

**THE EFFECTS OF ANNOUNCEMENT OF CAPITAL  
STRUCTURE CHANGES ON STOCK RETURNS AT THE  
NAIROBI SECURITIES EXCHANGE**

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## DECLARATION

I, the undersigned declare that this study is my original work and has not been presented for examination in any other institution or university other than the University of Nairobi.

Signed..... Date .....

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I hereby declare that this study has been submitted for examination with my approval as the University supervisor.

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## **DEDICATION**

To my wife Anne and children: Gitahi, Kirigo, Njeri and Kinuthia.

To my parents Gitahi Ngunjiri and Kirigo Gitahi.

To my siblings; Muthiga, Nyambura, Machira, Wangui, Maranga and Nyaguthii.

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## ABBREVIATIONS

<b>AR</b>	-	Abnormal Returns
<b>CAR</b>	-	Cumulative Abnormal Returns
<b>CS</b>	-	Capital Structure
<b>EABL</b>	-	East Africa Breweries Ltd
<b>EMH</b>	-	Efficient Market Hypothesis
<b>EPS</b>	-	Earnings per share
<b>IPO</b>	-	Initial Public Offerings
<b>KPLC</b>	-	Kenya Power and Lighting Company
<b>NI</b>	-	Net Income
<b>NOI</b>	-	Net Operating Income
<b>NPV</b>	-	Net Present Value
<b>NSE</b>	-	Nairobi Securities Exchange
<b>PE</b>	-	Price Earning
<b>ROE</b>	-	Return on Equity
<b>TV</b>	-	Traditional View
<b>U.S.</b>	-	United States

## ABSTRACT

This study had two objectives. One, to examine how stocks returns for non-financial firms listed at the Nairobi Securities Exchange (NSE) are affected by Capital Structure (CS) changes announcements and two, to examine the efficiency of NSE around CS changes announcements. The study endeavoured to add value to the body of studies that centre on the effects of various announcements on stock returns and be of immense use to various users of such a studies. By its nature, the study adopted the event study design targeting firms which had CS changes announcements from January 2007 to December 2016. The population was all firms listed at the NSE from which a sample of 7 firms was analyzed for rights issue announcements and 4 firms for bond issue announcements. Financial firms were excluded. Secondary data from NSE, Capital Markets Authority (CMA) and other publications like information memorandum was used. The analytical model used was the market model whose constant estimates were derived from stocks returns of an estimation period of 30.days using SPSS software. The NSE 20 Share index was used as for the market return in the analysis which covered an event window of 60 days – 30 days pre-event, 3 days event and 27 days post-event. The Microsoft Excel was used to derive stock and market returns, abnormal returns (AR), cumulative abnormal returns (CAR) for analysis of effect of CS change announcements on stock returns and cumulative aggregate CAR for examination of efficiency of NSE. Though there were AR noted, the significance tests using Z score were statistically insignificant for rights announcements implying rights issue announcements had no effect on stock returns. For bond issue, except for EABL, the AR were statistically insignificant for Kengen, Centum and Safaricom implying bond issue announcements had no effect on stock returns. Like EABL, the bond issue announcement sample had a significance test which showed that bond issue announcements have an effect on stock returns. The market efficiency of NSE was found out to be weak form efficient around CS changes announcements judging from the aggregated CAR curves of both rights issue and bond issue announcements. Bond issue sample study findings collaborate other studies in the in literature review of this study like Menon (2016), Adesina et al. (2015) and Lambe (2014). From significance tests, individual firms analysis fail to support those of the above previous studies. Bond issue announcements AR agree with the findings by Ngure (2014). For rights issue, the findings of this study disagree with those by Kithinji et al. (2014). The study concluded that for all individual firms analyzed, CS change announcements had no effect on stock returns. For the sample analysis, only bond issue analysis held that announcements had an effect on stock returns. In all cases AR were observed. This study recommends that relevant authorities seek ways ensuring that more firms list on the NSE so that in future the scope of further studies will be wider. The study also suggests that further studies should cover firms in other sectors while other statistical methods can be used to examine the efficiency of NSE.

# CHAPTER ONE

## INTRODUCTION

### 1.1 Background of Study

Capital Structure (CS) refers to how a firm's capital mix is formulated; it constitutes of long term sources of funds such as equity, retained earnings and bonds. In their early stages, firms finance their activities from retained earnings. As firm's financial needs increase as a result of growth and existence of positive Net Present Value (NPV) projects, finance managers typically result to external sources of funds, namely debt and equity. Hence, depending on its stage of development and the financing decisions that a firm adopts from time to time, the firm's CS will comprise of one, two or all three source of finance in varying proportions.

Formulating a firm's CS constitutes the financing decision, one of the four decisions a finance manager is tasked with, which requires the finance manager to decide the timing, the sources and method of acquiring funds. Prudent finance managers should develop a firm's appropriate CS, one that confers a firm the greatest advantage, by analyzing and weighing factors pertinent to the firm's CS. Alternatively, finance managers can opt to finance a firm's activities through a pecking order of preference, Myers and Majluf (1984), which is: retained earnings (self-financing), then borrowing (debt financing) and lastly going public (issuing equity).

Theoretically, the finance manager should aim at having a CS that maximizes the value of the firm and hence the shareholders' wealth. This revolves around the weight of leverage (debt) in a firm's capital mix. Hence financing decisions are viewed as either leverage increasing (debt financing) or leverage decreasing (issuing of equity).

### **1.1.1 Announcement of Capital Structure Changes**

Stock returns react to arrival of new information in the financial markets. This is according to the Efficient Market Hypothesis (EMH) which posits that in efficient financial market, stock prices instantaneously and accurately reflect all available information (Fama 1970). The speed and accuracy with which information is reflected in stock prices tells us how efficient the market is.

Financial markets however suffer from inefficiencies and are characterized by informational asymmetry where all information on a given stock is not known to everyone at the same time. Some people will at some time have more information than others. Managers of a firm have more insider information about the firm than the outsiders implying information asymmetry. Ross (1977) came up with CS signaling theory in which he argued that firm managers use CS to inform outsiders about the firm's future profitability and risk. He posited that use of debt in the CS communicates a positive future as opposed to use of equity. Debt also reduces the firm's overall cost of capital which is used to determine the value of the firm by discounting its future stream of cash-flows. A low cost of capital enhances the value of the firm and therefore shareholders' wealth. Bolton and Freixas (2000) in a model paper where equity, debt and bank loan are in equilibrium and under asymmetry of information emphasized that in avoiding the costly bank loans, firms result to bonds which have inefficient liquidation costs and equity which has informational dilution cost. Hence, riskier firms use bank loans while less risky firms use bonds. Firms with moderate riskiness employ bonds and equity. This asserts that announcements of CS changes send a message about the firm to the market which is dependent on whether the change is leverage increasing or leverage decreasing.

Also debt holders and equity holders have their perceptions on what increase or decrease of leverage in the CS imply. One, equity holders who are the owners of a firm would view new equity as a dilution of ownership. Two debt holders enjoy preference over equity holders in sharing a firm's profits since interest paid on debt reduces a firm's profitability which affects earnings per share (EPS). Three, debt sometimes come with restrictive covenants which demand debt holders be represented on a firm's board of directors to ensure that their interests are protected. Projects which the firm's managers view favorably in the interest of equity holders, may be abandoned if the debt holders happen to hold the opinion that such project are risky. This may make equity holders feel as if they have lost control of the firm to 'foreigners'.

Four, fear of bankruptcy proceedings. In the unfortunate event that the firm is unable to deliver on its debt obligations, debt holders may institute bankruptcy proceedings in an attempt to recover their money. Should such proceedings succeed, debt holders enjoy preferential claim on the assets of the firm while equity holders enjoy the residual value.

From the above discussions, it is clear that debt and equity have implications which are of interest to a firm's current and potential investors as well as managers and other stakeholders. As such, financial markets react to announcements of CS changes depending on how these varying interests are affected by the changes and the informational signal about the firm contained in the CS change. This reaction by the market is reflected by how the firm's stock returns behave following the announcement.

### **1.1.2 Stocks Returns**

In the study of financial markets stocks returns are a better yardstick of measuring performance than stock prices. Stock prices are the data. Stocks or securities returns is the measure of how viable a financial investment decision is. Stock returns can be expressed as dollar, simple or log returns.

Stocks returns depend on price changes over the period in which a stock or security is held. When price changes are positive, it leads to capital gains implying that stocks returns are positive and vice-versa. Price changes occur in response to new information such as announcement of CS changes. The nature of the news is inherent in events or happenings such as dividend declarations, CS changes, earnings announcements, mergers and acquisitions and equity issue. Positive news trigger rise in stock prices while negative news trigger a dip in stock prices.

The behavior of stock returns after an event tells us about the efficiency of the market. If the market is efficient, the stock prices are expected to exhibit a 'random walk'. In Random Walk Hypothesis, Bachelier (1900) postulates that stock prices move randomly in an unpredictable manner, likening the movement of stock prices to the steps of a drunkard. Theoretical finance attributes this random movement of stock prices to the unpredictable flow of information or news to which the stock prices respond.

Fama (1965, 1970 and 1991) did considerable and much appreciated studies on EMH. He described an efficient financial market as one in which stock prices are a mirror of all known information regarding the stocks. As such, prices move only in response to

new information since all other information hitherto is already captured in the stock prices. Reilly and Brown (2003) referred such markets as being informationally efficient. This means that efficiency of a market is the speed and accuracy with which information is assimilated and reflected in the stock prices. Additionally, Roberts (1967) came up with three forms of market efficiency: weak form where only historical information is captured in stock prices, semi strong form where all publicly available information captured in stock prices and strong form where both publicly available information plus insider information is captured in stock prices.

### **1.1.3 Effects of Capital Structure on Stock Returns**

Theoretical finance tells us that CS has a bearing on stock returns by the impact it has on the value of the firm. Finance scholars have argued and debated on this subject for many decades now. Notably, Durand (1959) Net Income Approach theory, Modigliani- Miller (1963) CS relevance hypothesis and Solomon (1963) Traditional View theory adduce evidence that CS affects the value of the firm and stock returns. Their arguments center on the advantage of debt in the CS because it is cheap compared to equity hence debt lowers the firm's required rate of return. Debt is also favored because it confers a firm tax shield advantage arising from deductibility of interest expense from a firm's profits.

Driven by these pioneering theories, various studies have been conducted to evaluate the effect of CS on stock returns in different financial markets over time. The general consensus from these studies is that use of debt to finance a firm's activities increases the value of a firm. In Kenya for example, studies related to the effect of CS on stock return at the NSE by Kibet, Soi and Koskei (2013), Mwaura (2014) and Siro (2013)

returned a similar verdict. Other studies from different financial markets, for example Menon (2016), Adesina, Nwidobie and Adesina (2015) and Fenech (2008) also support these findings.

One would expect therefore that announcement of CS changes which increase the debt component will lead to positive stocks returns and vice-versa. Additionally, announcements connote information. Hence the behavior of stock returns following announcement of CS changes is also dependent on how efficient a market is in quickly and accurately embedding information in stock prices. This implies that observing the behavior of stock returns can serve to explain the efficiency of a financial market.

#### **1.1.4 Nairobi Securities Exchange**

The context of this study is the Kenyan capital market, the NSE. Founded in 1954, the NSE has grown to become one of the most active capital markets in Africa and the largest in East and Central Africa. It is established under the Capital Market Act.

Once cleared by the Capital Markets Authorities, firms which want to go public are listed at the NSE. The NSE plays an intermediary role by facilitating the flow of funds from the surplus spending units (investors) to the deficit spending units (firms). The NSE also provides a platform for continuous trading of securities making it possible for long-term investments to be liquidated providing cash for other uses. This also helps to adjust an investment portfolio where certain securities can be liquidated and the proceeds used to buy other preferred securities. The NSE also keeps records on how stocks of listed firms perform on daily basis. It also maintains the Corporate



Action Register where all corporate events are recorded which include corporate announcements.

Securities traded at the NSE include shares and corporate bonds. Government of Kenya bonds are also traded at the NSE since 1997. Shares and Corporate Bonds traded at the NSE are components of a firm's CS. When a firm makes announcements of intention to make CS changes, the effect of the announcement is reflected on the behavior of the returns at the NSE.

Firms listed at the NSE fall under 11 different sectors while two indices are used: the NSE 20 share index which measures the performance of the 20 blue chip firms and the NSE All Share Index (NASI) which measures the overall market performance.

## **1.2 Research Problem**

Firms need capital to finance their activities, spur growth and above all create wealth for the shareholders. For this to happen, firms cannot rely on the limited capacity of self-financing and the need to source for capital externally becomes inevitable. However, the finance managers cannot blindly pick debt or equity financing when plugging their financial deficit, they have to carefully make considerations of their choices meaning that the way a firm mixes its sources of capital is important.

Theoretical finance, as evidenced in the literature review of this study, has made cases for and against the relevance of CS including a proposition on the existence of an optimal CS. Also, there is the Pecking Order Theory which holds that there is an ordered preference of sources of capital. Against this background, the finance

manager faces a challenging task in formulating a CS which servers to satisfy the firm's financial needs while maximizing shareholders wealth (Noreen, 2013).

Activities within the firm also convey messages to the outsider. It has been argued that debt financing sends a positive image about the firm while equity finance denotes a dull future for the firm. It follows therefore that CS changes will be interpreted for the message they have about the firm. As evidenced in the literature review of this study, several studies in different financial markets have been conducted to assess how various activities touching on the CS of a firm; ranging from convertible bonds, rights issue, debt equity swaps, IPO to bonds; affect the performance of the firm.

In Kenya such studies have also been documented. Mukora (2014) found that on dividends announcements, stocks at the NSE exhibited positive returns. Ngure (2014) found that bonds issue had an effect of significant periodic movement in stock prices pre and post bond issue while Nassuna (2013) concluded that government bonds on the NSE are not weak-form efficient. Kanja (2014) studied the effect of IPO on stock returns at the NSE and found results to be model dependent with some sectors showing high initial returns than others. Chemtai, Ayuma and Kibet (2016) studied effects of CS on commercial banks while Mwaura (2014) assessed CS and performance of investments firms. Siro (2013) on the other hand studied CS and financial performance while Kibet, Soi and Kibet (2013) looked at CS and share prices for listed energy firms.

The importance of capital resource and the implications attached to its various components will definitely continue to argue scholars and researchers to initiate

studies geared towards assessing how matters touching on CS affect the firm in one way or another. The scope of such matters is wide and is bound to be affected by passage of time. The studies on the NSE enumerated above are limited to CS and its effect on the performance of the firm. Others touch on specific components of CS on specific sectors only.

This study is founded on the need to explore the implication of CS at the NSE from a different perspective and assess if the findings returned will collaborate or refute findings from previous studies. Unlike the above studies, this study assessed how announcements of CS change affected stock returns at the NSE.

### **1.3 Research Objectives**

This study endeavored to:

Examine how stock returns at NSE respond to CS changes announcements.

Examine the efficiency of the financial market in Kenya around CS changes.

### **1.4 Value of the Study**

It is unavoidable for firms to source for capital externally. Growth and expansion fueled by availability of markets and positive NPV projects will render firms unable to finance their activities using internally generated funds; retained earnings. Ultimately, ambitious firms will result to external sources of capital; debt and equity. As agents, managers should always seek to maximize shareholders wealth. Corollary, when considering where to get external financing, finance managers should be well aware how debt and equity affect the value of the firm and how changes in these

components in the CS affect a firm's stock returns at the NSE. This study has referential value for finance managers.

Debt and equity holders are investors since they expect a return on the funds they have forgone use of. For any transaction that an individual enters into, it is certainly comforting to know that they receive value for what they have paid for. In EMH, the continuous pricing of stocks as new information comes ensures that stocks are fairly priced and that market prices can be trusted. Current and potential investors are happy to know how efficient a market is as this translates to how fairly the stocks they buy are priced. This study is a tool to equip investors with an understanding of how CS is related to returns empowering them to productively critique financing decisions managers want to make. Finally, this study has relied on inferences from prior studies by other scholars and researchers. Equally, this study has findings useful to other scholars and researchers.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

This chapter introduces us to a brief review of CS theories, EMH and empirical studies on effect CS on stock returns.

#### **2.1 Capital Structure Theories**

CS refers to how a firm's capital mix is formulated; it constitutes of long term sources of funds such as equity, retained earnings and bonds. A prudent finance manager should develop an appropriate CS by analyzing and weighing factors pertinent to the firm's CS. An appropriate CS is one that confers a firm the greatest advantage.

Existing CS theories revolve around the effect of leverage on shareholders earnings and risk; leverage increases EPS while at the same time it increases shareholders' financial risk. One important thing is that a firm's CS should uphold the objective of maximizing shareholders wealth.

##### **2.1.1 The Net Income Approach**

The Net Income Approach (NI) is one of the two extreme views advanced by Durand (1959). Under the NI approach, Durand argued that leverage, and hence financing decisions, is an important variable in determining the value of a firm. He held that by increasing the debt component in its CS, a firm can lower the weighted average cost of capital effectively increasing its value.

By assuming that: both cost of equity and cost of debt do not change with changes in leverage, that cost of debt is less than cost of equity and that corporate income taxes

do not exist, Durand showed that use of debt amplifies shareholders' earnings which leads to high equity value and hence high value of a firm. Under NI approach CS matters in determining the value of a firm and therefore firms which adopt leverage increasing CS changes enhance their value.

According to NI approach, firms at the NSE which announce intention to increase their CS debt component are expected to exhibit an increase in the values of their stocks by posting higher returns compared to firms which announce intention to increase their CS equity component.

### **2.1.2 The Net Operation Income Approach**

The Net Income Approach (NOI) is the other extreme view advanced by Durand (1959). In a major shift from the NI approach, Durand argued that changes in CS do not affect the value of a firm. He determined the value of a firm by capitalizing NOI at the firm's overall cost of capital. Unlike in the NI approach, under NOI approach, the firm's overall cost of capital is not dependent on firm's CS but rather on the firm's business risk.

Durand assumed that debt and capital are not considered independently but as one whole when capitalizing the market and that NOI is capitalized using the overall cost of capital. He also assumed that use of cheap debt funds increases shareholders financial risk which increases the cost of equity. The tax advantage of debt is thus eroded by the apparent increase in the cost of equity. Cost of debt was assumed to be constant while corporate income taxes were assumed non-existent.

Under NOI approach CS does not matter in determining the value of a firm hence whether a firm employs debt and equity financing in whichever proportions, the effect on the value of the firm is naught. According to NOI approach therefore, irrespective of the natures of CS change announcement, the value and returns of firms at the NSE should not be affected.

### **2.1.3 The Traditional View**

The Traditional View (TV) fronted by Solomon (1963) is a compromise of NI and NOI approaches. Solomon invoked the existence of an optimum CS, one in which a careful mix of debt and equity capital maximizes the value of a firm by minimizing the weighted average cost of debt. Solomon argued that a firm's cost of capital decreases up-to a certain limit of debt, beyond which increase in debt results in an increase in cost of capital. He identified three stages in cost of capital response to changes in CS: increasing value stage, optimum value stage and declining value stage.

Barges and Alexander (1963) explained that on a weighted basis, the cost of cheap debt and costly equity is less than the cost of equity hence cost of capital declines with leverage. Therefore, according to TV, in CS changes, increase in leverage increases the value of a firm up-to a certain limit of debt. The TV has been faulted on the basis that it contradicts NOI approach, that is, the value of a firm depends on its NOI and its associated risk and not on its capital mix.

The traditional view therefore expects that beyond a certain debt equity ratio, the value and returns of firms listed at the NSE ceases to assume an upward trend and

starts to decline in response to announcements of an intention to increase the debt component of their CS.

#### **2.1.4 The Modigliani – Miller Hypotheses**

Finance scholars and noble laureates, Franco Modigliani and Merton Miller, made their contribution in the discourse of CS by publishing two hypotheses in which they considered: CS without taxes and CS under corporate taxes.

##### **2.1.4.1 Irrelevance of Capital Structure**

In 1958, Modigliani and Miller (M-M) through Propositions I and II advanced the irrelevance of CS hypothesis in which they argued that in the absence of corporate taxes, a firm's value and cost of capital are not affected by changes in CS.

In Proposition I, which supports the NOI approach, M-M argued that the value of a firm is determined by capitalizing its NOI by the cost of capital applicable for its risk class. They showed that the cost of capital is constant, independent of the CS and is equal to the cost of equity. The implication of Proposition I is that two firms with different capital structures but similar in all other aspects should have the same cost of capital and the same value. It follows that should such two firms have different values, arbitrage activities kick in as investors exploit the disparity to make personal leverage out of corporate leverage thereby restoring market equilibrium.

In Proposition II, M-M defined the cost of equity to be equal to the constant average of the cost of capital plus a risk premium, the risk premium being a product of debt equity ratio and the difference between the constant average cost of capital and cost of



debt. The effect is that whereas debt causes an increase in EPS, it also increases the cost of equity. The offsetting of debt advantage by the increase in cost of equity leaves the value of the firm unaffected by changes in the CS. Though not supported in practice, M-M held that the cost of capital remains constant irrespective of the level of debt. They explained that even with increasing cost of debt, the cost of equity increases at a decreasing rate and becomes negative at some point.

The assumptions of M-M capital irrelevance theory make it weak. The existence, in the real world, of corporate taxes, transaction cost and market imperfections may lead to different values between the levered firm and the unlevered firm. Critics have also faulted the assumptions that corporations and individuals enjoy the same cost of credit and that personal leverage can be substituted for corporate leverage. In Kenya, taxes are imposed on earnings both at individual and corporate levels.

#### **2.1.4.2 Relevance of Capital Structure**

In 1963, M-M published their hypothesis on relevance of CS by recognizing that in reality, corporate taxes exist. Since interest paid on debt, unlike dividends paid to shareholder, is tax deductible at the corporate level, M-M argued that the levered firm has a higher value than the unlevered firm and that the value of the firm increases with increase in debt. The value of the levered firm is higher than that of the unlevered firm by a margin equal to the present value of the interest tax shield arising from tax deductibility of interest on debt. The cost of capital  $k_l$  for the levered firm is computed as:  $k_l = k_u (1 - TL)$  where  $k_u$  is the cost of equity,  $T$  is the corporate tax rate and  $L$  is the debt ratio.

The levered firm's cost of capital therefore decreases with debt, the corresponding effect being an increase in its value. The implication of this M-M argument is that a firm can achieve an optimum capital structure by being purely levered. Typically, lenders set debt ceilings for firms hence it is impractical for a firm to be purely levered. M-M offered therefore that a firm should have a target debt ratio which conforms with the lenders demands while enabling the firm to lower its cost of capital and increase its value.

According to M-M Relevance of CS Hypothesis, firms listed at the NSE should experience an increase in value and returns of their stocks by increasing the CS debt component compared to those that increase the equity component of their CS.

## **2.2 The Efficient Market Hypothesis**

EMH is a theory which addresses the informational efficiency of a market. Fama (1970) depicted an efficient market as one which is capable of quickly and accurately incorporating new information in stock prices. Movement in stock prices is random in tandem with the random arrival of new information since all past information is already embedded in the current stock prices. According to Jensen (1978), in an efficient market it is impossible to make profits by trading on information in possession of all market players implying that a market player cannot consistently beat an efficient market and when this happens it is by luck.

