-18	10.75	10.85	10.8	0.05366	3,760.87	0.00419	0.00464	0.04902	0.05633	3.00813
13-Mar-18	10	10.5	10.25	-0.03981	3,745.16	0.00529	0.00609	-0.04591	0.00731	0.39062
12-Mar-18	10.5	10.85	10.675	0.08651	3,725.44	0.00141	0.00096	0.08555	0.05322	2.842
9-Mar-18	9.15	10.5	9.825	-0.04146	3,720.21	0.00009	-0.0008	-0.04069	-0.03233	-1.7266
8-Mar-18	10.35	10.15	10.25	0.00000	3,719.86	-0.00564	-0.0084	0.00835	0.00835	0.44604