Ma (2004) pointed out that if the embedding of information in stock prices is not accurate by either overreacting or underreacting to the new information, the inaccuracy will attract trading for profits bringing prices to equilibrium. Accordingly,

Brealey et al. (2011) argued that efficient markets are created by competition driven by a desire among traders, analysts and investors to identify mispriced securities and exploit the mispricing for profits. The implication of this argument is that the market efficiency is not constant but rather, markets experiences moments of inefficiency which traders, investors and analysts are incessantly keen to identify. Once identified, these inefficiencies are cleared through trading and they disappear almost instantaneously.

Hence efficient markets are self-correcting mechanism courtesy of market forces that come into play to determine prices. The price setting mechanism brings about market equilibrium where profiting from mispriced securities is by a few and is by chance. In most cases, the information payoff as a result of analysis rarely outweighs the cost. Indeed, Fama (1970) demonstrated that EMH is intertwined with the market equilibrium model.

### **2.2.1 Criticisms on Efficient Market Hypothesis**

There are documented studies where the behavior of stock returns is not consistent with EMH. For example, studies by Nicholson (1960) and Ball (1978) have shown that firms with low Price-Earnings (PE) ratio have better returns than firms with high PE; the PE effect. Other studies among them by Keim (1983) and Fama and French (1992) have established that stocks of small firms give better returns than stocks of big firms; the small firm effect.

Studies by Lo and MacKinley (1999) and Lo, Mamaysky and Wang (2000) reveal that markets also tend to overreact or underreact to news where short run serial

correlations are not zero suggesting that stock prices are not random and that technical analysis is important in forecasting stock prices. Other studies have documented January effect and day of the week effect. Keim (1983) and Haugen and Lakonishok (1988) have shown seasonality where the month of January has high returns. Monday has been shown to have high returns compared to other days of the week, French (1980).

These anomalies have been attributed to the irrational behavior of investors advanced by Behavioral Finance (BF) theorists. BF challenges EMH on its assumption that investors are rational and they make sound decisions based on information to determine unbiased estimates of the intrinsic value of a security and to objectively assess risk and returns. BF is a branch of study of financial markets behavior which claims that stock prices are determined by investors' behavioral elements, not by rational thinking. BF theorists like Kahneman and Tversky (1982) argue that investors make irrational decisions as a result of cognitive and emotional biases hence stock prices are not unbiased and fair resulting in differences between the market value and fundamental value of stocks.

But Traditional finance has however sort to redeem its stand on the existence of efficient markets. Makiel (2003) argued that these patterns of anomalies are not robust and dependable in different sample periods holding that capital markets are efficient and unpredictable. Also, studies for example by Fama and French (1988) and have shown that the markets correct these anomalies in coming days proving that markets are efficient.

Assuming that the investor at the NSE is rational and unaffected by irrational behavioral tendencies, the behavior of the returns after announcements of intention to make CS changes can inform us of the efficiency of the NSE. This can be achieved by looking at the returns before and after the announcement and subjecting them to econometric analysis for any correlation in the movement of prices.

### **2.3 Empirical Studies on Effect of Capital Structure on Stock Returns**

Fenech (2008) studied the stock market reaction to Australian convertible debt issues and recorded that there were positive price reactions in response to announcements. Xing (2014) sort to explore the effect of share repurchase announcements on stocks in the U.S. and China and recorded evidence of abnormal positive returns in both short and medium terms for the two markets.

Xing also found evidence of signaling and CS hypotheses. Chen and Shehu (2009) studied reaction of stock price to announcements of CS changes involving issuance of seasoned equity offerings in the U.S. and observed that firms whose debt ratio was closer to industry median experienced less negative stock price reactions compared to those whose debt ratio was far from industry median.

Graham, Hughson and Zender (1999) studied market reaction to equity for debt CS changes and found that the reactions were not related to the marginal tax rate of the firms. This is contrary to the traditional view which holds that the market should react by devaluing the firm by an amount equal to total debt retired multiplied by the its marginal tax rate which represents debt tax shield lost. A study on CS and stock prices

at the Muscat Securities Market by Menon (2016) supported the NI approach that increasing debt increases the value of shares. From Nigeria, Adesina et al. (2015) documented a study on CS and financial performance of quoted banks whose findings were that both debt and equity have significant effect on the performance of the banks. Both equity and debt were found to be responsible for over 87% of variations in the banks' performance. Also from Nigeria, Lambe (2014) gave evidence to effect that financial leverage has a great influence on the value of the firm and discredited the pecking order theory.

On bonds, Ngure (2014) found that bonds issue had an effect of significant periodic movement in stock prices at NSE pre and post bond issue while Nassuna (2013) concluded that government bonds on the NSE are not weak-form efficient since there was serial correlation between past and future bond prices.

Kanja (2014) studied the effect of IPOs on stock returns at the NSE and found short-run over performance and long-run under performance of stock returns following the IPOs. Siro (2013) studied the financial performance of firms listed on the NSE using return on equity (ROE) and debt ratio and concluded that increase in debt leads to a decrease in ROE and that debt financing has a negative cost benefit effect. Kibet et al. (2013) looked at CS and share prices for energy firms listed at the NSE and found that debt has a positive impact on share prices whereas equity has a negative effect on share prices. A study on how rights issue affect share price at the NSE by Kithinji et al. (2014) indicated that there is positive price reaction before and after announcement of rights issue.

## **2.4 Summary of Literature Review**

The literature review on CS theories, EMH and empirical studies on CS and performance of firms is not exhaustive but nonetheless it is sufficient in making it clear that a lot scholarly work has been done in these areas. Given that financial markets are dynamic and coupled with innovations being launched now and then, continued globalization and integration of economic zones among other things, the incentives for continued study in these areas are plentiful. The numerous statistical and sophisticated tools available for studying market behavior also enlarge the limits of study in these areas and how they interact in the financial market arena.

Existing studies on CS lean towards the arguments that debt is advantageous in enhancing the value of the firm. Nonetheless, there are numerous factors that have to be put into consideration when deciding whether a firm will acquire debt or equity financing. In practice therefore, the notion of the existence of an optimal CS may be difficult to achieve. However, there is still substantial evidence that finance managers can maximize the value of a firm by considering the positive implication of debt in a firm's CS.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

This chapter explains how the research objectives outlined in chapter one of this study were achieved. Included in this chapter is an exposition of the Research design, Target population, Data collection, Data analysis and the analytical model used.

#### **3.2 Research Design**

The study was expected to assess how the Kenyan capital market reacts to CS changes and make deductions on its efficiency. The study therefore adopted the event study methodology to analyze if reactions of stock returns at the NSE following announcements of CS changes were statistically significant so as to conclude that CS changes affects stock returns at the NSE.

Event study methodology was chosen for the following reasons. One, this study aimed at establishing the effect of an event which is announcements constituting CS changes on stock returns of firms at the NSE. Previous studies offer a justification for this methodology e.g. Manasseh, Ozuzu and Ogbuabor (2016) study on the effect of bonus issue on returns at the Nigerian stock exchange and Nguthi (2013) on effect of political news on returns at the NSE. Two, it is used for testing semi-strong market efficiency. Dolley (1933) used it first to examine the effect of stock splits on stock returns.



### **3.3 Population and Sample of the Study**

The study targeted companies listed on the NSE. The sample narrowed down to companies that raised capital through secondary offering or rights issue for equity capital or issued bonds for debt capital during the period January 2007 to December 2016 (with the exclusion of financial institutions because of the regulatory environment they operate in). The sample was defined by financing decisions which affect the debt equity ratio of the firm.

### **3.4 Data Collection**

The study employed secondary data from the NSE daily stock prices, NSE handbook, the Corporate Action Register and other relevance publications such as information memorandum for selected companies where applicable. Information on bonds issued was obtained from the Capital Markets Authority.

### **3.5 Data Analysis**

A 60 days event window was used which constituted of 30 days pre-event, 3 days event - herein considered as 1 day before the event date to one date after the event date - and 27 days post-event. An estimation period of 30 days before the event window was allowed. The event date is the announcement of either a rights issue or a bond issue.

#### **3.5.1 Analytical Model**

The study employed the Market Model because it is simple to use compared to Capital Asset Pricing Model, Arbitrage Pricing Model, Constant Mean Return Model and Factor models . The method is also free from the joint hypothesis problem.

Data was analyzed using microsoft excel and the output presented in the form of tables and graphs.

The specified market model is:

$$R_{i,t} = \alpha_i + \beta_i R_{m,t} + \varepsilon_{i,t}$$

where,:

$R_{i,t}$  is the return of security  $i$  at time  $t$ ,

$R_{m,t}$  is the return of an unknown factor which is the market,

$\alpha$  is the intercept term (expected return on the security),

$\varepsilon_{i,t}$  is the random error term and

$\beta$  is the slope of the regression being the systematic risk of shares of the firm.

The application of the event study method was executed as follows:

- (i) Estimating the market model constants from estimation period stock simple returns and market simple returns using SPSS software.
- (ii) Determination of the simple returns for both firm's stock and market over corresponding days of interest.

$$R_i(t) = \frac{P_i(t) - P_i(t-m)}{P_i(t-m)}, m < t$$

- (iii) Determination of the expected returns for the firm.

$$E[R_i(t) / \Omega(t)] = \hat{\alpha}_i + \hat{\beta}_i R_m(t)$$

- (iv) Measuring the impact of the announcement of rights issue or bond issue on stocks' return by determining the abnormal returns defined as the unusual

amount of a stocks' return computed as the difference between actual returns and expected or normal returns. Where  $P_i(t)$  is the closing stock price of stock  $i$  at time  $t$ , the abnormal returns of the stock is:

$$AR_i(t) = R_i(t) - E[R_i(t)|\Omega(t)]$$

- (v) Aggregation of Abnormal Returns

$$CAR_{i(t_1, T_2)} = \sum_{t=t_1}^{T_2} AR_i(t)$$

- (vi) Since an event study is meant to test a sample for statistical evidence, a single firm cannot yield helpful statistical evidence. Hence cross-sectional aggregation was used to aggregate the abnormal returns of the entire sample of events:

$$CAR_{(t_1, T_2)} = 1/n \sum_{i=1}^n CAR_i(t_1, T_2)$$

- (vii) The significance of the outcomes was determined using Z score and P values at 5% for a two tailed test.
- (viii) The results were subjected to a normality test using Bera-Jarque normality test on EViews.
- (ix) The efficiency of the NSE around CS changes announcements was done by plotting cumulated aggregate CAR of rights issue sample and bond issue sample separately.

## **CHAPTER FOUR**

### **DATA ANALYSIS, FINDINGS AND DISCUSSIONS**

#### **4.1 Introduction**

This chapter profiles the analysis, findings and discussions thereof on the effects of announcements of CS changes on stocks returns for non- financial firms listed on the NSE. Firms that made rights issue or bond issue during the period January 2007 to December 2016 were the subject of the study. Primarily, the study made use of secondary data from NSE, CMA and other relevant publications like the information memorandum.

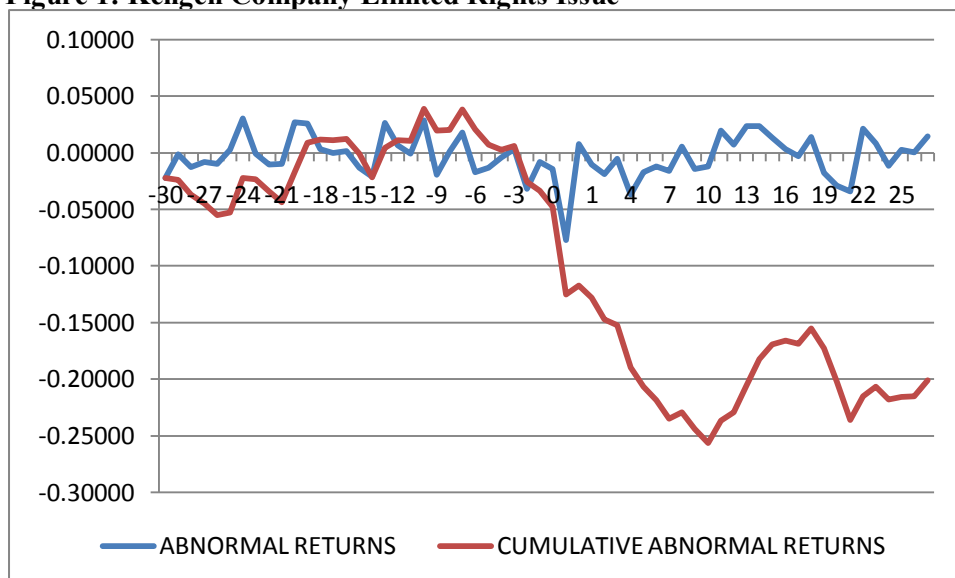
Both issues announcements were analyzed separately to allow for the benefit of interrogating if rights issue (equity) and bond issue (debt) had an effect on stocks returns that agrees with theoretical finance that debt financing results in higher returns compared to equity financing as discussed under CS theories in chapter two of this study. Analytical model constants were determined by regressing stocks returns during the estimation period of the study. The significance of the findings was determined by obtaining the P values from Z scores of the respective firms as well as the entire samples.

Besides assessing the effects of CS changes announcements, the study also endeavored to examine the efficiency of NSE around CS changes announcements. The fulfillment of this objective has been captured in section 4.4 of this chapter.

## 4.2 Rights Issue Announcements

A total of 7 firms were analyzed for rights issue announcements. Analysis was done using AR and CAR graphs shown in figures 1 to 8 derived from stocks returns and market returns using Microsoft excel as shown in annexures I to VIII.

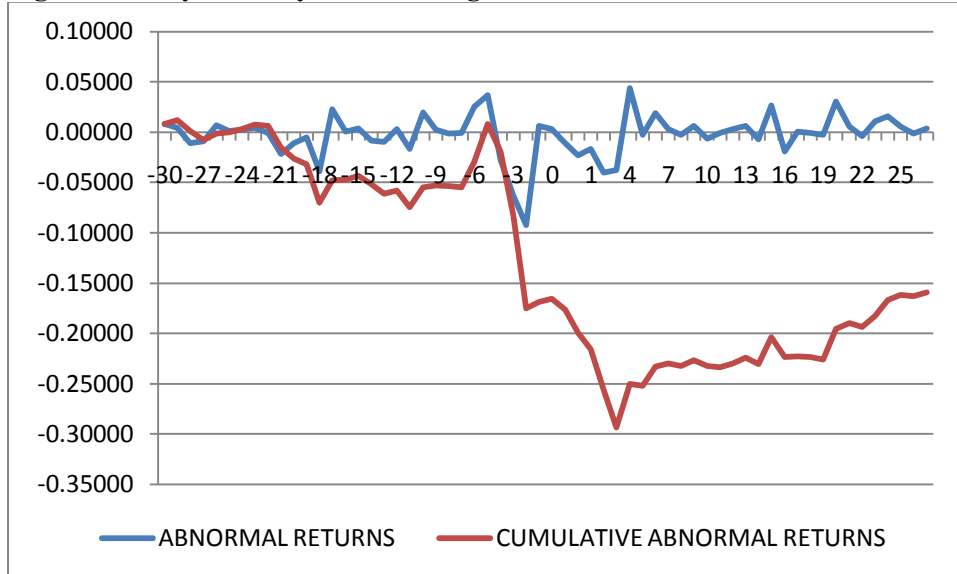
**Figure 1: Kengen Company Limited Rights Issue**



**Source: Research Findings (2018)**

Kengen stocks exhibited an erratic behaviour in stock returns before the announcement of rights issue where positive returns outweighed negative returns as evidenced by an overall gradual increase in the CAR with peaks at the 9<sup>th</sup> and 6<sup>th</sup> day before the event. The stock's AR dipped to an all times low of -0.03178 one day to the event before. A day after the event the AR turned positive and quickly reverted to negative the next day until the 8<sup>th</sup> day after the event. This may imply that the market overreacted to the announcement but swiftly corrected the position. A significance test of AR with a P value of 0.860 implies that the null hypothesis holds. Hence, Kengen rights issue announcement had no effect on Kengen stocks returns.

**Figure 2: Kenya Airways Limited Rights Issue**

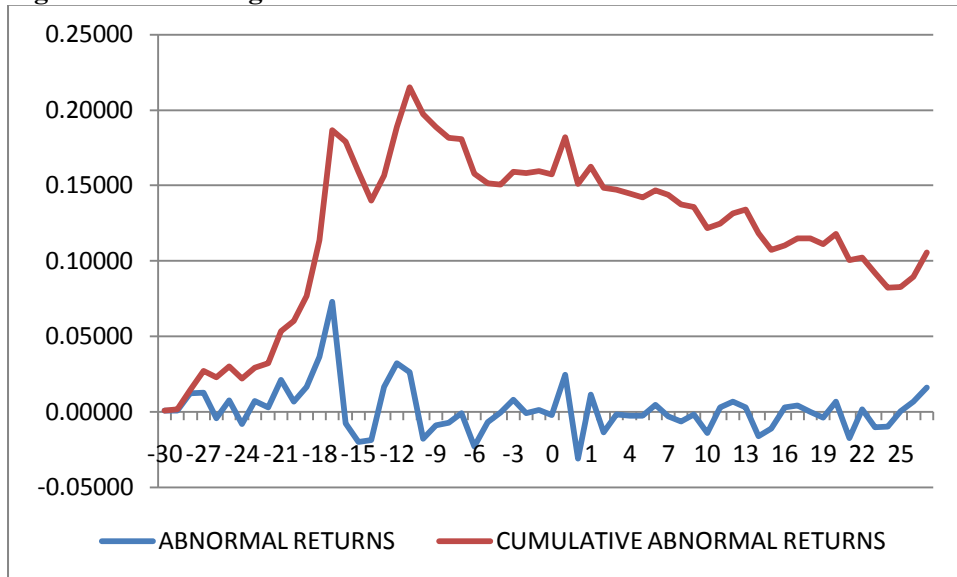


**Source: Research Findings (2018)**

Kenya Airways stocks displayed swings of positive and negative AR before the event with a high of 0.03703 on the 5<sup>th</sup> day to the event before plummeting on the 3<sup>rd</sup> and 4<sup>th</sup> day to the event to an all times low of -0.09230. There was a posting of positive AR 1 day to the event before immediately reverting to negative.

After the event, the stocks behaved moderately marked by fewer and less intense negative AR with a high of 0.0378 on the 4<sup>th</sup> day. This is evidenced by the gradual rise in the CAR curve towards the end of the event window. The stocks reacted negatively to the rights issue announcement but managed to recover and maintained a more moderated behavior post the event than before the event. A significance test with a P value of 0.902 implies that the null hypothesis holds. Hence, Kenya Airways rights issue announcement had no effect on Kenya Airways stocks returns.

**Figure 3: KPLC Rights Issue**

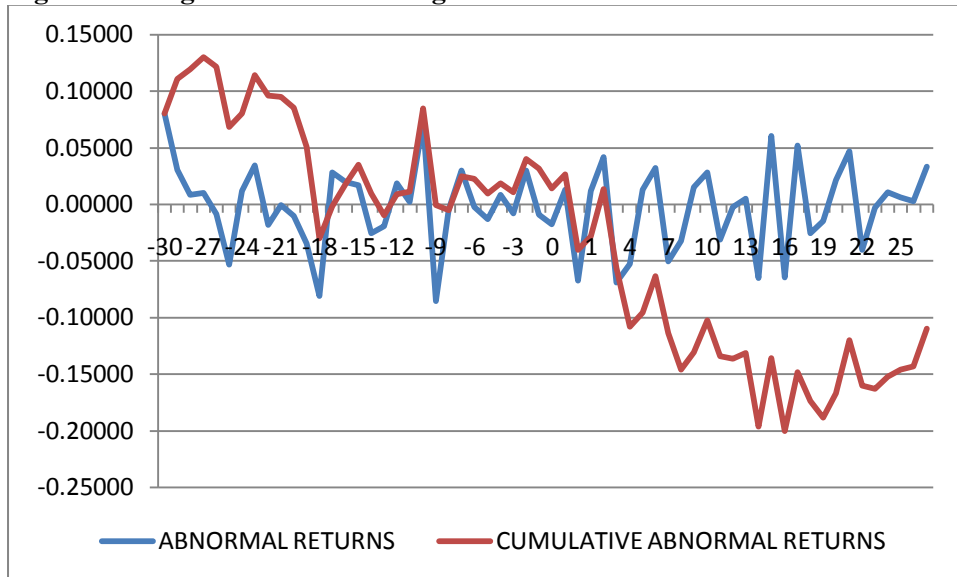


**Source: Research Findings (2018)**

Before the event, Kenya Power and Lighting Company Limited (KPLC) stocks largely posted positive AR with an all times high of 0.07292 on the 17<sup>th</sup> day to the event followed by a major dip. From about the 10<sup>th</sup> day to the event to the end of event window, AR were largely negative which resulted in a declining CAR curve.

Before then, AR were largely positive and the CAR had an upward trend. The AR 10 days pre and post the event, suggests that KPLC stocks displayed no outward behaviour implying the stocks did not react to the rights issue announcement. A significance test with a P value of 0.694 implies that the null holds. Hence, KPLC rights issue announcement had no effect on KPLC stocks returns.

**Figure 4: Longhorn Publishers Rights Issue**



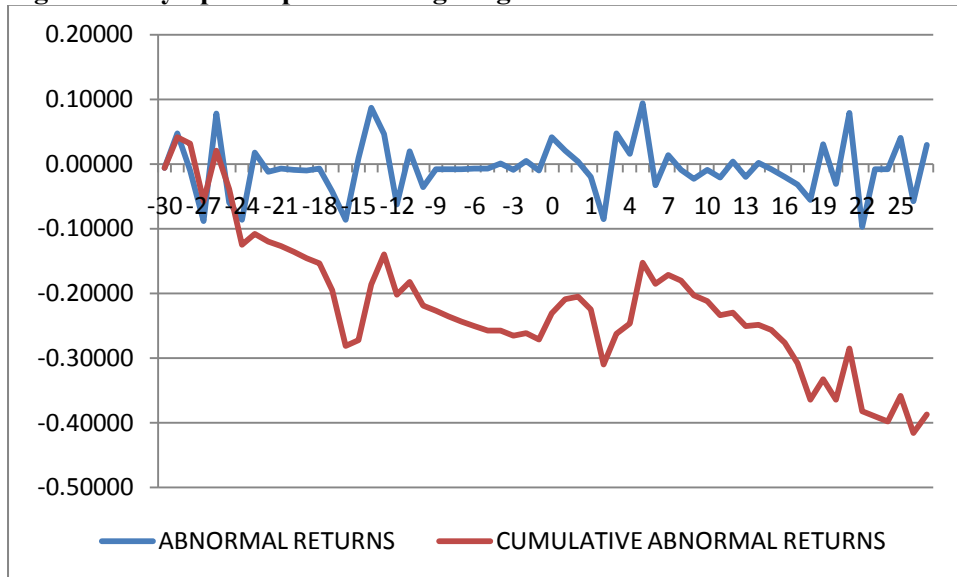
**Source: Research Findings (2018)**

Throughout the event window, Longhorn stocks AR behaved erratically with a negative bias as depicted by an overall declining CAR curve. The behavior of the stocks returns a few days to the event is balanced but after the event, the stock returns reacted positively before the AR made intermittent intense dips compared to the period immediately before the event.

The stocks posted a positive AR immediately after the event from negative AR a day to the event. A significance test with a P value of 0.961 implies that the null holds. Hence, Longhorn rights issue announcement had no effect on Longhorn stocks returns.



**Figure 5: Olympia Capital Holdings Rights Issue**

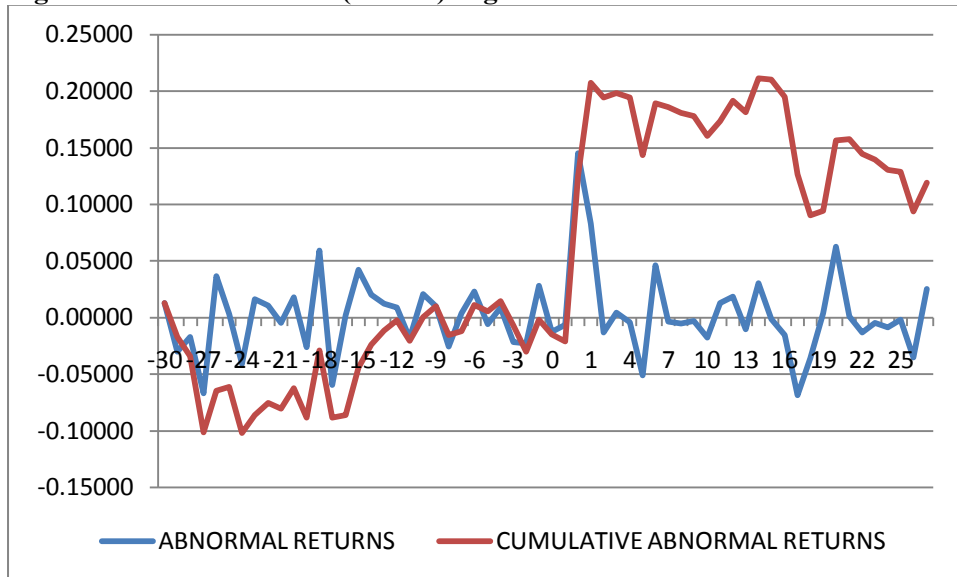


**Source: Research Findings (2018)**

Olympia Capital Holdings stocks displayed a trend of predominantly dismal negative AR throughout the event window marked by almost equally spaced breaks characterized a sharp drops and rises in AR before resuming the earlier nearly balanced trend.

The generally declining CAR curve is attributed to the largely negative AR throughout the event window. A day before the event, AR were negative and remained so until the 3<sup>rd</sup> day after the event when they turned positive. This may suggest that the stocks reacted slowly to the rights issue announcement. A significance test with a P value of 0.877 implies that the null hypothesis holds. Hence, Olympia Capital rights issue announcement had no effect on Olympia Capital stocks returns.

**Figure 6: TPS East Africa (Serena) Rights Issue**

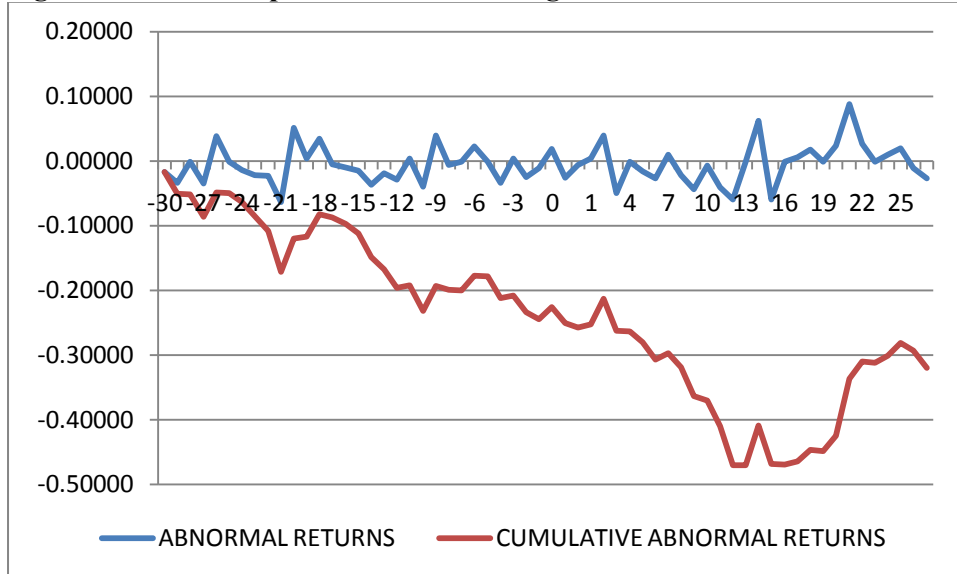


**Source: Research Findings (2018)**

TPS East Africa (Serena) stocks displayed an erratic behavior during the event window with AR oscillating between negative and positive with several notable sharp movements either way. Before the event, the AR were positively biased as the CAR curve assumes an upward trend. However, after the event, the AR became negatively biased as the CAR curve started to decline.

Around the event, the stocks reacted immediately by posting an all time high AR of 0.08278 a day after the event followed by a sharp decline to negative AR before assuming a trend which largely mimics the before the event trend. The AR curve suggests that the market overreacted to the rights issue announcement and immediately tried to adjust to the stock's fundamental price. A significance test with a P value of 0.995 implies that the null hypothesis holds. Hence, TPS Serena rights issue announcement had no effect on TPS Serena stocks returns.

**Figure 7: Uchumi Supermarket Limited Rights Issue**

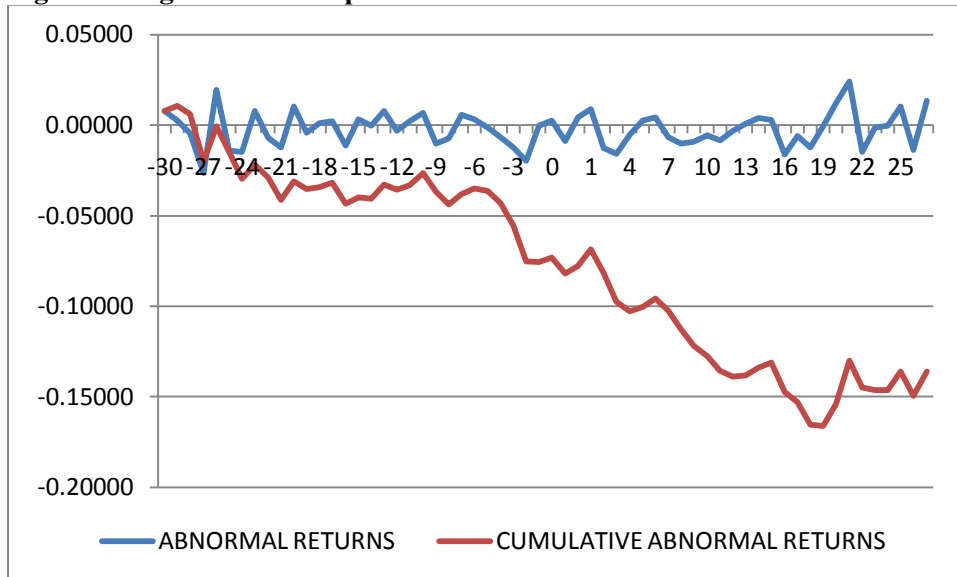


**Source: Research Findings (2018)**

Overall throughout the event window, Uchumi stock exhibited a moderate behavior with positive and negative oscillations in AR characterized by a negative bias which is depicted by a generally downward sloping CAR curve. However, there was an improvement in AR towards the end of the event window and the CAR curve assumed an upward trend.

After the event, the stocks immediately reacted positively and quickly reverted to majorly negative AR over the next 14 days. This may suggest a slight overreaction to the rights issue announcement. A significance test with a P value of 0.858 implies that the null hypothesis holds. Hence, Uchumi rights issue announcement had no effect on Uchumi stocks returns.

**Figure 8: Rights Issue Sample**



**Source: Research Findings (2018)**

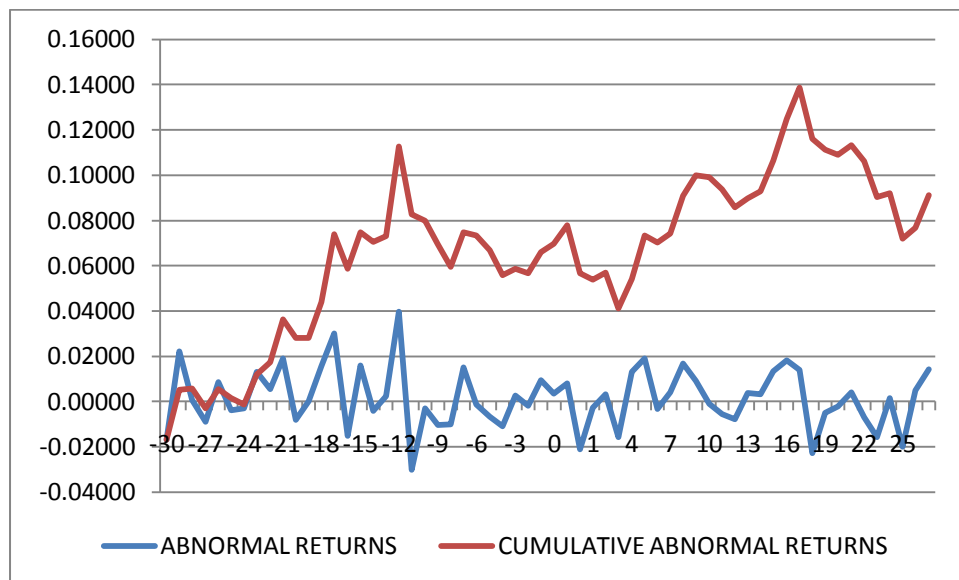
The behavior of the rights issue sample AR was moderately erratic throughout the event window with negative AR outweighing positive AR explained by CAR curve downward slope with a slight improvement towards the end of the event window.

Before the event, the AR were negative and the reaction to the rights issue announcement was immediate with AR turning positive. However, there was a quick reversion to negative AR suggesting that the 1 day positive AR may have been as a result of market overreaction to the rights issue announcement. The sample findings suggest that the stocks did not display an outward behavior as a result of rights issue announcement. A significance test with a P value of 0.817 implies that the null hypothesis holds. Hence, according to sample, rights issue announcement for non-financial firms listed on the NSE had no effect on stocks returns.

### 4.3 Bond Issue Announcements

A total of 4 firms were analyzed for bond issue announcements. Analysis was done using AR and CAR graphs shown in figures 9 to 13 derived from stocks returns and market returns using microsoft excel as shown in annexures IX to XIII.

**Figure 9: Centum Investments Company Bond Issue**

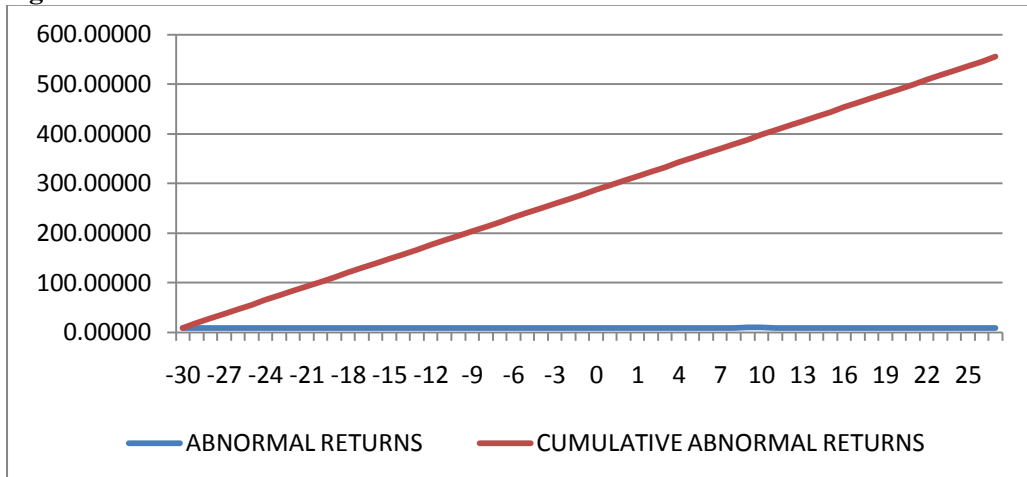


**Source: Research Findings (2018)**

Centum stocks displayed an erratic but almost uniform pattern of AR over the event window with positive AR outweighing negative AR hence an upwards sloping CAR curve.

A day before the event, the AR were positive but turned negative immediately after the event before turning positive again and remaining predominantly so for the next eight days. A significance test with a P value of 0.908 implies that the null hypothesis holds. Hence, Centum bond issue announcement had no effect on Centum stocks returns.

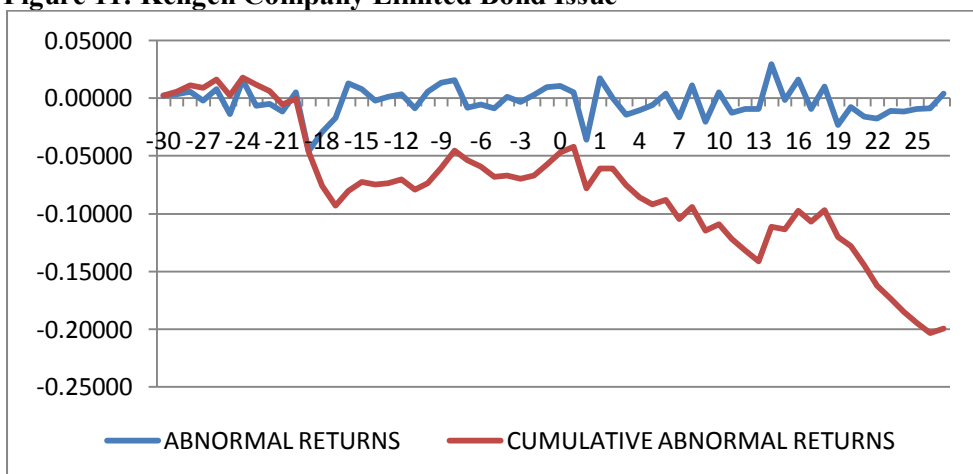
**Figure 10: EABL Bond Issue**



**Source: Research Findings (2018)**

East African Breweries Limited (EABL) stock AR were positive and nearly constant throughout the event window as depicted by a near horizontally straight AR curve and CAR curve which linearly slopes upwards at about 45 degrees. From the AR and CAR curves, there is no indication that the stocks reacted in any way to the bond issue announcement. However, a significance test with a P value of  $<0.00001$  implies that the null hypothesis is rejected. Hence, EABL bond issue announcement had an effect on EABL stocks returns.

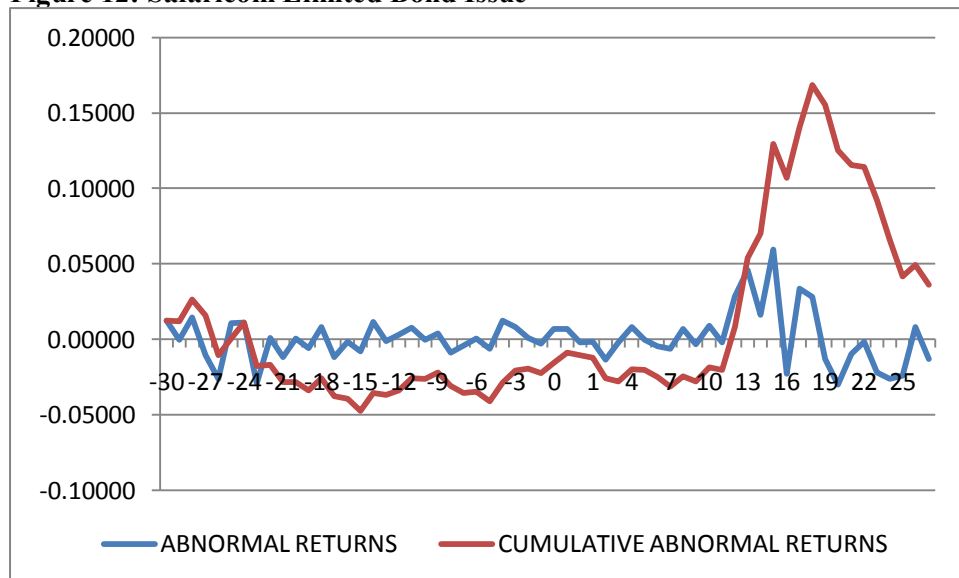
**Figure 11: Kengen Company Limited Bond Issue**



**Source: Research Findings (2018)**

Kengen stocks displayed mild erratic behavior over the event window with AR low of -0.04593 on the 19<sup>th</sup> day to the event and a high of 0.02956 on the 14<sup>th</sup> day after the event. Overall, AR were negative and the CAR curve is downward sloping. Though AR immediately before and after the event are positive, post event there is a slight positive increase in AR followed by close AR swings compared to nearly spread AR swings before the event. A significance test with a P value of 0.805 implies that the null hypothesis holds. Hence, Kengen bond issue announcement had no effect on Kengen stock returns.

**Figure 12: Safaricom Limited Bond Issue**

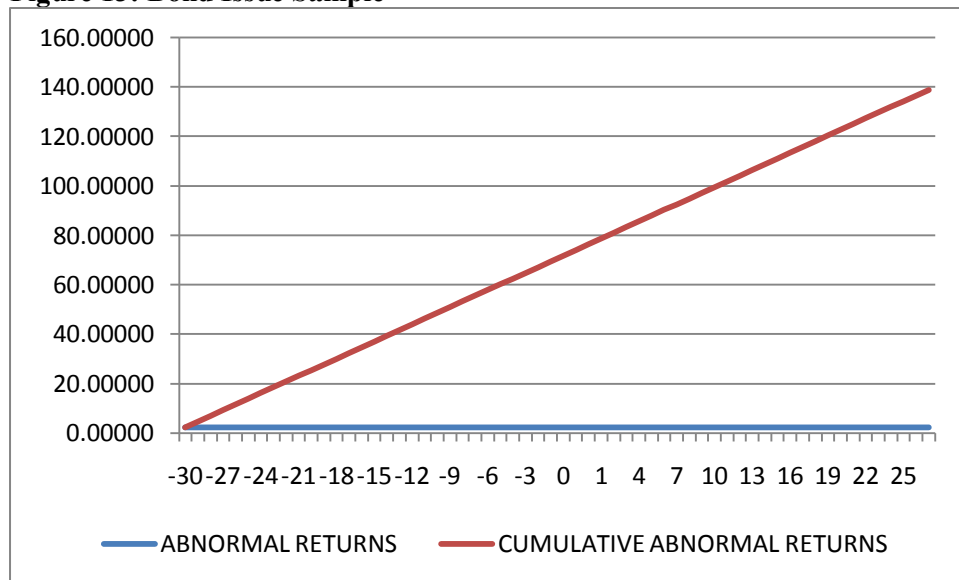


**Source: Research Findings (2018)**

Safe for the tail end of the event window, Safaricom stocks displayed moderate fluctuations in AR, the first 9 days and the last 15 days being erratic. The AR were towards the event and turned negative 1 day to the event a situation which was largely sustained 11 days after the event. The stocks posted sharp positive AR on the 16th day after the event which erratically dipped within days making a negative trend towards the end of the event window. This suggests that the stocks may have been late to react

to the bond issue announcement before attempting to quickly regain normalcy. A significance test with a P value of 0.971694 implies that the null hypothesis holds. Hence, Safaricom bond issue announcement had no effect on Safaricom stock returns.

**Figure 13: Bond Issue Sample**



**Source: Research Findings (2018)**

The sample bond issue announcements AR and CAR analysis strongly mimicked that EABL bond issue. This can be explained by EABL high and uniquely positive AR which smoothed out the small positive and negative oscillations of the other three firms AR. This is evidenced by AR tables in annexures IX to XIII. A significance test with a P value of  $<0.00001$  implies that the null hypothesis does not hold. This suggests that the sample bond announcements had an effect on stocks returns of non-financial firms listed on the NSE.



#### **4.4 Significance Test**

The significance of the outcomes was determined using Z score and P values at 5% for a two tailed test and the results tabulated in annexure XIV. The null hypothesis of the study was that announcements of CS changes have effect on stocks returns for firms listed on the NSE. For the rights issue, the results of all firms analyzed including the entire sample were insignificant. Hence, the null hypothesis was accepted.

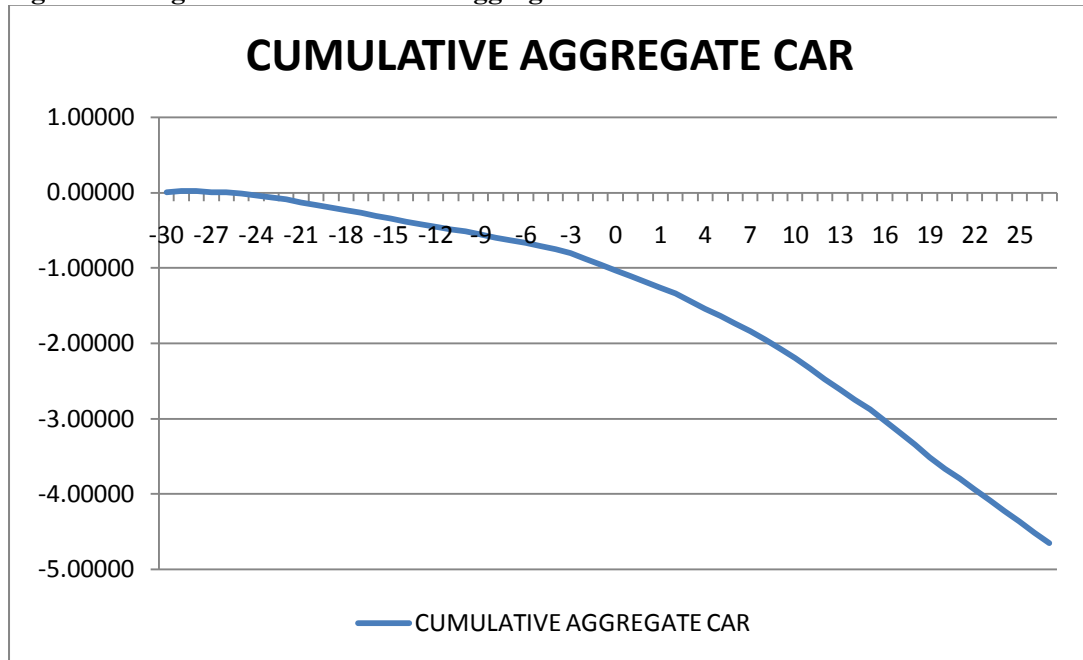
This implied that rights issue announcements had no effect on stock returns. For the bond issue, only the results of EABL and the sample analysis turned out to be significant thus the null hypothesis was rejected implying that bond issue announcements had effect on stocks returns.

#### **4.5 Efficiency of NSE around CS changes announcements**

The efficiency of NSE around CS changes was examined by analyzing the aggregated CAR which offers the advantage of graphical view of trends. An aggregation of CAR for the entire samples of both rights issue and bond issue was done as shown in annexures XV and XVI.

Separate graphs for rights issue and bond issue over the event window were derived from the cumulative aggregate CAR as shown in figure 14 and figure 15 respectively.

**Figure 14: Rights issue Cumulative Aggregate CAR**

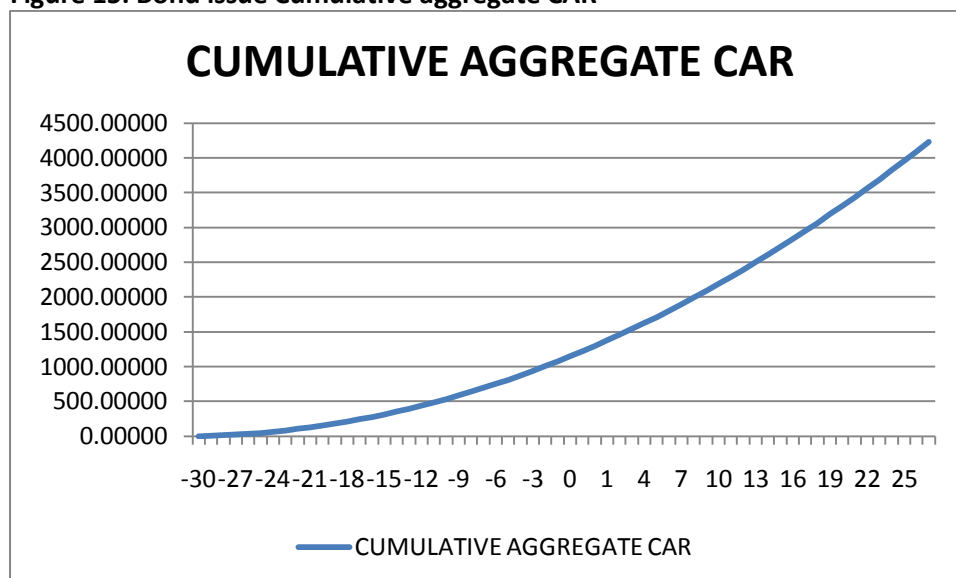


**Source: Research Findings (2018)**

According to theoretical finance, equity results in decrease of stock prices which also results in decreasing returns. In a semi-strong efficient market, equity issue announcements are expected to display a cumulative aggregate CAR curve which drops in the days to the event and evens out after the event.

From the graph in figure 14, NSE does not therefore appear to be semi-strong efficient around rights issue announcements since the graph shows a continuous decline throughout the event window. This implies slow assimilation of information in stock prices hence NSE can be said to be weak form efficient around rights issue announcements.

**Figure 15: Bond issue Cumulative aggregate CAR**



**Source: Research Findings (2018)**

According to theoretical finance, debt results in increase of stock prices which also results an increase in returns. In a semi-strong efficient market, equity issue announcements are expected to display a cumulative aggregate CAR curve which rises in the days to the event and evens out after the event. From the graph in figure 15, NSE does not therefore appear to be semi-strong efficient around bond issue announcements since the graph shows a continuous incline throughout the event window. This implies slow assimilation of information in stock prices hence NSE can be said to be weak form efficient around bond issue announcements.

#### **4.6 Discussion of Research Findings**

This study aimed at determining the effect of CS change announcements on stock returns for listed at the NSE. An analysis of stock returns for 7 firms that had rights issue was done while 4 firms were analyzed bond issue, all covering and event window of 60 days. The focus of the study was January 2007 to December 2016. The

effect of the announcements as the event was analyzed by observing the behavior of the AR and CAR.

Apart from Longhorn TPS Serena which had visibly erratic behavior in AR, other firms which made rights issue had moderate reactions in AR over the entire event window. However judging from the declining CAR curves, Kengen, Kenya Airways and Olympia Capital AR were largely negatively biased. KPLC had AR which were positively biased at the beginning of the event window before assuming a dipping trend towards the end of the events window. Longhorn and Uchumi had negatively biased AR initially but the trend improved positively later. TPS Serena uniquely showed a heavily positively biased AR as it posted a generally rising CAR curve. Rights issue sample had moderate AR and gradually declining CAR curve throughout the event window suggesting that rights issue announcements were generally not well received by the market.

Bond issue AR for Centum and Kengen were almost entirely moderate in behavior without major fluctuations. However Centum AR were positively biased by CAR curve showing an upward trend. For Kengen the CAR curve was on a general declining trend. For Safaricom, the AR had a balanced negative positive behavior with CAR curve being negative but without a constant trend before rising and then dropping towards the end of the event window. EABL had constant positive AR which were reflected in the CAR curve being positively inclined throughout the entire event window. The bond sample mimicked AR and CAR of EABL. This implies that that market somehow received bond issue announcements better than rights issue announcements.

Despite there being notable AR in the analysis of rights issue announcements, P values of significance tests using the Z score returned a verdict that the AR were statistically insignificant and hence rights announcements had no effect on stock returns. For bond issue, except for EABL, the AR were statistically insignificant for Kengen, Centum and Safaricom according to P values from Z score which means that bond issue announcements had no effect on stock returns. However, the bond issue announcement sample, just like EABL had a significance test which showed that bond issue announcements have an effect on stock returns. As for the market efficiency, NSE was found out to be weak form efficient around CS changes announcements judging from the cumulative aggregate CAR curves of both rights issue and bond issue announcements.

The significance tests of this study on the bond issue sample collaborates other studies on effect of CS changes on stock returns quoted in literature review of this study. The study by Menon (2016) found that increasing debt increases the value of shares. Adesina et al. (2015) found that both debt and equity have significant effect on the performance of the banks while Lambe (2014) gave evidence to effect that debt has a great influence on the value of the firm. However going by the significance test on individual firms analysis, the findings of this study fail to support those of the above previous studies. On bond issue announcements, the findings of this study support earlier findings by Ngure (2014) that bonds issue had an effect of significant periodic movement in stock prices pre and post bond issue. For rights issue, the findings of this study also fail to agree with those of a study by Kithinji et al. (2014) on how rights issue affect share price at the NSE. The study showed that there is positive price reaction before and after announcement of rights issue. This is contrary to the findings

of this study which noted no defined positive price reactions before and after the announcement. The findings of this study are that price reactions are both positive and negative pre and post announcements.

## **CHAPTER FIVE**

### **SUMMARY, CONCLUSION AND RECOMMENDATIONS**

#### **5.1 Introduction**

Further to secondary data collected in chapter 3 and analysis of the same in chapter 4, this chapter provides a discussion on a summary of the findings, conclusions, recommendations and suggestions derived from the study besides capturing limitations encountered while undertaking the study. This is done in appreciation of the objectives of the study.

#### **5.2 Summary of Findings**

The study had a twin objective of one; to examine how stock returns at NSE respond to CS changes announcements and two; to examine the efficiency of the financial market in Kenya around CS changes.

The study separately analyzed the reaction of stock returns to announcements of two modes of raising capital which affect the CS of a firm. First, announcements of secondary offerings or rights issue where 7 firms were analyzed. Second, announcements of bonds issue where 4 firms were analyzed. From a population of firms listed on the NSE, a sample was drawn constituting of firms which had done rights issue and those which had issued bonds for the period January 2007 to December 2016 with the exclusion of financial firms. Being an Event Study, an estimation period of 30 days and an event window of 60 days -where pre-event is 30 days, event is 3 days and post-event is 27 days - were used. Deductions were derived from the behavior of the AR and CAR. The study used Z score to derive P values for determining the significance of the AR recorded.

With respect to rights issue announcements, the study revealed that for all firms analyzed despite there being AR, they not statistically significant and hence rights issue CS changes announcements have no effect on stock returns. Rights issue sample analysis returned the same verdict. For bond issue announcements, with exception of EABL, the AR noted were found to be statistically insignificant. However for bond issue sample analysis AR had statistical significance implying that bond issue announcements had effect on stock returns. NSE was found to be weak form efficient.

### **5.3 Conclusion**

In respect rights issue, this study concluded that CS change announcements had no effect on the stock returns for firms listed at the NSE. This is according to the not significant statistical test of AR where individual firms and the entire sample upheld the null hypothesis. For bond issue, 75% of the analyzed firms had not significant statistical tests which upheld the null hypothesis that CS change announcements had no effect on stocks return at NSE. Only EABL, had an analysis whose statistical significance test rejected the null hypothesis. The bond issue sample upheld the null hypothesis. The study concludes that CS changes announcements had no effect on stocks returns at the NSE.

These finding are in negation of theoretical finance which presupposes that rights issue affect stocks returns negatively while bond issue affect stock returns positively. This negation may be attributed to the efficiency of NSE which has been found to be weak form in this study. This inefficiency can cause slow and inaccurate reaction to information which implies that stocks are not fairly priced. This also creates an



opportunity for speculative trading which can favor those with information with exclusion of the rest. This can fuel in-sider trading.

#### **5.4 Recommendations**

From the study period covering January 2007 to December 2016, only 7 listed non-financial institutions made rights issue. This translates to less than one non-financial firm per year. Similarly, over the same period of time, only 5 listed non-financial firms made bond issue. This translates to about one firm every two years. However, in general, the overall level of rights issue and bond issue by firms listed at the NSE is encouraging. Financial firms seem upbeat and they dominate the use of these two forms of raising external capital. The relevant authorities concerned with the regulation of the capital market in Kenya have a task of continuously coming up with innovative ways that will make more firms find it desirable to list at the NSE as well as make rights and bond issues.

The study revealed that indeed there were AR despite the fact that they were of no statistical significance. The inefficiency of NSE brought out in this study may be responsible for the AR noted in the analysis. The market inefficiency can be gradually corrected by way multi-sectoral approach involving education of stake holders so that they make informed decision. Stronger regulatory regimes are necessary to wade of fears that investors may harbor regarding possible malpractices that may jeopardize their investments.

## **5.5 Limitation of the Study**

This study relied on the use of secondary data which had to be obtained from other parties. This posed a big challenge since the commitment of these parties to the needs of the researcher took a backstage as their main job roles rightfully took priority. Notably was the slow response in getting confirmations of certain aspects of bond issues from CMA. There was also evidence of poor information management as some information could not be found even by those the custodians of such information. It is for this reason that Sasini was not analyzed for bond issue despite qualifying to be in the study sample. Tied to information management is the correctness of the secondary data which cannot be guaranteed.

## **5.6 Suggestions for Further Research**

This study recommends that further studies on CS change announcements be done focusing on other categories of firms so as to reward the academic fraternity and other users of information with a wider view of how such announcements affect stock returns. It would also be useful adjust the scope of the study by increasing other parameters like the event window and estimation period of the study. Also the study can be enriched by using other statistical methods of examining the efficiency of NSE like the non-parametric rank test.

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## APPENDICES

### Appendix I: Listed Firms at Nairobi Security Exchange

<b>AGRICULTURAL</b>	<b>CONSTRUCTION &amp; ALLIED</b>
Eaagads Ltd	ARM Cement Ltd
Kakuzi Ltd	Bamburi Cement Ltd
Kapchorua Tea Co. Ltd	Crown Paints Kenya Ltd
The Limuru Tea Co. Ltd	E.A.Cables Ltd
Sasini Ltd	E.A.Portland Cement Co. Ltd
Williamson Tea Kenya Ltd	
	<b>ENERGY &amp; PETROLEUM</b>
<b>AUTOMOBILES &amp; ACCESSORIES</b>	KenGen Co. Ltd
Car & General (K) Ltd	KenolKobil Ltd
Marshalls (E.A.) Ltd	Kenya Power & Lighting Co Ltd
Sameer Africa Ltd	Kenya Power & Lighting Ltd 4% Pref 20.00
	Kenya Power & Lighting Ltd 7% Pref 20.00
<b>BANKING</b>	Total Kenya Ltd
Barclays Bank of Kenya Ltd	Umeme Ltd
CFC Stanbic of Kenya Holdings Ltd	
Diamond Trust Bank Kenya Ltd	<b>INSURANCE</b>
Equity Group Holdings Ltd	Britam Holdings Ltd
Housing Finance Group Ltd	CIC Insurance Group Ltd
I&M Holdings Ltd	Jubilee Holdings Ltd
KCB Group Ltd Ord	Kenya Re Insurance Corporation Ltd
National Bank of Kenya Ltd	Liberty Kenya Holdings Ltd
NIC Group PLC	Pan Africa Insurance Holdings Ltd
Standard Chartered Bank Kenya Ltd	<b>INVESTMENT</b>
The Co-operative Bank of Kenya Ltd	Centum Investment Co Ltd
	Home Afrika Ltd
<b>COMMERCIAL AND SERVICES</b>	Kurwitu Ventures Ltd
Atlas African Industries Ltd	Olympia Capital Holdings Ltd
Express Kenya Ltd	Trans-Century Ltd
Hutchings Biemer Ltd	
Kenya Airways Ltd	<b>INVESTMENT SERVICES</b>
Longhorn Publishers Ltd	Nairobi Securities Exchange Ltd Ord 4.00
Nairobi Business Ventures Ltd	
Nation Media Group Ltd	<b>MANUFACTURING &amp; ALLIED</b>
Standard Group Ltd	A.Baumann & Co Ltd
TPS Eastern Africa Ltd	B.O.C Kenya Ltd
Uchumi Supermarket Ltd	British American Tobacco Kenya Ltd
WPP Scangroup Ltd	Carbacid Investments Ltd

<b>TELECOMMUNICATION &amp; TECHNOLOGY</b>	East African Breweries Ltd
Safaricom Ltd	Eveready East Africa Ltd
	Flame Tree Group Holdings Ltd
<b>REAL ESTATE INVESTMENT TRUST</b>	Kenya Orchards Ltd
STANLIB FAHARI I-REIT. Ord.20.00	Mumias Sugar Co. Ltd
<b>TELECOMMUNICATION &amp; TECHNOLOGY</b>	Unga Group Ltd
Safaricom Ltd	

## **Appendix II: Firms analyzed for Rights Issue**

1	KenGen Company Limited
2	Kenya Airways Limited
3	Kenya Power and Lighting Company Limited
4	Longhorn Publishers Kenya Limited
5	Olympia Capital Holdings Limited
6	TPS Eastern Africa (Serena) Limited
7	Uchumi Supermarket Limited

## **Appendix III: Firms analyzed for Bond Issue**

1	Centum Investment Company Limited
2	East African Breweries Limited
3	KenGen Company Limited
4	Safaricom Limited

**ANNEXES**

**Annex I: Kengen Company Limited Rights Issue Event Date 5/10/16**

<b>DATE</b>	<b>STOCK PRICE</b>	<b>STOCK RETURN</b>	<b>NSE 20 INDEX</b>	<b>MARKET RETURN</b>	<b>EXPECTED RETURNS</b>	<b>ABNORMAL RETURNS</b>	<b>CUMULATIVE RETURNS</b>
3/22/2016	7.65		3957.06				
3/23/2016	7.65	0.00000	3991.95	0.00882	0.02233	-0.02233	-0.02233
3/24/2016	7.7	0.00654	4001.36	0.00236	0.00817	-0.00163	-0.02396
3/29/2016	7.6	-0.01299	3995.56	-0.00145	-0.00018	-0.01281	-0.03677
3/30/2016	7.5	-0.01316	3981.33	-0.00356	-0.00481	-0.00835	-0.04512
3/31/2016	7.45	-0.00667	3982.09	0.00019	0.00342	-0.01009	-0.05520
4/1/2016	7.55	0.01342	3996.38	0.00359	0.01087	0.00256	-0.05265
4/4/2016	7.85	0.03974	4008.5	0.00303	0.00965	0.03009	-0.02256
4/5/2016	7.9	0.00637	4016.64	0.00203	0.00745	-0.00108	-0.02364
4/6/2016	7.9	0.00000	4030	0.00333	0.01029	-0.01029	-0.03393
4/7/2016	7.95	0.00633	4054.29	0.00603	0.01621	-0.00988	-0.04382
4/8/2016	7.95	0.00000	3999.33	-0.01356	-0.02671	0.02671	-0.01710
4/11/2016	8	0.00629	3958.57	-0.01019	-0.01934	0.02563	0.00853
4/12/2016	7.9	-0.01250	3925.32	-0.00840	-0.01541	0.00291	0.01144
4/13/2016	7.85	-0.00633	3909.47	-0.00404	-0.00585	-0.00048	0.01096
4/14/2016	7.85	0.00000	3901.45	-0.00205	-0.00150	0.00150	0.01246
4/15/2016	7.85	0.00000	3920	0.00475	0.01342	-0.01342	-0.00096
4/18/2016	7.75	-0.01274	3929.51	0.00243	0.00832	-0.02106	-0.02202
4/19/2016	8	0.03226	3934.58	0.00129	0.00583	0.02643	0.00441
4/20/2016	8.1	0.01250	3939.5	0.00125	0.00574	0.00676	0.01117
4/21/2016	8.25	0.01852	3968.75	0.00742	0.01928	-0.00076	0.01041
4/22/2016	8.7	0.05455	4010.82	0.01060	0.02624	0.02831	0.03872
4/25/2016	8.6	-0.01149	4019.85	0.00225	0.00794	-0.01943	0.01929
4/26/2016	8.6	0.00000	4012.72	-0.00177	-0.00089	0.00089	0.02018
4/27/2016	8.65	0.00581	3985.04	-0.00690	-0.01212	0.01793	0.03811
4/28/2016	8.55	-0.01156	3990.2	0.00129	0.00584	-0.01740	0.02072
4/29/2016	8.55	0.00000	4009.26	0.00478	0.01347	-0.01347	0.00725
5/3/2016	8.6	0.00585	4022.61	0.00333	0.01030	-0.00445	0.00279



5/4/2016	8.5	-0.01163	3989.71	-0.00818	-0.01493	0.00330	0.00609
5/5/2016	8.2	-0.03529	3977.85	-0.00297	-0.00352	-0.03178	-0.02568
5/6/2016	8.1	-0.01220	3964.65	-0.00332	-0.00427	-0.00792	-0.03360
5/9/2016	8	-0.01235	3962.95	-0.00043	0.00206	-0.01441	-0.04801
5/10/2016	7.2	-0.10000	3916.74	-0.01166	-0.02256	-0.07744	-0.12545
5/11/2016	7.35	0.02083	3934.43	0.00452	0.01290	0.00793	-0.11752
5/12/2016	7.25	-0.01361	3923.42	-0.00280	-0.00313	-0.01047	-0.12799
5/13/2016	7.15	-0.01379	3927.69	0.00109	0.00539	-0.01918	-0.14717
5/16/2016	7.05	-0.01399	3907.09	-0.00524	-0.00850	-0.00549	-0.15266
5/17/2016	6.65	-0.05674	3866.97	-0.01027	-0.01951	-0.03723	-0.18989
5/18/2016	6.6	-0.00752	3878.42	0.00296	0.00949	-0.01701	-0.20690
5/19/2016	6.55	-0.00758	3880.81	0.00062	0.00435	-0.01193	-0.21882
5/20/2016	6.5	-0.00763	3890.85	0.00259	0.00867	-0.01630	-0.23513
5/23/2016	6.5	0.00000	3875.69	-0.00390	-0.00554	0.00554	-0.22959
5/24/2016	6.5	0.00000	3895.86	0.00520	0.01441	-0.01441	-0.24399
5/25/2016	6.5	0.00000	3912.33	0.00423	0.01227	-0.01227	-0.25626
5/26/2016	6.5	0.00000	3871.74	-0.01037	-0.01974	0.01974	-0.23652
5/27/2016	6.55	0.00769	3867.5	-0.00110	0.00060	0.00709	-0.22943
5/30/2016	6.7	0.02290	3860.94	-0.00170	-0.00072	0.02362	-0.20581
5/31/2016	6.75	0.00746	3827.8	-0.00858	-0.01581	0.02328	-0.18253
6/2/2016	6.75	0.00000	3799.57	-0.00737	-0.01317	0.01317	-0.16936
6/3/2016	6.8	0.00741	3801.31	0.00046	0.00400	0.00340	-0.16596
6/6/2016	6.8	0.00000	3801.03	-0.00007	0.00284	-0.00284	-0.16880
6/7/2016	6.9	0.01471	3797.74	-0.00087	0.00110	0.01360	-0.15520
6/8/2016	6.8	-0.01449	3798.26	0.00014	0.00330	-0.01779	-0.17299
6/9/2016	6.7	-0.01471	3818.19	0.00525	0.01450	-0.02921	-0.20220
6/10/2016	6.55	-0.02239	3833.42	0.00399	0.01174	-0.03413	-0.23633
6/13/2016	6.65	0.01527	3817.66	-0.00411	-0.00601	0.02128	-0.21505
6/14/2016	6.6	-0.00752	3784.56	-0.00867	-0.01601	0.00849	-0.20656
6/15/2016	6.6	0.00000	3799.16	0.00386	0.01146	-0.01146	-0.21802
6/16/2016	6.6	0.00000	3789.94	-0.00243	-0.00232	0.00232	-0.21570
6/17/2016	6.6	0.00000	3784.32	-0.00148	-0.00025	0.00025	-0.21545

**Annex II: Kenya Airways Limited Rights Issue    Event Date 3/19/12**

<b>DATE</b>	<b>STOCK PRICE</b>	<b>STOCK RETURN</b>	<b>NSE 20 INDEX</b>	<b>MARKET RETURN</b>	<b>EXPECTED RETURNS</b>	<b>ABNORMAL RETURNS</b>	<b>CUMULATIVE ABNORMAL RETURNS</b>
2/2/2012	18.9		3215.7				
2/3/2012	18.95	0.00265	3196.7	-0.00591	-0.00525	0.00790	0.00790
2/6/2012	18.9	-0.00264	3167.49	-0.00914	-0.00703	0.00439	0.01228
2/7/2012	18.65	-0.01323	3167.27	-0.00007	-0.00204	-0.01119	0.00109
2/8/2012	18.45	-0.01072	3167.87	0.00019	-0.00190	-0.00883	-0.00774
2/9/2012	18.5	0.00271	3156.87	-0.00347	-0.00391	0.00662	-0.00112
2/10/2012	18.5	0.00000	3160.51	0.00115	-0.00137	0.00137	0.00025
2/13/2012	18.5	0.00000	3156.19	-0.00137	-0.00275	0.00275	0.00300
2/14/2012	18.5	0.00000	3142.74	-0.00426	-0.00434	0.00434	0.00735
2/15/2012	18.45	-0.00270	3143.9	0.00037	-0.00180	-0.00091	0.00644
2/16/2012	18.05	-0.02168	3154.46	0.00336	-0.00015	-0.02153	-0.01509
2/17/2012	17.9	-0.00831	3182.14	0.00877	0.00283	-0.01114	-0.02622
2/20/2012	17.75	-0.00838	3176.36	-0.00182	-0.00300	-0.00538	-0.03160
2/21/2012	17.05	-0.03944	3183.01	0.00209	-0.00085	-0.03859	-0.07019
2/22/2012	17.45	0.02346	3199.67	0.00523	0.00088	0.02258	-0.04761
2/23/2012	17.45	0.00000	3208.63	0.00280	-0.00046	0.00046	-0.04715
2/24/2012	17.6	0.00860	3248.4	0.01239	0.00482	0.00378	-0.04337
2/27/2012	17.45	-0.00852	3258.43	0.00309	-0.00030	-0.00822	-0.05159
2/28/2012	17.3	-0.00860	3275.87	0.00535	0.00094	-0.00954	-0.06113
2/29/2012	17.4	0.00578	3303.75	0.00851	0.00268	0.00310	-0.05803
3/1/2012	17.1	-0.01724	3312.15	0.00254	-0.00060	-0.01664	-0.07467
3/2/2012	17.45	0.02047	3329.16	0.00514	0.00082	0.01964	-0.05503
3/5/2012	17.5	0.00287	3343.96	0.00445	0.00045	0.00242	-0.05261
3/6/2012	17.5	0.00000	3362.59	0.00557	0.00106	-0.00106	-0.05367
3/7/2012	17.5	0.00000	3380.27	0.00526	0.00089	-0.00089	-0.05457
3/8/2012	17.95	0.02571	3394.29	0.00415	0.00028	0.02543	-0.02913
3/9/2012	18.6	0.03621	3401.6	0.00215	-0.00082	0.03703	0.00789
3/12/2012	18.05	-0.02957	3399.97	-0.00048	-0.00226	-0.02731	-0.01941
3/13/2012	16.75	-0.07202	3358.6	-0.01217	-0.00869	-0.06333	-0.08274

3/14/2012	15.1	-0.09851	3332.89	-0.00765	-0.00621	-0.09230	-0.17504
3/15/2012	15.15	0.00331	3326.35	-0.00196	-0.00308	0.00639	-0.16865
3/16/2012	15.15	0.00000	3318.95	-0.00222	-0.00322	0.00322	-0.16542
3/19/2012	14.95	-0.01320	3317.62	-0.00040	-0.00222	-0.01098	-0.17641
3/20/2012	14.5	-0.03010	3285.51	-0.00968	-0.00732	-0.02278	-0.19918
3/21/2012	14.25	-0.01724	3293.1	0.00231	-0.00073	-0.01651	-0.21569
3/22/2012	13.65	-0.04211	3293.91	0.00025	-0.00186	-0.04024	-0.25594
3/23/2012	13.15	-0.03663	3312.85	0.00575	0.00116	-0.03779	-0.29373
3/26/2012	13.7	0.04183	3312.56	-0.00009	-0.00205	0.04387	-0.24985
3/27/2012	13.7	0.00000	3339.27	0.00806	0.00243	-0.00243	-0.25229
3/28/2012	14	0.02190	3367.23	0.00837	0.00261	0.01929	-0.23300
3/29/2012	14	0.00000	3360.12	-0.00211	-0.00316	0.00316	-0.22984
3/30/2012	13.95	-0.00357	3366.89	0.00201	-0.00089	-0.00268	-0.23251
4/2/2012	14	0.00358	3363.72	-0.00094	-0.00252	0.00610	-0.22641
4/3/2012	13.95	-0.00357	3392.23	0.00848	0.00266	-0.00623	-0.23265
4/4/2012	13.95	0.00000	3408.7	0.00486	0.00067	-0.00067	-0.23332
4/5/2012	13.95	0.00000	3400.48	-0.00241	-0.00333	0.00333	-0.22999
4/10/2012	14	0.00358	3396.83	-0.00107	-0.00259	0.00617	-0.22382
4/11/2012	13.95	-0.00357	3429.02	0.00948	0.00321	-0.00678	-0.23060
4/12/2012	14.35	0.02867	3454.34	0.00738	0.00206	0.02661	-0.20399
4/13/2012	14.05	-0.02091	3456.35	0.00058	-0.00168	-0.01923	-0.22321
4/16/2012	14	-0.00356	3443.94	-0.00359	-0.00397	0.00042	-0.22280
4/17/2012	14	0.00000	3461.19	0.00501	0.00075	-0.00075	-0.22355
4/18/2012	14	0.00000	3489.24	0.00810	0.00246	-0.00246	-0.22601
4/19/2012	14.5	0.03571	3534.27	0.01291	0.00510	0.03062	-0.19539
4/20/2012	14.6	0.00690	3554.46	0.00571	0.00114	0.00575	-0.18964
4/23/2012	14.55	-0.00342	3571.2	0.00471	0.00059	-0.00401	-0.19365
4/24/2012	14.7	0.01031	3581.33	0.00284	-0.00044	0.01075	-0.18290
4/25/2012	14.9	0.01361	3579.57	-0.00049	-0.00227	0.01588	-0.16703
4/26/2012	14.9	0.00000	3557.13	-0.00627	-0.00545	0.00545	-0.16158
4/27/2012	14.8	-0.00671	3534.53	-0.00635	-0.00549	-0.00122	-0.16280

**Annex III: KPLC Limited Rights Issue Event Date 10/7/10**

<b>DATE</b>	<b>STOCK PRICE</b>	<b>STOCK RETURN</b>	<b>NSE 20 INDEX</b>	<b>MARKET RETURN</b>	<b>EXPECTED RETURNS</b>	<b>ABNORMAL RETURNS</b>	<b>CUMULATIVE ABNORMAL RETURNS</b>
8/23/2010	208		4588.61				
8/24/2010	207	-0.00481	4564.83	-0.00518	-0.00580	0.00100	0.00100
8/25/2010	206	-0.00483	4541.7	-0.00507	-0.00570	0.00087	0.00186
8/26/2010	207	0.00485	4509.56	-0.00708	-0.00756	0.01241	0.01428
8/30/2010	208	0.00483	4476.19	-0.00740	-0.00786	0.01269	0.02697
8/31/2010	206	-0.00962	4454.59	-0.00483	-0.00547	-0.00414	0.02283
9/1/2010	207	0.00485	4446.68	-0.00178	-0.00265	0.00750	0.03033
9/2/2010	206	-0.00483	4466.96	0.00456	0.00323	-0.00806	0.02227
9/3/2010	206	0.00000	4437.69	-0.00655	-0.00707	0.00707	0.02934
9/6/2010	206	0.00000	4427.77	-0.00224	-0.00307	0.00307	0.03241
9/7/2010	210	0.01942	4424.72	-0.00069	-0.00164	0.02106	0.05347
9/8/2010	212	0.00952	4442.6	0.00404	0.00275	0.00678	0.06025
9/9/2010	216	0.01887	4457.47	0.00335	0.00210	0.01677	0.07701
9/10/2010	225	0.04167	4486.28	0.00646	0.00499	0.03668	0.11369
9/13/2010	242	0.07556	4503.86	0.00392	0.00263	0.07292	0.18661
9/14/2010	242	0.00000	4545.86	0.00933	0.00764	-0.00764	0.17897
9/15/2010	237	-0.02066	4547.37	0.00033	-0.00069	-0.01997	0.15900
9/16/2010	232	-0.02110	4541.25	-0.00135	-0.00225	-0.01885	0.14015
9/17/2010	236	0.01724	4549.87	0.00190	0.00076	0.01648	0.15663
9/20/2010	245	0.03814	4583.01	0.00728	0.00575	0.03238	0.18901
9/21/2010	251	0.02449	4579.93	-0.00067	-0.00162	0.02611	0.21513
9/22/2010	248	-0.01195	4613.75	0.00738	0.00585	-0.01780	0.19733
9/23/2010	245	-0.01210	4601.81	-0.00259	-0.00340	-0.00870	0.18863
9/24/2010	242	-0.01224	4581.72	-0.00437	-0.00505	-0.00720	0.18143
9/27/2010	242	0.00000	4589.83	0.00177	0.00064	-0.00064	0.18079
9/28/2010	237	-0.02066	4605.11	0.00333	0.00209	-0.02275	0.15804
9/29/2010	237	0.00000	4643.7	0.00838	0.00677	-0.00677	0.15128
9/30/2010	236	-0.00422	4629.8	-0.00299	-0.00377	-0.00044	0.15083
10/1/2010	238	0.00847	4636.18	0.00138	0.00028	0.00820	0.15903

10/4/2010	237	-0.00420	4623.81	-0.00267	-0.00347	-0.00073	0.15830
10/5/2010	237	0.00000	4623.19	-0.00013	-0.00112	0.00112	0.15942
10/6/2010	237	0.00000	4638.18	0.00324	0.00201	-0.00201	0.15742
10/7/2010	242	0.02110	4626.19	-0.00259	-0.00340	0.02449	0.18191
10/8/2010	234	-0.03306	4620.21	-0.00129	-0.00220	-0.03086	0.15105
10/11/2010	236	0.00855	4611.37	-0.00191	-0.00277	0.01132	0.16237
10/12/2010	234	-0.00847	4642.28	0.00670	0.00521	-0.01369	0.14869
10/13/2010	232	-0.00855	4612.57	-0.00640	-0.00693	-0.00161	0.14707
10/14/2010	231	-0.00431	4608.36	-0.00091	-0.00185	-0.00246	0.14461
10/15/2010	231	0.00000	4625.96	0.00382	0.00254	-0.00254	0.14207
10/18/2010	232	0.00433	4629.26	0.00071	-0.00034	0.00467	0.14673
10/19/2010	232	0.00000	4648.26	0.00410	0.00280	-0.00280	0.14393
10/21/2010	231	-0.00431	4664.03	0.00339	0.00215	-0.00646	0.13747
10/22/2010	231	0.00000	4678.1	0.00302	0.00180	-0.00180	0.13568
10/25/2010	227	-0.01732	4666.21	-0.00254	-0.00336	-0.01396	0.12172
10/26/2010	229	0.00881	4701.15	0.00749	0.00594	0.00287	0.12459
10/27/2010	228	-0.00437	4649.52	-0.01098	-0.01118	0.00681	0.13140
10/28/2010	228	0.00000	4640.42	-0.00196	-0.00281	0.00281	0.13422
10/29/2010	225	-0.01316	4659.56	0.00412	0.00282	-0.01598	0.11823
11/1/2010	223	-0.00889	4675.17	0.00335	0.00211	-0.01099	0.10724
11/2/2010	224	0.00448	4686.98	0.00253	0.00134	0.00314	0.11038
11/3/2010	223	-0.00446	4647.21	-0.00849	-0.00887	0.00440	0.11478
11/4/2010	222	-0.00448	4629.03	-0.00391	-0.00463	0.00014	0.11493
11/5/2010	222	0.00000	4652.09	0.00498	0.00362	-0.00362	0.11131
11/8/2010	224	0.00901	4668	0.00342	0.00217	0.00684	0.11815
11/9/2010	218	-0.02679	4626.47	-0.00890	-0.00925	-0.01754	0.10061
11/10/2010	218	0.00000	4622.46	-0.00087	-0.00180	0.00180	0.10241
11/11/2010	214	-0.01835	4587.59	-0.00754	-0.00799	-0.01036	0.09206
11/12/2010	212	-0.00935	4595.48	0.00172	0.00059	-0.00994	0.08212
11/15/2010	211	-0.00472	4574.28	-0.00461	-0.00528	0.00056	0.08268
11/16/2010	211	0.00000	4546.28	-0.00612	-0.00667	0.00667	0.08935

**Annex IV: Longhorn Publishers Rights Issue Event Date 4/7/16**

<b>DATE</b>	<b>STOCK PRICE</b>	<b>STOCK RETURN</b>	<b>NSE 20 INDEX</b>	<b>MARKET RETURN</b>	<b>EXPECTED RERURNS</b>	<b>ABNORNAL RETURNS</b>	<b>CUMULATIVE ABNORMAL RETURNS</b>
2/19/2016	5.3		3834.57				
2/22/2016	5.75	0.08491	3814.06	-0.00535	0.00479	0.08012	0.08012
2/23/2016	5.9	0.02609	3844.58	0.00800	-0.00467	0.03075	0.11087
2/24/2016	5.95	0.00847	3850.93	0.00165	-0.00017	0.00864	0.11952
2/25/2016	6	0.00840	3867.06	0.00419	-0.00197	0.01037	0.12988
2/26/2016	5.95	-0.00833	3871.62	0.00118	0.00017	-0.00850	0.12139
2/29/2016	5.65	-0.05042	3862.24	-0.00242	0.00272	-0.05314	0.06825
3/1/2016	5.7	0.00885	3884.01	0.00564	-0.00299	0.01184	0.08009
3/2/2016	5.85	0.02632	3932.86	0.01258	-0.00790	0.03422	0.11431
3/3/2016	5.75	-0.01709	3932.48	-0.00010	0.00107	-0.01816	0.09615
3/4/2016	5.7	-0.00870	3981.47	0.01246	-0.00782	-0.00088	0.09527
3/7/2016	5.65	-0.00877	3980.09	-0.00035	0.00125	-0.01002	0.08526
3/8/2016	5.5	-0.02655	3941.46	-0.00971	0.00787	-0.03442	0.05084
3/9/2016	5.05	-0.08182	3951.42	0.00253	-0.00079	-0.08103	-0.03019
3/10/2016	5.2	0.02970	3949.82	-0.00040	0.00129	0.02842	-0.00178
3/11/2016	5.3	0.01923	3958.82	0.00228	-0.00061	0.01984	0.01807
3/14/2016	5.4	0.01887	3953.13	-0.00144	0.00202	0.01685	0.03492
3/15/2016	5.3	-0.01852	3921.1	-0.00810	0.00674	-0.02526	0.00966
3/16/2016	5.2	-0.01887	3925.25	0.00106	0.00025	-0.01912	-0.00946
3/17/2016	5.3	0.01923	3927.65	0.00061	0.00057	0.01866	0.00921
3/18/2016	5.3	0.00000	3946.19	0.00472	-0.00234	0.00234	0.01155
3/21/2016	5.7	0.07547	3938.22	-0.00202	0.00243	0.07304	0.08459
3/22/2016	5.2	-0.08772	3957.06	0.00478	-0.00239	-0.08533	-0.00074
3/23/2016	5.15	-0.00962	3991.95	0.00882	-0.00524	-0.00437	-0.00511
3/24/2016	5.3	0.02913	4001.36	0.00236	-0.00067	0.02980	0.02468
3/29/2016	5.3	0.00000	3995.56	-0.00145	0.00203	-0.00203	0.02265
3/30/2016	5.25	-0.00943	3981.33	-0.00356	0.00352	-0.01296	0.00970
3/31/2016	5.3	0.00952	3982.09	0.00019	0.00086	0.00866	0.01836
4/1/2016	5.25	-0.00943	3996.38	0.00359	-0.00154	-0.00789	0.01046

4/4/2016	5.4	0.02857	4008.5	0.00303	-0.00115	0.02972	0.04018
4/5/2016	5.35	-0.00926	4016.64	0.00203	-0.00044	-0.00882	0.03136
4/6/2016	5.25	-0.01869	4030	0.00333	-0.00135	-0.01734	0.01402
4/7/2016	5.3	0.00952	4054.29	0.00603	-0.00327	0.01279	0.02682
4/8/2016	5	-0.05660	3999.33	-0.01356	0.01060	-0.06720	-0.04039
4/11/2016	5.1	0.02000	3958.57	-0.01019	0.00822	0.01178	-0.02860
4/12/2016	5.35	0.04902	3925.32	-0.00840	0.00695	0.04207	0.01347
4/13/2016	5	-0.06542	3909.47	-0.00404	0.00386	-0.06928	-0.05581
4/14/2016	4.75	-0.05000	3901.45	-0.00205	0.00245	-0.05245	-0.10826
4/15/2016	4.8	0.01053	3920	0.00475	-0.00237	0.01289	-0.09537
4/18/2016	4.95	0.03125	3929.51	0.00243	-0.00072	0.03197	-0.06340
4/19/2016	4.7	-0.05051	3934.58	0.00129	0.00009	-0.05059	-0.11399
4/20/2016	4.55	-0.03191	3939.5	0.00125	0.00011	-0.03203	-0.14602
4/21/2016	4.6	0.01099	3968.75	0.00742	-0.00426	0.01525	-0.13078
4/22/2016	4.7	0.02174	4010.82	0.01060	-0.00651	0.02824	-0.10253
4/25/2016	4.55	-0.03191	4019.85	0.00225	-0.00059	-0.03132	-0.13385
4/26/2016	4.55	0.00000	4012.72	-0.00177	0.00226	-0.00226	-0.13611
4/27/2016	4.6	0.01099	3985.04	-0.00690	0.00588	0.00511	-0.13100
4/28/2016	4.3	-0.06522	3990.2	0.00129	0.00008	-0.06530	-0.19630
4/29/2016	4.55	0.05814	4009.26	0.00478	-0.00238	0.06052	-0.13578
5/3/2016	4.25	-0.06593	4022.61	0.00333	-0.00136	-0.06458	-0.20036
5/4/2016	4.5	0.05882	3989.71	-0.00818	0.00679	0.05203	-0.14833
5/5/2016	4.4	-0.02222	3977.85	-0.00297	0.00310	-0.02533	-0.17365
5/6/2016	4.35	-0.01136	3964.65	-0.00332	0.00335	-0.01471	-0.18837
5/9/2016	4.45	0.02299	3962.95	-0.00043	0.00130	0.02168	-0.16668
5/10/2016	4.7	0.05618	3916.74	-0.01166	0.00926	0.04692	-0.11976
5/11/2016	4.5	-0.04255	3934.43	0.00452	-0.00220	-0.04036	-0.16011
5/12/2016	4.5	0.00000	3923.42	-0.00280	0.00298	-0.00298	-0.16309
5/13/2016	4.55	0.01111	3927.69	0.00109	0.00023	0.01088	-0.15221
5/16/2016	4.6	0.01099	3907.09	-0.00524	0.00471	0.00628	-0.14594
5/17/2016	4.65	0.01087	3866.97	-0.01027	0.00827	0.00260	-0.14334

**Annex V: Olympia Capital Holdings Rights Issue Event Date 6/26/07**

<b>DATE</b>	<b>STOCK PRICE</b>	<b>STOCK RETURN</b>	<b>NSE 20 INDEX</b>	<b>MARKET RETURN</b>	<b>EXPECTED RETURNS</b>	<b>ABNORMAL RETURNS</b>	<b>CUMULATIVE ABNORMAL RETURNS</b>
5/10/2007	19		5071.33				
5/11/2007	19	0.00000	5114.17	0.00845	0.00651	-0.00651	-0.00651
5/14/2007	20	0.05263	5181.77	0.01322	0.00510	0.04753	0.04102
5/15/2007	20	0.00000	5169.28	-0.00241	0.00971	-0.00971	0.03131
5/16/2007	18.4	-0.08000	5179.21	0.00192	0.00843	-0.08843	-0.05712
5/17/2007	20	0.08696	5175.11	-0.00079	0.00923	0.07772	0.02060
5/18/2007	19	-0.05000	5169.34	-0.00111	0.00933	-0.05933	-0.03873
5/21/2007	17.5	-0.07895	5191.53	0.00429	0.00773	-0.08668	-0.12541
5/22/2007	18	0.02857	5154.41	-0.00715	0.01111	0.01746	-0.10795
5/23/2007	18	0.00000	5108.69	-0.00887	0.01162	-0.01162	-0.11956
5/24/2007	18	0.00000	5132.74	0.00471	0.00761	-0.00761	-0.12717
5/25/2007	18	0.00000	5134.51	0.00034	0.00890	-0.00890	-0.13607
5/28/2007	18	0.00000	5118.39	-0.00314	0.00993	-0.00993	-0.14600
5/29/2007	18	0.00000	5148.23	0.00583	0.00728	-0.00728	-0.15328
5/30/2007	17.5	-0.02778	5051.21	-0.01885	0.01456	-0.04234	-0.19562
5/31/2007	16.2	-0.07429	5001.77	-0.00979	0.01189	-0.08617	-0.28179
6/4/2007	16.45	0.01543	5043.35	0.00831	0.00655	0.00888	-0.27290
6/5/2007	18	0.09422	5063.98	0.00409	0.00779	0.08643	-0.18647
6/6/2007	19	0.05556	5065.62	0.00032	0.00890	0.04665	-0.13982
6/7/2007	18	-0.05263	5054.35	-0.00222	0.00966	-0.06229	-0.20211
6/8/2007	18.5	0.02778	5068.68	0.00284	0.00816	0.01961	-0.18250
6/11/2007	18	-0.02703	5064.57	-0.00081	0.00924	-0.03627	-0.21876
6/12/2007	18	0.00000	5074.08	0.00188	0.00845	-0.00845	-0.22721
6/13/2007	18	0.00000	5089.22	0.00298	0.00812	-0.00812	-0.23533
6/14/2007	18	0.00000	5096.68	0.00147	0.00857	-0.00857	-0.24390
6/15/2007	18	0.00000	5137.45	0.00800	0.00664	-0.00664	-0.25054
6/18/2007	18	0.00000	5163.47	0.00506	0.00751	-0.00751	-0.25804



6/19/2007	18.2	0.01111	5141.52	-0.00425	0.01025	0.00086	-0.25718
6/20/2007	18.2	0.00000	5147.85	0.00123	0.00864	-0.00864	-0.26582
6/21/2007	18.45	0.01374	5144.93	-0.00057	0.00917	0.00457	-0.26125
6/22/2007	18.45	0.00000	5124.14	-0.00404	0.01019	-0.01019	-0.27144
6/25/2007	19.45	0.05420	5052.08	-0.01406	0.01315	0.04105	-0.23039
6/26/2007	20	0.02828	5080.55	0.00564	0.00734	0.02094	-0.20945
6/27/2007	20.25	0.01250	5093.51	0.00255	0.00825	0.00425	-0.20520
6/28/2007	19.95	-0.01481	5163.88	0.01382	0.00492	-0.01974	-0.22494
6/29/2007	18.45	-0.07519	5146.73	-0.00332	0.00998	-0.08517	-0.31011
7/2/2007	19.5	0.05691	5144.2	-0.00049	0.00915	0.04777	-0.26234
7/3/2007	20	0.02564	5127.1	-0.00332	0.00998	0.01566	-0.24668
7/4/2007	22	0.10000	5181.07	0.01053	0.00589	0.09411	-0.15258
7/5/2007	21.5	-0.02273	5165.06	-0.00309	0.00991	-0.03264	-0.18521
7/6/2007	22	0.02326	5160.89	-0.00081	0.00924	0.01402	-0.17120
7/9/2007	22	0.00000	5163.53	0.00051	0.00885	-0.00885	-0.18005
7/10/2007	21.75	-0.01136	5120.4	-0.00835	0.01146	-0.02283	-0.20287
7/11/2007	21.75	0.00000	5112.62	-0.00152	0.00945	-0.00945	-0.21232
7/12/2007	21.5	-0.01149	5095.68	-0.00331	0.00998	-0.02147	-0.23379
7/13/2007	21.75	0.01163	5117.37	0.00426	0.00774	0.00388	-0.22991
7/16/2007	21.5	-0.01149	5121.08	0.00072	0.00879	-0.02028	-0.25019
7/17/2007	21.75	0.01163	5104.13	-0.00331	0.00998	0.00165	-0.24854
7/18/2007	21.75	0.00000	5123.23	0.00374	0.00790	-0.00790	-0.25643
7/19/2007	21.5	-0.01149	5131.99	0.00171	0.00850	-0.01999	-0.27642
7/20/2007	21	-0.02326	5137.51	0.00108	0.00868	-0.03194	-0.30836
7/23/2007	20	-0.04762	5154.42	0.00329	0.00803	-0.05565	-0.36401
7/24/2007	20.75	0.03750	5193.14	0.00751	0.00678	0.03072	-0.33329
7/25/2007	20.25	-0.02410	5230.04	0.00711	0.00690	-0.03100	-0.36430
7/26/2007	22	0.08642	5262.22	0.00615	0.00718	0.07923	-0.28506
7/27/2007	20	-0.09091	5317.73	0.01055	0.00589	-0.09680	-0.38186
7/30/2007	20	0.00000	5329.56	0.00222	0.00834	-0.00834	-0.39020
7/31/2007	20	0.00000	5340.08	0.00197	0.00842	-0.00842	-0.39862
8/1/2007	21	0.05000	5321.19	-0.00354	0.01004	0.03996	-0.35866
8/2/2007	20	-0.04762	5310.55	-0.00200	0.00959	-0.05721	-0.41587

**Annex VI: TPS Eastern Africa (Serena) Rights Issue Event Date 3/29/10**

<b>DATE</b>	<b>STOCK PRICE</b>	<b>STOCK RETURN</b>	<b>NSE 20 INDEX</b>	<b>MARKET RETURN</b>	<b>EXPECTED RETURNS</b>	<b>ABNORMAL RETURNS</b>	<b>CUMULATIVE ABNORMAL RETURNS</b>
<b>2/19/2016</b>	48.25		3591.02				
2/22/2016	49	0.01554	3606.46	0.00430	0.00251	0.01304	0.01304
2/23/2016	47.75	-0.02551	3600	-0.00179	0.00462	-0.03013	-0.01710
2/24/2016	47.25	-0.01047	3570.92	-0.00808	0.00680	-0.01727	-0.03437
2/25/2016	44.5	-0.05820	3520.92	-0.01400	0.00886	-0.06706	-0.10143
2/26/2016	46.25	0.03933	3536.72	0.00449	0.00244	0.03688	-0.06455
2/29/2016	46.5	0.00541	3553.99	0.00488	0.00231	0.00310	-0.06145
3/1/2016	44.75	-0.03763	3562.47	0.00239	0.00317	-0.04081	-0.10225
3/2/2016	45.5	0.01676	3596.21	0.00947	0.00071	0.01605	-0.08621
3/3/2016	46	0.01099	3634.11	0.01054	0.00034	0.01065	-0.07556
3/4/2016	46	0.00000	3627.3	-0.00187	0.00465	-0.00465	-0.08021
3/7/2016	47	0.02174	3629.41	0.00058	0.00380	0.01794	-0.06227
3/8/2016	46	-0.02128	3621.04	-0.00231	0.00480	-0.02608	-0.08835
3/9/2016	48.75	0.05978	3657.52	0.01007	0.00050	0.05928	-0.02907
3/10/2016	46	-0.05641	3666.53	0.00246	0.00315	-0.05956	-0.08862
3/11/2016	46.25	0.00543	3675.54	0.00246	0.00315	0.00229	-0.08634
3/14/2016	48.25	0.04324	3706.8	0.00850	0.00105	0.04219	-0.04414
3/15/2016	49.25	0.02073	3743.11	0.00980	0.00060	0.02012	-0.02402
3/16/2016	49.75	0.01015	3810.74	0.01807	-0.00227	0.01242	-0.01160
3/17/2016	50	0.00503	3900.12	0.02345	-0.00414	0.00916	-0.00243
3/18/2016	49	-0.02000	3964.86	0.01660	-0.00176	-0.01824	-0.02067
3/21/2016	50	0.02041	4015.13	0.01268	-0.00040	0.02081	0.00014
3/22/2016	50.5	0.01000	4061.1	0.01145	0.00003	0.00997	0.01011
3/23/2016	49.25	-0.02475	4096.45	0.00870	0.00098	-0.02573	-0.01562
3/24/2016	49.75	0.01015	4066.29	-0.00736	0.00655	0.00360	-0.01203
3/29/2016	51	0.02513	4088.17	0.00538	0.00213	0.02299	0.01097
3/30/2016	51.5	0.00980	3954.4	-0.03272	0.01535	-0.00555	0.00542
3/31/2016	52	0.00971	3990.22	0.00906	0.00086	0.00885	0.01427
4/1/2016	51	-0.01923	4010.56	0.00510	0.00223	-0.02146	-0.00719

4/4/2016	50	-0.01961	4017.81	0.00181	0.00337	-0.02298	-0.03017
4/5/2016	51.5	0.03000	4042.87	0.00624	0.00184	0.02816	-0.00201
4/6/2016	51	-0.00971	4055.16	0.00304	0.00295	-0.01265	-0.01466
4/7/2016	51	0.00000	4029.73	-0.00627	0.00618	-0.00618	-0.02084
4/8/2016	58.5	0.14706	4057.63	0.00692	0.00160	0.14546	0.12462
4/11/2016	63.5	0.08547	4072.93	0.00377	0.00269	0.08278	0.20740
4/12/2016	63	-0.00787	4060.03	-0.00317	0.00510	-0.01297	0.19443
4/13/2016	63.5	0.00794	4061.93	0.00047	0.00384	0.00410	0.19853
4/14/2016	63.5	0.00000	4059.15	-0.00068	0.00424	-0.00424	0.19429
4/15/2016	60.5	-0.04724	4062.91	0.00093	0.00368	-0.05092	0.14337
4/18/2016	63.5	0.04959	4067.4	0.00111	0.00362	0.04597	0.18934
4/19/2016	63.5	0.00000	4074.02	0.00163	0.00344	-0.00344	0.18590
4/20/2016	63.5	0.00000	4060.17	-0.00340	0.00518	-0.00518	0.18072
4/21/2016	63.5	0.00000	4073.86	0.00337	0.00283	-0.00283	0.17789
4/22/2016	62.5	-0.01575	4099.44	0.00628	0.00182	-0.01757	0.16032
4/25/2016	63.5	0.01600	4111.49	0.00294	0.00298	0.01302	0.17334
4/26/2016	65	0.02362	4095.56	-0.00387	0.00534	0.01828	0.19162
4/27/2016	64.5	-0.00769	4109.86	0.00349	0.00279	-0.01048	0.18114
4/28/2016	66.5	0.03101	4148.09	0.00930	0.00077	0.03024	0.21137
4/29/2016	66.5	0.00000	4181.41	0.00803	0.00121	-0.00121	0.21016
5/3/2016	65.5	-0.01504	4226.03	0.01067	0.00030	-0.01533	0.19483
5/4/2016	61	-0.06870	4278.31	0.01237	-0.00029	-0.06841	0.12642
5/5/2016	59	-0.03279	4289.85	0.00270	0.00306	-0.03585	0.09057
5/6/2016	59.5	0.00847	4280.8	-0.00211	0.00473	0.00374	0.09431
5/9/2016	63.5	0.06723	4270.87	-0.00232	0.00480	0.06242	0.15673
5/10/2016	64	0.00787	4233.24	-0.00881	0.00706	0.00082	0.15755
5/11/2016	63.5	-0.00781	4217.18	-0.00379	0.00532	-0.01313	0.14442
5/12/2016	63.5	0.00000	4205.54	-0.00276	0.00496	-0.00496	0.13946
5/13/2016	63	-0.00787	4243.57	0.00904	0.00086	-0.00874	0.13072
5/16/2016	63	0.00000	4270.74	0.00640	0.00178	-0.00178	0.12895
5/17/2016	61	-0.03175	4277.63	0.00161	0.00344	-0.03519	0.09376

**Annex VII: Uchumi Supermarket Limited Rights Issue Event Date 10/14/14**

<b>DATE</b>	<b>STOCK PRICE</b>	<b>STOCK RETURN</b>	<b>NSE 20 INDEX</b>	<b>MARKET RETURN</b>	<b>EXPECTED RETURNS</b>	<b>ABNORMAL RETURNS</b>	<b>CUMULATIVE ABNORMAL RETURNS</b>
8/29/2014	12.45		5139.39				
9/1/2014	12.25	-0.01606	5140.92	0.00030	0.00101	-0.01707	-0.01707
9/2/2014	11.85	-0.03265	5163.21	0.00434	0.00114	-0.03379	-0.05087
9/3/2014	11.85	0.00000	5163.28	0.00001	0.00100	-0.00100	-0.05187
9/4/2014	11.45	-0.03376	5151.15	-0.00235	0.00092	-0.03468	-0.08655
9/5/2014	11.9	0.03930	5160.32	0.00178	0.00106	0.03824	-0.04830
9/8/2014	11.9	0.00000	5168.8	0.00164	0.00105	-0.00105	-0.04936
9/9/2014	11.75	-0.01261	5189.89	0.00408	0.00113	-0.01374	-0.06310
9/10/2014	11.5	-0.02128	5190.01	0.00002	0.00100	-0.02228	-0.08537
9/11/2014	11.25	-0.02174	5161.21	-0.00555	0.00082	-0.02256	-0.10793
9/12/2014	10.55	-0.06222	5169.5	0.00161	0.00105	-0.06327	-0.17121
9/15/2014	11.1	0.05213	5182.98	0.00261	0.00109	0.05105	-0.12016
9/16/2014	11.15	0.00450	5217.25	0.00661	0.00122	0.00329	-0.11687
9/17/2014	11.55	0.03587	5209.1	-0.00156	0.00095	0.03493	-0.08195
9/18/2014	11.5	-0.00433	5222.87	0.00264	0.00109	-0.00542	-0.08736
9/19/2014	11.4	-0.00870	5307.52	0.01621	0.00153	-0.01023	-0.09759
9/22/2014	11.25	-0.01316	5406.39	0.01863	0.00161	-0.01477	-0.11235
9/23/2014	10.85	-0.03556	5377.29	-0.00538	0.00082	-0.03638	-0.14873
9/24/2014	10.65	-0.01843	5322.65	-0.01016	0.00067	-0.01910	-0.16783
9/25/2014	10.35	-0.02817	5249.07	-0.01382	0.00055	-0.02872	-0.19655
9/26/2014	10.4	0.00483	5216.96	-0.00612	0.00080	0.00403	-0.19252
9/29/2014	10	-0.03846	5257.81	0.00783	0.00126	-0.03972	-0.23224
9/30/2014	10.4	0.04000	5255.62	-0.00042	0.00099	0.03901	-0.19322
10/1/2014	10.35	-0.00481	5267.54	0.00227	0.00107	-0.00588	-0.19911
10/2/2014	10.35	0.00000	5249.65	-0.00340	0.00089	-0.00089	-0.19999
10/3/2014	10.6	0.02415	5292.42	0.00815	0.00127	0.02289	-0.17711
10/6/2014	10.6	0.00000	5323.49	0.00587	0.00119	-0.00119	-0.17830
10/7/2014	10.25	-0.03302	5300.21	-0.00437	0.00086	-0.03388	-0.21217
10/8/2014	10.3	0.00488	5287.87	-0.00233	0.00092	0.00395	-0.20822

10/9/2014	10.05	-0.02427	5272.53	-0.00290	0.00091	-0.02518	-0.23340
10/10/2014	9.95	-0.00995	5280.46	0.00150	0.00105	-0.01100	-0.24440
10/13/2014	10.15	0.02010	5311.27	0.00583	0.00119	0.01891	-0.22549
10/14/2014	9.9	-0.02463	5299.12	-0.00229	0.00093	-0.02556	-0.25104
10/15/2014	9.85	-0.00505	5304.86	0.00108	0.00104	-0.00609	-0.25713
10/16/2014	9.9	0.00508	5290.09	-0.00278	0.00091	0.00417	-0.25296
10/17/2014	10.3	0.04040	5279.88	-0.00193	0.00094	0.03947	-0.21349
10/21/2014	9.8	-0.04854	5259.18	-0.00392	0.00087	-0.04942	-0.26291
10/22/2014	9.8	0.00000	5251.09	-0.00154	0.00095	-0.00095	-0.26386
10/23/2014	9.65	-0.01531	5259.43	0.00159	0.00105	-0.01636	-0.28022
10/24/2014	9.4	-0.02591	5197.67	-0.01174	0.00062	-0.02652	-0.30674
10/27/2014	9.5	0.01064	5174.41	-0.00448	0.00085	0.00978	-0.29696
10/28/2014	9.3	-0.02105	5198.89	0.00473	0.00115	-0.02221	-0.31916
10/29/2014	8.9	-0.04301	5211.44	0.00241	0.00108	-0.04409	-0.36325
10/30/2014	8.85	-0.00562	5233.42	0.00422	0.00114	-0.00676	-0.37001
10/31/2014	8.5	-0.03955	5194.89	-0.00736	0.00076	-0.04031	-0.41032
11/3/2014	8	-0.05882	5193.11	-0.00034	0.00099	-0.05981	-0.47013
11/4/2014	8	0.00000	5151.46	-0.00802	0.00074	-0.00074	-0.47087
11/5/2014	8.5	0.06250	5101.11	-0.00977	0.00068	0.06182	-0.40905
11/6/2014	8	-0.05882	5075.83	-0.00496	0.00084	-0.05966	-0.46871
11/7/2014	8	0.00000	5074.93	-0.00018	0.00099	-0.00099	-0.46970
11/10/2014	8.05	0.00625	5058.41	-0.00326	0.00089	0.00536	-0.46435
11/11/2014	8.2	0.01863	5098.4	0.00791	0.00126	0.01738	-0.44697
11/12/2014	8.2	0.00000	5138.46	0.00786	0.00126	-0.00126	-0.44823
11/13/2014	8.4	0.02439	5123.45	-0.00292	0.00090	0.02349	-0.42474
11/14/2014	9.15	0.08929	5139.37	0.00311	0.00110	0.08818	-0.33656
11/17/2014	9.4	0.02732	5111.47	-0.00543	0.00082	0.02650	-0.31006
11/18/2014	9.4	0.00000	5198.84	0.01709	0.00156	-0.00156	-0.31162
11/19/2014	9.5	0.01064	5117.08	-0.01573	0.00049	0.01015	-0.30146
11/20/2014	9.7	0.02105	5145.28	0.00551	0.00118	0.01987	-0.28159
11/21/2014	9.6	-0.01031	5166.45	0.00411	0.00113	-0.01144	-0.29304

**Annex VIII: Rights Issue Announcements Sample**

<b>DAYS</b>	<b>KENGEN</b>	<b>KENYA AIRWAYS</b>	<b>KPLC</b>	<b>LONGHORN</b>	<b>UCHUMI</b>	<b>TOTAL AR</b>	<b>SAMPLE AVERAGE AR</b>	<b>SAMPLE CUMULATIVE AVERAGE AR</b>
-30	-0.0223272	0.00790	0.0009964	0.08012	-0.01707	0.056137175	0.008019596	0.008019596
-29	-0.0016311	0.00439	0.0008662	0.03075	-0.03379	0.017978881	0.002568412	0.010588008
-28	-0.0128097	-0.01119	0.0124144	0.00864	-0.00100	-0.030926321	-0.00441805	0.006169962
-27	-0.0083512	-0.00883	0.0126906	0.01037	-0.03468	-0.184291305	-0.02632733	-0.020157367
-26	-0.0100851	0.00662	-0.0041421	-0.00850	0.03824	0.136743228	0.019534747	-0.00062262
-25	0.0025567	0.00137	0.0075004	-0.05314	-0.00105	-0.098995357	-0.01414219	-0.014764814
-24	0.0300873	0.00275	-0.0080587	0.01184	-0.01374	-0.104605265	-0.01494361	-0.029708423
-23	-0.0010818	0.00434	0.0070742	0.03422	-0.02228	0.055787637	0.007969662	-0.021738761
-22	-0.0102909	-0.00091	0.0030722	-0.01816	-0.02256	-0.049815218	-0.00711646	-0.028855221
-21	-0.0098827	-0.02153	0.021056	-0.00088	-0.06327	-0.086766066	-0.01239515	-0.041250373
-20	0.0267148	-0.01114	0.0067779	-0.01002	0.05105	0.072429024	0.010347003	-0.03090337
-19	0.0256295	-0.00538	0.0167651	-0.03442	0.00329	-0.030121311	-0.00430304	-0.035206414
-18	0.0029117	-0.03859	0.0366752	-0.08103	0.03493	0.006893509	0.000984787	-0.034221627
-17	-0.0004781	0.02258	0.072923	0.02842	-0.00542	0.016134872	0.002304982	-0.031916645
-16	0.0014967	0.00046	-0.0076446	0.01984	-0.01023	-0.079955257	-0.01142218	-0.043338825
-15	-0.0134222	0.00378	-0.0199691	0.01685	-0.01477	0.023549813	0.003364259	-0.039974566
-14	-0.0210567	-0.00822	-0.0188495	-0.02526	-0.03638	-0.003205628	-0.00045795	-0.040432513
-13	0.0264299	-0.00954	0.0164818	-0.01912	-0.01910	0.054225341	0.007746477	-0.032686035
-12	0.006759	0.00310	0.0323836	0.01866	-0.02872	-0.020935235	-0.00299075	-0.035676783
-11	-0.0007566	-0.01664	0.0261128	0.00234	0.00403	0.016463511	0.00235193	-0.033324853
-10	0.0283096	0.01964	-0.0177975	0.07304	-0.03972	0.048020967	0.006860138	-0.026464715
-9	-0.0194293	0.00242	-0.0086978	-0.08533	0.03901	-0.07049873	-0.01007125	-0.036535962
-8	0.0008879	-0.00106	-0.0071979	-0.00437	-0.00588	-0.051480634	-0.00735438	-0.043890339
-7	0.0179345	-0.00089	-0.0006409	0.02980	-0.00089	0.04033796	0.005762566	-0.038127773
-6	-0.017399	0.02543	-0.0227472	-0.00203	0.02289	0.022501386	0.003214484	-0.034913289
-5	-0.0134705	0.03703	-0.0067681	-0.01296	-0.00119	-0.010415102	-0.00148787	-0.036401161
-4	-0.0044509	-0.02731	-0.0004446	0.00866	-0.03388	-0.047709799	-0.00681569	-0.043216846
-3	0.0033	-0.06333	0.0081971	-0.00789	0.00395	-0.085870631	-0.01226723	-0.055484079
-2	-0.0317781	-0.09230	-0.0007283	0.02972	-0.02518	-0.138673613	-0.01981052	-0.075294595

-1	-0.0079212	0.00639	0.0011243	-0.00882	-0.01100	-0.002255144	-0.00032216	-0.075616759
0	-0.0144058	0.00322	-0.0020057	-0.01734	0.01891	0.01678329	0.002397613	-0.073219146
0	-0.0774402	-0.01098	0.0244934	0.01279	-0.02556	-0.061928288	-0.0088469	-0.082066044
0	0.0079331	-0.02278	-0.0308596	-0.06720	-0.00609	0.030722931	0.00438899	-0.077677054
1	-0.0104714	-0.01651	0.0113207	0.01178	0.00417	0.06332806	0.009046866	-0.068630188
2	-0.0191787	-0.04024	-0.0136883	0.04207	0.03947	-0.089708382	-0.01281548	-0.081445671
3	-0.0054894	-0.03779	-0.0016143	-0.06928	-0.04942	-0.111726672	-0.01596095	-0.097406625
4	-0.037229	0.04387	-0.0024643	-0.05245	-0.00095	-0.037799212	-0.00539989	-0.102806512
5	-0.0170093	-0.00243	-0.0025403	0.01289	-0.01636	0.017732781	0.002533254	-0.100273257
6	-0.0119265	0.01929	0.0046677	0.03197	-0.02652	0.030810068	0.004401438	-0.095871819
7	-0.0163045	0.00316	-0.0028047	-0.05059	0.00978	-0.046172372	-0.00659605	-0.102467872
8	0.0055407	-0.00268	-0.0064553	-0.03203	-0.02221	-0.071859848	-0.01026569	-0.112733565
9	-0.0144077	0.00610	-0.0017965	0.01525	-0.04409	-0.06460373	-0.0092291	-0.121962669
10	-0.0122668	-0.00623	-0.0139599	0.02824	-0.00676	-0.037988997	-0.005427	-0.127389669
11	0.0197418	-0.00067	0.0028693	-0.03132	-0.04031	-0.05813918	-0.0083056	-0.135695266
12	0.0070928	0.00333	0.0068139	-0.00226	-0.05981	-0.02267392	-0.00323913	-0.138934397
13	0.0236188	0.00617	0.0028143	0.00511	-0.00074	0.00621404	0.00088772	-0.138046677
14	0.0232775	-0.00678	-0.0159814	-0.06530	0.06182	0.028918605	0.004131229	-0.133915448
15	0.013166	0.02661	-0.0109944	0.06052	-0.05966	0.020535361	0.002933623	-0.130981825
16	0.0034036	-0.01923	0.0031426	-0.06458	-0.00099	-0.11357513	-0.01622502	-0.147206844
17	-0.0028385	0.00042	0.0044015	0.05203	0.00536	-0.04097966	-0.00585424	-0.153061081
18	0.0136032	-0.00075	0.0001421	-0.02533	0.01738	-0.086460324	-0.01235147	-0.165412556
19	-0.0177929	-0.00246	-0.0036179	-0.01471	-0.00126	-0.005379528	-0.0007685	-0.16618106
20	-0.0292076	0.03062	0.0068387	0.02168	0.02349	0.084839809	0.012119973	-0.154061087
21	-0.0341315	0.00575	-0.0175384	0.04692	0.08818	0.169244415	0.024177774	-0.129883313
22	0.021279	-0.00401	0.0018035	-0.04036	0.02650	-0.104714218	-0.01495917	-0.144842487
23	0.0084864	0.01075	-0.0103557	-0.00298	-0.00156	-0.008961881	-0.00128027	-0.146122756
24	-0.0114563	0.01588	-0.0099401	0.01088	0.01015	-0.001640266	-0.00023432	-0.14635708
25	0.0023197	0.00545	0.0005595	0.00628	0.01987	0.072653328	0.010379047	-0.135978033
26	0.0002505	-0.00122	0.0066743	0.00260	-0.01144	-0.095531719	-0.01364739	-0.149625421
27	0.0144922	0.00349	0.0162538	0.03335	-0.02691	0.095246896	0.013606699	-0.136018722

**Annex IX: Centum Investments Limited Bond Issue Event Date 5/6/09**

<b>DATE</b>	<b>STOCK PRICE</b>	<b>STOCK RETURN</b>	<b>20 NSE INDEX</b>	<b>MARKET RETURN</b>	<b>EXPECTED RETURN</b>	<b>ABNORMAL RETURN</b>	<b>CUMULATIVE ABNORMAL RETURN</b>
4/9/2015	59.5		5128.03				
4/10/2015	58.5	-0.01681	5123.97	-0.00079	0.00017	-0.01698	-0.01698
4/13/2015	60	0.02564	5136.2	0.00239	0.00350	0.02214	0.00516
4/14/2015	60	0.00000	5128.02	-0.00159	-0.00067	0.00067	0.00583
4/15/2015	59.5	-0.00833	5126.02	-0.00039	0.00059	-0.00892	-0.00309
4/16/2015	59.5	0.00000	5078.74	-0.00922	-0.00867	0.00867	0.00557
4/17/2015	59.5	0.00000	5093	0.00281	0.00394	-0.00394	0.00163
4/20/2015	59.5	0.00000	5102.04	0.00177	0.00286	-0.00286	-0.00123
4/21/2015	60	0.00840	5073.86	-0.00552	-0.00479	0.01319	0.01196
4/22/2015	60	0.00000	5042.85	-0.00611	-0.00541	0.00541	0.01737
4/23/2015	61	0.01667	5026.79	-0.00318	-0.00234	0.01900	0.03637
4/24/2015	61	0.00000	5061.09	0.00682	0.00815	-0.00815	0.02822
4/27/2015	61	0.00000	5056.27	-0.00095	0.00000	0.00000	0.02822
4/28/2015	62	0.01639	5055	-0.00025	0.00074	0.01566	0.04388
4/29/2015	64	0.03226	5061.11	0.00121	0.00227	0.02999	0.07387
4/30/2015	63.5	-0.00781	5091.43	0.00599	0.00728	-0.01509	0.05878
5/4/2015	64.5	0.01575	5085.4	-0.00118	-0.00024	0.01599	0.07477
5/5/2015	64.5	0.00000	5100.51	0.00297	0.00411	-0.00411	0.07065
5/6/2015	64.5	0.00000	5083.94	-0.00325	-0.00240	0.00240	0.07306
5/7/2015	67	0.03876	5074.76	-0.00181	-0.00089	0.03965	0.11271
5/8/2015	65	-0.02985	5070.75	-0.00079	0.00017	-0.03002	0.08269
5/11/2015	64.5	-0.00769	5042.52	-0.00557	-0.00483	-0.00286	0.07983
5/12/2015	63.5	-0.01550	5012.94	-0.00587	-0.00515	-0.01036	0.06947
5/13/2015	62.5	-0.01575	4980.48	-0.00648	-0.00579	-0.00996	0.05951
5/14/2015	63.5	0.01600	4979.71	-0.00015	0.00084	0.01516	0.07467
5/15/2015	63.5	0.00000	4980.71	0.00020	0.00121	-0.00121	0.07346
5/18/2015	62.5	-0.01575	4932.32	-0.00972	-0.00918	-0.00657	0.06689
5/19/2015	62	-0.00800	4941.71	0.00190	0.00300	-0.01100	0.05590
5/20/2015	62	0.00000	4924.45	-0.00349	-0.00266	0.00266	0.05856
5/21/2015	62	0.00000	4928.91	0.00091	0.00195	-0.00195	0.05661



5/22/2015	62	0.00000	4879.95	-0.00993	-0.00941	0.00941	0.06602
5/25/2015	62	0.00000	4858.61	-0.00437	-0.00358	0.00358	0.06960
5/26/2015	62.5	0.00806	4853.44	-0.00106	-0.00012	0.00818	0.07778
5/27/2015	61	-0.02400	4835.75	-0.00364	-0.00282	-0.02118	0.05660
5/28/2015	60.5	-0.00820	4805.89	-0.00617	-0.00547	-0.00273	0.05388
5/29/2015	60.5	0.00000	4786.74	-0.00398	-0.00318	0.00318	0.05705
6/2/2015	60	-0.00826	4816.66	0.00625	0.00755	-0.01582	0.04124
6/3/2015	60.5	0.00833	4790.5	-0.00543	-0.00469	0.01303	0.05426
6/4/2015	61.5	0.01653	4773.79	-0.00349	-0.00266	0.01918	0.07345
6/5/2015	61.5	0.00000	4784.07	0.00215	0.00326	-0.00326	0.07019
6/8/2015	61.5	0.00000	4761.44	-0.00473	-0.00396	0.00396	0.07415
6/9/2015	62.5	0.01626	4754.42	-0.00147	-0.00055	0.01681	0.09095
6/10/2015	63	0.00800	4744.66	-0.00205	-0.00115	0.00915	0.10011
6/11/2015	63	0.00000	4744.95	0.00006	0.00106	-0.00106	0.09904
6/12/2015	63	0.00000	4765.02	0.00423	0.00543	-0.00543	0.09361
6/15/2015	63	0.00000	4795.58	0.00641	0.00772	-0.00772	0.08589
6/16/2015	63	0.00000	4773.23	-0.00466	-0.00388	0.00388	0.08977
6/17/2015	63.5	0.00794	4790.42	0.00360	0.00477	0.00316	0.09293
6/18/2015	64.5	0.01575	4796.26	0.00122	0.00228	0.01347	0.10640
6/19/2015	65.5	0.01550	4778.63	-0.00368	-0.00285	0.01836	0.12476
6/22/2015	66.5	0.01527	4780.48	0.00039	0.00141	0.01386	0.13862
6/23/2015	65	-0.02256	4776.35	-0.00086	0.00009	-0.02265	0.11597
6/24/2015	65	0.00000	4793.77	0.00365	0.00482	-0.00482	0.11115
6/25/2015	65	0.00000	4798.73	0.00103	0.00208	-0.00208	0.10906
6/26/2015	65.5	0.00769	4810.36	0.00242	0.00354	0.00415	0.11322
6/29/2015	65.5	0.00000	4837.58	0.00566	0.00693	-0.00693	0.10629
6/30/2015	65.5	0.00000	4906.07	0.01416	0.01584	-0.01584	0.09045
7/1/2015	65	-0.00763	4858.42	-0.00971	-0.00918	0.00155	0.09199
7/2/2015	63.5	-0.02308	4839.6	-0.00387	-0.00306	-0.02002	0.07198
7/3/2015	63.5	0.00000	4812.57	-0.00559	-0.00485	0.00485	0.07683

**Annex X: East Africa Breweries Limited Bond Issue Event Date 3/3/15**

<b>DATE</b>	<b>STOCK PRICE</b>	<b>STOCK RETURN</b>	<b>20 NSE INDEX</b>	<b>MARKET RETURN</b>	<b>EXPECTED RETURN</b>	<b>ABNORMAL RETURN</b>	<b>CUMULATIVE ABNORMAL RETURN</b>
1/16/2015	305		5203.72				
1/19/2015	305	0.00000	5177.38	-0.00506	-9.25641	9.25641	9.25641
1/20/2015	309	0.01311	5139.06	-0.00740	-9.25845	9.27156	18.52797
1/21/2015	306	-0.00971	5159.96	0.00407	-9.24846	9.23875	27.76672
1/22/2015	309	0.00980	5172.88	0.00250	-9.24982	9.25962	37.02634
1/23/2015	313	0.01294	5217.88	0.00870	-9.24442	9.25737	46.28371
1/26/2015	313	0.00000	5209.84	-0.00154	-9.25334	9.25334	55.53705
1/27/2015	315	0.00639	5213.48	0.00070	-9.25139	9.25778	64.79483
1/28/2015	314	-0.00317	5207.04	-0.00124	-9.25308	9.24990	74.04473
1/29/2015	310	-0.01274	5194.21	-0.00246	-9.25415	9.24141	83.28614
1/30/2015	311	0.00323	5212.11	0.00345	-9.24900	9.25222	92.53837
2/2/2015	312	0.00322	5222.76	0.00204	-9.25022	9.25344	101.79180
2/3/2015	311	-0.00321	5242.61	0.00380	-9.24869	9.24548	111.03729
2/4/2015	311	0.00000	5268.98	0.00503	-9.24762	9.24762	120.28491
2/5/2015	312	0.00322	5284.41	0.00293	-9.24945	9.25266	129.53757
2/6/2015	311	-0.00321	5280.72	-0.00070	-9.25261	9.24940	138.78697
2/9/2015	313	0.00643	5296.07	0.00291	-9.24947	9.25590	148.04287
2/10/2015	320	0.02236	5313.06	0.00321	-9.24921	9.27157	157.31444
2/11/2015	324	0.01250	5330.01	0.00319	-9.24922	9.26172	166.57616
2/12/2015	326	0.00617	5333.86	0.00072	-9.25137	9.25754	175.83371
2/13/2015	332	0.01840	5340.08	0.00117	-9.25098	9.26939	185.10310
2/16/2015	334	0.00602	5357.69	0.00330	-9.24913	9.25515	194.35825
2/17/2015	336	0.00599	5403.72	0.00859	-9.24452	9.25050	203.60875
2/18/2015	341	0.01488	5446.04	0.00783	-9.24518	9.26006	212.86881
2/19/2015	350	0.02639	5473.81	0.00510	-9.24756	9.27395	222.14276
2/20/2015	345	-0.01429	5465.9	-0.00145	-9.25326	9.23897	231.38174
2/23/2015	339	-0.01739	5455.84	-0.00184	-9.25360	9.23621	240.61795
2/24/2015	336	-0.00885	5455.23	-0.00011	-9.25210	9.24325	249.86120
2/25/2015	332	-0.01190	5467.78	0.00230	-9.25000	9.23809	259.09929
2/26/2015	318	-0.04217	5475.84	0.00147	-9.25072	9.20855	268.30784

2/27/2015	309	-0.02830	5491.37	0.00284	-9.24953	9.22123	277.52906
3/2/2015	303	-0.01942	5499.64	0.00151	-9.25069	9.23127	286.76033
3/3/2015	298	-0.01650	5474.45	-0.00458	-9.25599	9.23949	295.99982
3/4/2015	295	-0.01007	5461.08	-0.00244	-9.25413	9.24406	305.24388
3/5/2015	295	0.00000	5411.05	-0.00916	-9.25998	9.25998	314.50386
3/6/2015	299	0.01356	5373.22	-0.00699	-9.25809	9.27165	323.77551
3/9/2015	299	0.00000	5371.69	-0.00028	-9.25225	9.25225	333.02776
3/10/2015	300	0.00334	5368.69	-0.00056	-9.25249	9.25583	342.28359
3/11/2015	300	0.00000	5362.43	-0.00117	-9.25302	9.25302	351.53660
3/12/2015	300	0.00000	5347.54	-0.00278	-9.25442	9.25442	360.79102
3/13/2015	304	0.01333	5350.3	0.00052	-9.25155	9.26488	370.05591
3/16/2015	305	0.00329	5342.17	-0.00152	-9.25332	9.25661	379.31252
3/17/2015	314	0.02951	5313.84	-0.00530	-9.25662	9.28613	388.59865
3/18/2015	325	0.03503	5342.36	0.00537	-9.24733	9.28236	397.88100
3/19/2015	325	0.00000	5346.56	0.00079	-9.25132	9.25132	407.13232
3/20/2015	324	-0.00308	5304.41	-0.00788	-9.25887	9.25579	416.38811
3/23/2015	325	0.00309	5265.67	-0.00730	-9.25836	9.26145	425.64956
3/24/2015	325	0.00000	5254.6	-0.00210	-9.25383	9.25383	434.90339
3/25/2015	327	0.00615	5275.1	0.00390	-9.24860	9.25476	444.15814
3/26/2015	325	-0.00612	5252.74	-0.00424	-9.25569	9.24958	453.40772
3/27/2015	324	-0.00308	5242.35	-0.00198	-9.25372	9.25065	462.65837
3/30/2015	324	0.00000	5242.62	0.00005	-9.25196	9.25196	471.91032
3/31/2015	311	-0.04012	5248.16	0.00106	-9.25108	9.21096	481.12128
4/1/2015	316	0.01608	5240.53	-0.00145	-9.25327	9.26934	490.39062
4/2/2015	321	0.01582	5196.86	-0.00833	-9.25926	9.27508	499.66570
4/7/2015	324	0.00935	5171.76	-0.00483	-9.25621	9.26555	508.93125
4/8/2015	324	0.00000	5142.35	-0.00569	-9.25695	9.25695	518.18821
4/9/2015	323	-0.00309	5128.03	-0.00278	-9.25443	9.25134	527.43955
4/10/2015	325	0.00619	5123.97	-0.00079	-9.25269	9.25888	536.69843
4/13/2015	333	0.02462	5136.2	0.00239	-9.24992	9.27454	545.97296

**Annex XI: Kengen Company Limited Bond Issue Event Date 9/8/09**

<b>DATE</b>	<b>STOCK PRICE</b>	<b>STOCK RETURN</b>	<b>20 NSE INDEX</b>	<b>MARKET RETURN</b>	<b>EXPECTED RETURN</b>	<b>ABNORMAL RETURN</b>	<b>CUMULATIVE ABNORMAL RETURN</b>
7/23/2009	14.25		3317.62				
7/24/2009	14.25	0.00000	3308.6	-0.00272	-0.00241	0.00241	0.00241
7/27/2009	14.25	0.00000	3295.47	-0.00397	-0.00306	0.00306	0.00548
7/28/09	14.25	0.00000	3266.97	-0.00865	-0.00550	0.00550	0.01097
7/29/09	14.15	-0.00702	3242.75	-0.00741	-0.00486	-0.00216	0.00881
7/30/09	14.25	0.00707	3246.09	0.00103	-0.00046	0.00753	0.01634
7/31/09	14.1	-0.01053	3273.1	0.00832	0.00333	-0.01385	0.00249
8/3/09	14.25	0.01064	3249.09	-0.00734	-0.00481	0.01545	0.01794
8/4/09	14.1	-0.01053	3229.53	-0.00602	-0.00413	-0.00640	0.01155
8/5/09	14	-0.00709	3224.32	-0.00161	-0.00184	-0.00525	0.00629
8/6/09	13.85	-0.01071	3237.2	0.00399	0.00108	-0.01179	-0.00550
8/7/09	13.95	0.00722	3257.38	0.00623	0.00224	0.00498	-0.00052
8/10/09	13.3	-0.04659	3259.46	0.00064	-0.00067	-0.04593	-0.04645
8/11/09	12.9	-0.03008	3261.76	0.00071	-0.00063	-0.02944	-0.07589
8/12/09	12.65	-0.01938	3254.42	-0.00225	-0.00217	-0.01721	-0.09310
8/13/09	12.8	0.01186	3255.19	0.00024	-0.00088	0.01273	-0.08036
8/16/09	12.9	0.00781	3262.92	0.00237	0.00023	0.00758	-0.07279
8/17/09	12.8	-0.00775	3234.31	-0.00877	-0.00556	-0.00219	-0.07498
8/18/09	12.8	0.00000	3232.42	-0.00058	-0.00130	0.00130	-0.07367
8/19/09	12.8	0.00000	3219.47	-0.00401	-0.00308	0.00308	-0.07059
8/20/09	12.6	-0.01563	3183.71	-0.01111	-0.00678	-0.00885	-0.07944
8/23/09	12.65	0.00397	3179.3	-0.00139	-0.00172	0.00569	-0.07375
8/24/09	12.75	0.00791	3153.14	-0.00823	-0.00528	0.01318	-0.06057
8/26/09	12.85	0.00784	3113.87	-0.01245	-0.00748	0.01532	-0.04525
8/27/09	12.7	-0.01167	3099.92	-0.00448	-0.00333	-0.00834	-0.05359
8/28/09	12.6	-0.00787	3092.07	-0.00253	-0.00232	-0.00556	-0.05915
8/31/09	12.5	-0.00794	3102.68	0.00343	0.00078	-0.00872	-0.06787
9/1/09	12.55	0.00400	3126.04	0.00753	0.00292	0.00108	-0.06678

9/2/09	12.6	0.00398	3175.73	0.01590	0.00727	-0.00328	-0.07007
9/3/09	12.65	0.00397	3188.87	0.00414	0.00115	0.00282	-0.06725
9/4/09	12.75	0.00791	3185.98	-0.00091	-0.00147	0.00938	-0.05787
9/7/09	12.85	0.00784	3174.12	-0.00372	-0.00294	0.01078	-0.04709
9/8/09	12.8	-0.00389	3126.61	-0.01497	-0.00878	0.00489	-0.04220
9/9/09	12.3	-0.03906	3114.19	-0.00397	-0.00307	-0.03600	-0.07820
9/10/09	12.45	0.01220	3090.31	-0.00767	-0.00499	0.01718	-0.06102
9/11/2009	12.45	0.00000	3096.15	0.00189	-0.00002	0.00002	-0.06100
9/14/09	12.25	-0.01606	3093.04	-0.00100	-0.00152	-0.01454	-0.07554
9/15/09	12.1	-0.01224	3088.18	-0.00157	-0.00182	-0.01043	-0.08597
9/16/09	12	-0.00826	3080	-0.00265	-0.00238	-0.00589	-0.09186
9/17/09	12	0.00000	3064.42	-0.00506	-0.00363	0.00363	-0.08823
9/18/09	11.75	-0.02083	3045.78	-0.00608	-0.00416	-0.01667	-0.10490
9/22/09	11.85	0.00851	3037.87	-0.00260	-0.00235	0.01086	-0.09403
9/23/09	11.6	-0.02110	3040.1	0.00073	-0.00062	-0.02048	-0.11451
9/24/09	11.65	0.00431	3040.69	0.00019	-0.00090	0.00521	-0.10930
9/25/09	11.5	-0.01288	3046.04	0.00176	-0.00009	-0.01279	-0.12209
9/28/09	11.35	-0.01304	3032.03	-0.00460	-0.00339	-0.00965	-0.13175
9/29/09	11.2	-0.01322	3015.72	-0.00538	-0.00380	-0.00942	-0.14117
9/30/09	11.5	0.02679	3005.41	-0.00342	-0.00278	0.02956	-0.11160
10/1/09	11.5	0.00000	3022.33	0.00563	0.00193	-0.00193	-0.11353
10/2/09	11.7	0.01739	3037	0.00485	0.00152	0.01587	-0.09766
10/5/09	11.55	-0.01282	3021.69	-0.00504	-0.00362	-0.00920	-0.10686
10/6/09	11.65	0.00866	3020.62	-0.00035	-0.00118	0.00984	-0.09702
10/7/09	11.3	-0.03004	2986.83	-0.01119	-0.00682	-0.02323	-0.12024
10/8/09	11.2	-0.00885	2987.2	0.00012	-0.00094	-0.00791	-0.12816
10/9/09	11	-0.01786	2983.38	-0.00128	-0.00166	-0.01619	-0.14435
10/12/09	10.75	-0.02273	2961.01	-0.00750	-0.00490	-0.01783	-0.16218
10/13/09	10.65	-0.00930	2976.8	0.00533	0.00177	-0.01108	-0.17325
10/14/09	10.5	-0.01408	2969.15	-0.00257	-0.00234	-0.01175	-0.18500
10/15/09	10.45	-0.00476	3001.21	0.01080	0.00461	-0.00938	-0.19438
10/16/09	10.4	-0.00478	3031.79	0.01019	0.00430	-0.00908	-0.20346

**Annex XII: Safaricom Limited Bond Issue Event Date 10/30/09**

<b>DATE</b>	<b>STOCK PRICE</b>	<b>STOCK RETURN</b>	<b>20 NSE INDEX</b>	<b>MARKET RETURN</b>	<b>EXPECTED RETURN</b>	<b>ABNORMAL RETURN</b>	<b>CUMULATIVE ABNORMAL RETURN</b>
9/14/2009	3.8		3093.04				
9/15/2009	3.85	0.01316	3088.18	-0.00157	0.00094	0.01222	0.01222
9/16/2009	3.85	0.00000	3080	-0.00265	0.00021	-0.00021	0.01200
9/17/2009	3.9	0.01299	3064.42	-0.00506	-0.00141	0.01440	0.02640
9/18/2009	3.85	-0.01282	3045.78	-0.00608	-0.00210	-0.01072	0.01568
9/22/2009	3.75	-0.02597	3037.87	-0.00260	0.00025	-0.02622	-0.01055
9/23/2009	3.8	0.01333	3040.1	0.00073	0.00249	0.01084	0.00029
9/24/2009	3.85	0.01316	3040.69	0.00019	0.00213	0.01103	0.01132
9/25/2009	3.75	-0.02597	3046.04	0.00176	0.00319	-0.02916	-0.01784
9/28/2009	3.75	0.00000	3032.03	-0.00460	-0.00110	0.00110	-0.01674
9/29/2009	3.7	-0.01333	3015.72	-0.00538	-0.00163	-0.01171	-0.02845
9/30/2009	3.7	0.00000	3005.41	-0.00342	-0.00030	0.00030	-0.02814
10/1/2009	3.7	0.00000	3022.33	0.00563	0.00579	-0.00579	-0.03394
10/2/2009	3.75	0.01351	3037	0.00485	0.00527	0.00824	-0.02570
10/5/2009	3.7	-0.01333	3021.69	-0.00504	-0.00140	-0.01194	-0.03763
10/6/2009	3.7	0.00000	3020.62	-0.00035	0.00176	-0.00176	-0.03939
10/7/2009	3.65	-0.01351	2986.83	-0.01119	-0.00554	-0.00797	-0.04737
10/8/2009	3.7	0.01370	2987.2	0.00012	0.00208	0.01162	-0.03575
10/9/2009	3.7	0.00000	2983.38	-0.00128	0.00114	-0.00114	-0.03689
10/12/2009	3.7	0.00000	2961.01	-0.00750	-0.00305	0.00305	-0.03384
10/13/2009	3.75	0.01351	2976.8	0.00533	0.00559	0.00792	-0.02592
10/14/2009	3.75	0.00000	2969.15	-0.00257	0.00027	-0.00027	-0.02618
10/15/2009	3.8	0.01333	3001.21	0.01080	0.00928	0.00406	-0.02213
10/16/2009	3.8	0.00000	3031.79	0.01019	0.00887	-0.00887	-0.03100
10/19/2009	3.8	0.00000	3042.42	0.00351	0.00436	-0.00436	-0.03536
10/21/2009	3.8	0.00000	3031.1	-0.00372	-0.00051	0.00051	-0.03485
10/22/2009	3.8	0.00000	3049.99	0.00623	0.00620	-0.00620	-0.04105

10/23/2009	3.85	0.01316	3044.44	-0.00182	0.00077	0.01238	-0.02867
10/26/2009	3.9	0.01299	3057.23	0.00420	0.00483	0.00816	-0.02051
10/27/2009	3.9	0.00000	3043.22	-0.00458	-0.00109	0.00109	-0.01942
10/28/2009	3.9	0.00000	3047.87	0.00153	0.00303	-0.00303	-0.02245
10/29/2009	3.95	0.01282	3066.01	0.00595	0.00601	0.00681	-0.01564
10/30/2009	4	0.01266	3083.63	0.00575	0.00587	0.00678	-0.00886
11/2/2009	4	0.00000	3082.92	-0.00023	0.00184	-0.00184	-0.01070
11/3/2009	4	0.00000	3081.07	-0.00060	0.00160	-0.00160	-0.01230
11/4/2009	3.95	-0.01250	3076.44	-0.00150	0.00099	-0.01349	-0.02579
11/5/2009	3.95	0.00000	3077.11	0.00022	0.00215	-0.00215	-0.02793
11/6/2009	4	0.01266	3089.44	0.00401	0.00470	0.00796	-0.01998
11/9/2009	4	0.00000	3082.36	-0.00229	0.00046	-0.00046	-0.02043
11/10/2009	4	0.00000	3094.13	0.00382	0.00457	-0.00457	-0.02501
11/11/2009	4	0.00000	3114.53	0.00659	0.00644	-0.00644	-0.03145
11/12/2009	4.05	0.01250	3131.47	0.00544	0.00567	0.00683	-0.02462
11/13/2009	4.05	0.00000	3136.89	0.00173	0.00317	-0.00317	-0.02778
11/16/2009	4.1	0.01235	3142.3	0.00172	0.00316	0.00918	-0.01860
11/17/2009	4.1	0.00000	3141.66	-0.00020	0.00186	-0.00186	-0.02046
11/18/2009	4.2	0.02439	3112.8	-0.00919	-0.00419	0.02858	0.00812
11/19/2009	4.4	0.04762	3111.95	-0.00027	0.00182	0.04580	0.05392
11/20/2009	4.5	0.02273	3132.62	0.00664	0.00648	0.01625	0.07017
11/23/2009	4.8	0.06667	3156.65	0.00767	0.00717	0.05950	0.12967
11/24/2009	4.7	-0.02083	3156.71	0.00002	0.00201	-0.02285	0.10682
11/25/2009	4.9	0.04255	3188.71	0.01014	0.00883	0.03372	0.14055
11/26/2009	5.05	0.03061	3191.93	0.00101	0.00268	0.02793	0.16848
11/27/2009	5	-0.00990	3197.84	0.00185	0.00325	-0.01315	0.15533
11/30/2009	4.85	-0.03000	3189.55	-0.00259	0.00025	-0.03025	0.12508
12/1/2009	4.8	-0.01031	3176.45	-0.00411	-0.00077	-0.00954	0.11553
12/2/2009	4.8	0.00000	3174.22	-0.00070	0.00153	-0.00153	0.11401
12/3/2009	4.7	-0.02083	3170.51	-0.00117	0.00121	-0.02205	0.09196
12/4/2009	4.6	-0.02128	3184.55	0.00443	0.00498	-0.02626	0.06570
12/7/2009	4.5	-0.02174	3186.64	0.00066	0.00244	-0.02418	0.04152
12/8/2009	4.55	0.01111	3192.04	0.00169	0.00314	0.00797	0.04949

**Annex XIII: Bond Issue Announcements Sample**

<b>DAYS</b>	<b>CENTUM</b>	<b>EABL</b>	<b>KENGEN</b>	<b>SAFARICOM</b>	<b>TOTAL AR</b>	<b>SAMPLE AVERAGE AR</b>	<b>SAMPLE CUMULATIVE AVERAGE AR</b>
-30	-0.016977	9.25641	0.00241378	0.01222	9.25406	2.31352	2.31352
-29	0.02213964	9.27156	0.00306359	-0.00021	9.29655	2.32414	4.63765
-28	0.00066906	9.23875	0.00549708	0.01440	9.25931	2.31483	6.95248
-27	-0.0089246	9.25962	-0.0021625	-0.01072	9.23782	2.30945	9.26193
-26	0.00866626	9.25737	0.00753154	-0.02622	9.24734	2.31184	11.57377
-25	-0.0039426	9.25334	-0.0138531	0.01084	9.24638	2.31160	13.88537
-24	-0.0028602	9.25778	0.01545279	0.01103	9.28140	2.32035	16.20572
-23	0.01319176	9.24990	-0.0063958	-0.02916	9.22754	2.30688	18.51260
-22	0.00540508	9.24141	-0.0052533	0.00110	9.24266	2.31066	20.82327
-21	0.01900424	9.25222	-0.0117915	-0.01171	9.24773	2.31193	23.13520
-20	-0.008151	9.25344	0.00497865	0.00030	9.25057	2.31264	25.44784
-19	-1.923E-06	9.24548	-0.045927	-0.00579	9.19376	2.29844	27.74628
-18	0.01565667	9.24762	-0.0294421	0.00824	9.24208	2.31052	30.05680
-17	0.02999134	9.25266	-0.0172097	-0.01194	9.25351	2.31338	32.37018
-16	-0.0150908	9.24940	0.01273467	-0.00176	9.24529	2.31132	34.68150
-15	0.01598922	9.25590	0.00757767	-0.00797	9.27149	2.31787	36.99937
-14	-0.0041139	9.27157	-0.0021925	0.01162	9.27688	2.31922	39.31859
-13	0.00240463	9.26172	0.00130387	-0.00114	9.26429	2.31607	41.63466
-12	0.03965205	9.25754	0.00308327	0.00305	9.30333	2.32583	43.96050
-11	-0.0300226	9.26939	-0.0088491	0.00792	9.23844	2.30961	46.27011
-10	-0.0028579	9.25515	0.00568855	-0.00027	9.25771	2.31443	48.58454
-9	-0.0103562	9.25050	0.01318382	0.00406	9.25739	2.31435	50.89888
-8	-0.009962	9.26006	0.01531935	-0.00887	9.25655	2.31414	53.21302
-7	0.01516202	9.27395	-0.0083436	-0.00436	9.27641	2.31910	55.53212
-6	-0.0012105	9.23897	-0.0055572	0.00051	9.23271	2.30818	57.84030
-5	-0.0065662	9.23621	-0.0087208	-0.00620	9.21472	2.30368	60.14398
-4	-0.0109952	9.24325	0.00108493	0.01238	9.24572	2.31143	62.45541
-3	0.00266037	9.23809	-0.0032816	0.00816	9.24563	2.31141	64.76682
-2	-0.0019492	9.20855	0.00281669	0.00109	9.21050	2.30263	67.06944



-1	0.00941003	9.22123	0.0093764	-0.00303	9.23698	2.30925	69.37869
0	0.0035829	9.23127	0.01077887	0.00681	9.25244	2.31311	71.69180
0	0.00817968	9.23949	0.00489227	0.00678	9.25934	2.31484	74.00664
0	-0.0211802	9.24406	-0.0359969	-0.00184	9.18504	2.29626	76.30290
1	-0.0027255	9.25998	0.01718255	-0.00160	9.27284	2.31821	78.62111
2	0.00317596	9.27165	1.7315E-05	-0.01349	9.26135	2.31534	80.93644
3	-0.0158151	9.25225	-0.0145419	-0.00215	9.21974	2.30494	83.24138
4	0.01302518	9.25583	-0.0104278	0.00796	9.26639	2.31660	85.55798
5	0.01918451	9.25302	-0.0058871	-0.00046	9.26586	2.31646	87.87444
6	-0.0032568	9.25442	0.00363039	-0.00457	9.25022	2.31255	90.18700
7	0.00395734	9.26488	-0.0166703	-0.00644	9.24573	2.31143	92.49843
8	0.01680528	9.25661	0.0108611	0.00683	9.29111	2.32278	94.82121
9	0.00915136	9.28613	-0.0204788	-0.00317	9.27163	2.31791	97.13911
10	-0.0010641	9.28236	0.00520943	0.00918	9.29569	2.32392	99.46304
11	-0.0054328	9.25132	-0.0127905	-0.00186	9.23123	2.30781	101.77084
12	-0.0077212	9.25579	-0.0096518	0.02858	9.26700	2.31675	104.08759
13	0.00388425	9.26145	-0.0094187	0.04580	9.30172	2.32543	106.41302
14	0.00316231	9.25383	0.02956347	0.01625	9.30281	2.32570	108.73872
15	0.01347041	9.25476	-0.0019275	0.05950	9.32580	2.33145	111.07017
16	0.01835609	9.24958	0.01586729	-0.02285	9.26095	2.31524	113.38541
17	0.01386145	9.25065	-0.0091991	0.03372	9.28903	2.32226	115.70767
18	-0.022651	9.25196	0.00984214	0.02793	9.26708	2.31677	118.02444
19	-0.0048222	9.21096	-0.023226	-0.01315	9.16976	2.29244	120.31688
20	-0.0020843	9.26934	-0.007914	-0.03025	9.22909	2.30727	122.62415
21	0.00415242	9.27508	-0.0161922	-0.00954	9.25350	2.31338	124.93753
22	-0.0069302	9.26555	-0.0178282	-0.00153	9.23927	2.30982	127.24734
23	-0.0158375	9.25695	-0.0110753	-0.02205	9.20799	2.30200	129.54934
24	0.00154507	9.25134	-0.0117482	-0.02626	9.21487	2.30372	131.85306
25	-0.0200173	9.25888	-0.0093767	-0.02418	9.20531	2.30133	134.15439
26	0.00485326	9.27454	-0.0090831	0.00797	9.27828	2.31957	136.47395
27	0.01441268	9.26540	0.00398448	-0.01319	9.27061	2.31765	138.79161

**Annex XIV: Z Score Significance Tests**

<b>FIRM</b>	<b>AAR</b>	<b>STDEV AR</b>	<b>Z SCORE</b>	<b>P VALUES</b>	<b>VERDICT</b>	<b>ACTION</b>
<b>RIGHTS ISSUE</b>						
KENGEN	-0.00335	0.01908	-0.17558	0.86000	NOT SIGNIFICANT	ACCEPT NULL HYPOTHESIS
KENYA AIRWAYS	-0.00266	0.02166	-0.12281	0.90200	NOT SIGNIFICANT	ACCEPT NULL HYPOTHESIS
KPLC	0.00176	0.00447	0.39374	0.69400	NOT SIGNIFICANT	ACCEPT NULL HYPOTHESIS
LONGHORN	-0.00183	0.03679	-0.04974	0.96100	NOT SIGNIFICANT	ACCEPT NULL HYPOTHESIS
OLYMPIA CAPITAL	-0.00645	0.04169	-0.15471	0.87700	NOT SIGNIFICANT	ACCEPT NULL HYPOTHESIS
TPS SERENA	0.00199	0.03464	0.05745	0.95500	NOT SIGNIFICANT	ACCEPT NULL HYPOTHESIS
UCHUMI	-0.00533	0.02963	-0.17989	0.85800	NOT SIGNIFICANT	ACCEPT NULL HYPOTHESIS
RIGHTS ISSUE SAMPLE	-0.00227	0.00979	-0.23167	0.81700	NOT SIGNIFICANT	ACCEPT NULL HYPOTHESIS
<b>BOND ISSUE</b>						
CENTUM	0.00152	0.01323	0.11489	0.90800	NOT SIGNIFICANT	ACCEPT NULL HYPOTHESIS
EABL	9.25397	0.01458	634.70302	<0.00001	SIGNIFICANT	REJECT NULL HYPOTHESIS
KENGEN	-0.00332	0.01343	-0.24721	0.80500	NOT SIGNIFICANT	ACCEPT NULL HYPOTHESIS
SAFARICOM	0.00061	0.01655	0.03686	0.97100	NOT SIGNIFICANT	ACCEPT NULL HYPOTHESIS
BOND ISSUE SAMPLE	2.31319	0.00749	308.74905	<0.00001	SIGNIFICANT	REJECT NULL HYPOTHESIS

**Annex XV: Rights Issue Announcements Sample Cumulative Aggregate CAR**

<b>DAYS</b>	<b>KENGEN</b>	<b>KENYA AIRWAYS</b>	<b>KPLC</b>	<b>LONGHORN</b>	<b>OLYMPIA CAPITAL</b>	<b>TPS SERENA</b>	<b>UCHUMI</b>	<b>AGGREGATE CAR</b>	<b>CUMULATIVE AGGREGATE CAR</b>
-30	-0.02233	0.00790	0.00100	0.08012	-0.00651	0.01304	-0.01707	0.00802	0.00802
-29	-0.02396	0.01228	0.00186	0.11087	0.04102	-0.01710	-0.05087	0.01059	0.01861
-28	-0.03677	0.00109	0.01428	0.11952	0.03131	-0.03437	-0.05187	0.00617	0.02478
-27	-0.04512	-0.00774	0.02697	0.12988	-0.05712	-0.10143	-0.08655	-0.02016	0.00462
-26	-0.05520	-0.00112	0.02283	0.12139	0.02060	-0.06455	-0.04830	-0.00062	0.00400
-25	-0.05265	0.00025	0.03033	0.06825	-0.03873	-0.06145	-0.04936	-0.01476	-0.01077
-24	-0.02256	0.00300	0.02227	0.08009	-0.12541	-0.10225	-0.06310	-0.02971	-0.04048
-23	-0.02364	0.00735	0.02934	0.11431	-0.10795	-0.08621	-0.08537	-0.02174	-0.06221
-22	-0.03393	0.00644	0.03241	0.09615	-0.11956	-0.07556	-0.10793	-0.02886	-0.09107
-21	-0.04382	-0.01509	0.05347	0.09527	-0.12717	-0.08021	-0.17121	-0.04125	-0.13232
-20	-0.01710	-0.02622	0.06025	0.08526	-0.13607	-0.06227	-0.12016	-0.03090	-0.16322
-19	0.00853	-0.03160	0.07701	0.05084	-0.14600	-0.08835	-0.11687	-0.03521	-0.19843
-18	0.01144	-0.07019	0.11369	-0.03019	-0.15328	-0.02907	-0.08195	-0.03422	-0.23265
-17	0.01096	-0.04761	0.18661	-0.00178	-0.19562	-0.08862	-0.08736	-0.03192	-0.26457
-16	0.01246	-0.04715	0.17897	0.01807	-0.28179	-0.08634	-0.09759	-0.04334	-0.30791
-15	-0.00096	-0.04337	0.15900	0.03492	-0.27290	-0.04414	-0.11235	-0.03997	-0.34788
-14	-0.02202	-0.05159	0.14015	0.00966	-0.18647	-0.02402	-0.14873	-0.04043	-0.38831
-13	0.00441	-0.06113	0.15663	-0.00946	-0.13982	-0.01160	-0.16783	-0.03269	-0.42100
-12	0.01117	-0.05803	0.18901	0.00921	-0.20211	-0.00243	-0.19655	-0.03568	-0.45668
-11	0.01041	-0.07467	0.21513	0.01155	-0.18250	-0.02067	-0.19252	-0.03332	-0.49000
-10	0.03872	-0.05503	0.19733	0.08459	-0.21876	0.00014	-0.23224	-0.02646	-0.51647
-9	0.01929	-0.05261	0.18863	-0.00074	-0.22721	0.01011	-0.19322	-0.03654	-0.55300
-8	0.02018	-0.05367	0.18143	-0.00511	-0.23533	-0.01562	-0.19911	-0.04389	-0.59689
-7	0.03811	-0.05457	0.18079	0.02468	-0.24390	-0.01203	-0.19999	-0.03813	-0.63502
-6	0.02072	-0.02913	0.15804	0.02265	-0.25054	0.01097	-0.17711	-0.03491	-0.66993
-5	0.00725	0.00789	0.15128	0.00970	-0.25804	0.00542	-0.17830	-0.03640	-0.70633
-4	0.00279	-0.01941	0.15083	0.01836	-0.25718	0.01427	-0.21217	-0.04322	-0.74955
-3	0.00609	-0.08274	0.15903	0.01046	-0.26582	-0.00719	-0.20822	-0.05548	-0.80504
-2	-0.02568	-0.17504	0.15830	0.04018	-0.26125	-0.03017	-0.23340	-0.07529	-0.88033

-1	-0.03360	-0.16865	0.15942	0.03136	-0.27144	-0.00201	-0.24440	-0.07562	-0.95595
0	-0.04801	-0.16542	0.15742	0.01402	-0.23039	-0.01466	-0.22549	-0.07322	-1.02917
0	-0.12545	-0.17641	0.18191	0.02682	-0.20945	-0.02084	-0.25104	-0.08207	-1.11123
0	-0.11752	-0.19918	0.15105	-0.04039	-0.20520	0.12462	-0.25713	-0.07768	-1.18891
1	-0.12799	-0.21569	0.16237	-0.02860	-0.22494	0.20740	-0.25296	-0.06863	-1.25754
2	-0.14717	-0.25594	0.14869	0.01347	-0.31011	0.19443	-0.21349	-0.08145	-1.33899
3	-0.15266	-0.29373	0.14707	-0.05581	-0.26234	0.19853	-0.26291	-0.09741	-1.43639
4	-0.18989	-0.24985	0.14461	-0.10826	-0.24668	0.19429	-0.26386	-0.10281	-1.53920
5	-0.20690	-0.25229	0.14207	-0.09537	-0.15258	0.14337	-0.28022	-0.10027	-1.63947
6	-0.21882	-0.23300	0.14673	-0.06340	-0.18521	0.18934	-0.30674	-0.09587	-1.73534
7	-0.23513	-0.22984	0.14393	-0.11399	-0.17120	0.18590	-0.29696	-0.10247	-1.83781
8	-0.22959	-0.23251	0.13747	-0.14602	-0.18005	0.18072	-0.31916	-0.11273	-1.95054
9	-0.24399	-0.22641	0.13568	-0.13078	-0.20287	0.17789	-0.36325	-0.12196	-2.07251
10	-0.25626	-0.23265	0.12172	-0.10253	-0.21232	0.16032	-0.37001	-0.12739	-2.19990
11	-0.23652	-0.23332	0.12459	-0.13385	-0.23379	0.17334	-0.41032	-0.13570	-2.33559
12	-0.22943	-0.22999	0.13140	-0.13611	-0.22991	0.19162	-0.47013	-0.13893	-2.47453
13	-0.20581	-0.22382	0.13422	-0.13100	-0.25019	0.18114	-0.47087	-0.13805	-2.61257
14	-0.18253	-0.23060	0.11823	-0.19630	-0.24854	0.21137	-0.40905	-0.13392	-2.74649
15	-0.16936	-0.20399	0.10724	-0.13578	-0.25643	0.21016	-0.46871	-0.13098	-2.87747
16	-0.16596	-0.22321	0.11038	-0.20036	-0.27642	0.19483	-0.46970	-0.14721	-3.02468
17	-0.16880	-0.22280	0.11478	-0.14833	-0.30836	0.12642	-0.46435	-0.15306	-3.17774
18	-0.15520	-0.22355	0.11493	-0.17365	-0.36401	0.09057	-0.44697	-0.16541	-3.34315
19	-0.17299	-0.22601	0.11131	-0.18837	-0.33329	0.09431	-0.44823	-0.16618	-3.50933
20	-0.20220	-0.19539	0.11815	-0.16668	-0.36430	0.15673	-0.42474	-0.15406	-3.66339
21	-0.23633	-0.18964	0.10061	-0.11976	-0.28506	0.15755	-0.33656	-0.12988	-3.79328
22	-0.21505	-0.19365	0.10241	-0.16011	-0.38186	0.14442	-0.31006	-0.14484	-3.93812
23	-0.20656	-0.18290	0.09206	-0.16309	-0.39020	0.13946	-0.31162	-0.14612	-4.08424
24	-0.21802	-0.16703	0.08212	-0.15221	-0.39862	0.13072	-0.30146	-0.14636	-4.23060
25	-0.21570	-0.16158	0.08268	-0.14594	-0.35866	0.12895	-0.28159	-0.13598	-4.36658
26	-0.21545	-0.16280	0.08935	-0.14334	-0.41587	0.09376	-0.29304	-0.14963	-4.51620
27	-0.20096	-0.15931	0.10560	-0.10998	-0.38682	0.11928	-0.31995	-0.13602	-4.65222

**Annex XVI : Bond Issue Announcement Sample Cumulative Aggregate CAR**

<b>DAYS</b>	<b>CENTUM</b>	<b>EABL</b>	<b>KENGEN</b>	<b>SAFARICOM</b>	<b>AGGREGATE CAR</b>	<b>CUMULATIVE AGGREGATE CAR</b>
-30	-0.01698	9.25641	0.00241	0.01222	2.31352	2.31352
-29	0.00516	18.52797	0.00548	0.01200	4.63765	6.95117
-28	0.00583	27.76672	0.01097	0.02640	6.95248	13.90365
-27	-0.00309	37.02634	0.00881	0.01568	9.26193	23.16558
-26	0.00557	46.28371	0.01634	-0.01055	11.57377	34.73935
-25	0.00163	55.53705	0.00249	0.00029	13.88537	48.62472
-24	-0.00123	64.79483	0.01794	0.01132	16.20572	64.83044
-23	0.01196	74.04473	0.01155	-0.01784	18.51260	83.34304
-22	0.01737	83.28614	0.00629	-0.01674	20.82327	104.16631
-21	0.03637	92.53837	-0.00550	-0.02845	23.13520	127.30150
-20	0.02822	101.79180	-0.00052	-0.02814	25.44784	152.74934
-19	0.02822	111.03729	-0.04645	-0.03394	27.74628	180.49562
-18	0.04388	120.28491	-0.07589	-0.02570	30.05680	210.55242
-17	0.07387	129.53757	-0.09310	-0.03763	32.37018	242.92260
-16	0.05878	138.78697	-0.08036	-0.03939	34.68150	277.60410
-15	0.07477	148.04287	-0.07279	-0.04737	36.99937	314.60347
-14	0.07065	157.31444	-0.07498	-0.03575	39.31859	353.92206
-13	0.07306	166.57616	-0.07367	-0.03689	41.63466	395.55672
-12	0.11271	175.83371	-0.07059	-0.03384	43.96050	439.51722
-11	0.08269	185.10310	-0.07944	-0.02592	46.27011	485.78733
-10	0.07983	194.35825	-0.07375	-0.02618	48.58454	534.37186
-9	0.06947	203.60875	-0.06057	-0.02213	50.89888	585.27075
-8	0.05951	212.86881	-0.04525	-0.03100	53.21302	638.48376
-7	0.07467	222.14276	-0.05359	-0.03536	55.53212	694.01589
-6	0.07346	231.38174	-0.05915	-0.03485	57.84030	751.85619
-5	0.06689	240.61795	-0.06787	-0.04105	60.14398	812.00017
-4	0.05590	249.86120	-0.06678	-0.02867	62.45541	874.45558
-3	0.05856	259.09929	-0.07007	-0.02051	64.76682	939.22239
-2	0.05661	268.30784	-0.06725	-0.01942	67.06944	1006.29184
-1	0.06602	277.52906	-0.05787	-0.02245	69.37869	1075.67053

0	0.06960	286.76033	-0.04709	-0.01564	71.69180	1147.36233
0	0.07778	295.99982	-0.04220	-0.00886	74.00664	1221.36896
0	0.05660	305.24388	-0.07820	-0.01070	76.30290	1297.67186
1	0.05388	314.50386	-0.06102	-0.01230	78.62111	1376.29296
2	0.05705	323.77551	-0.06100	-0.02579	80.93644	1457.22941
3	0.04124	333.02776	-0.07554	-0.02793	83.24138	1540.47079
4	0.05426	342.28359	-0.08597	-0.01998	85.55798	1626.02877
5	0.07345	351.53660	-0.09186	-0.02043	87.87444	1713.90321
6	0.07019	360.79102	-0.08823	-0.02501	90.18700	1804.09020
7	0.07415	370.05591	-0.10490	-0.03145	92.49843	1896.58863
8	0.09095	379.31252	-0.09403	-0.02462	94.82121	1991.40984
9	0.10011	388.59865	-0.11451	-0.02778	97.13911	2088.54895
10	0.09904	397.88100	-0.10930	-0.01860	99.46304	2188.01199
11	0.09361	407.13232	-0.12209	-0.02046	101.77084	2289.78283
12	0.08589	416.38811	-0.13175	0.00812	104.08759	2393.87042
13	0.08977	425.64956	-0.14117	0.05392	106.41302	2500.28345
14	0.09293	434.90339	-0.11160	0.07017	108.73872	2609.02217
15	0.10640	444.15814	-0.11353	0.12967	111.07017	2720.09234
16	0.12476	453.40772	-0.09766	0.10682	113.38541	2833.47775
17	0.13862	462.65837	-0.10686	0.14055	115.70767	2949.18542
18	0.11597	471.91032	-0.09702	0.16848	118.02444	3067.20986
19	0.11115	481.12128	-0.12024	0.15533	120.31688	3187.52673
20	0.10906	490.39062	-0.12816	0.12508	122.62415	3310.15089
21	0.11322	499.66570	-0.14435	0.11553	124.93753	3435.08841
22	0.10629	508.93125	-0.16218	0.11401	127.24734	3562.33575
23	0.09045	518.18821	-0.17325	0.09196	129.54934	3691.88509
24	0.09199	527.43955	-0.18500	0.06570	131.85306	3823.73815
25	0.07198	536.69843	-0.19438	0.04152	134.15439	3957.89254
26	0.07683	545.97296	-0.20346	0.04949	136.47395	4094.36649
27	0.09124	555.23836	-0.19948	0.03630	138.79161	4233.15810

