INFORMATION CONTENT IMPACT OF STOCK SPLITS:
A case of the Kenyan Market

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Submitted in partial fulfillment of the requirements for the Degree of Bachelor of Business Science in Finance at Strathmore University

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November, 2015

DECLARATION

I declare that this work has not been previously submitted and approved for the award of a degree by this or any other University. To the best of my knowledge and belief, the Research Project contains no material previously published or written by another person except where due reference is made in the Research Project itself.

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This Research Project has been submitted for examination with my approval as the Supervisor.

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ACKNOWLEDGEMENTS:

I am greatly indebted to my supervisor, Mr. Ishmael Maina for his able guidance and advice throughout the research project period. Mr. Ferdinand Othieno also played a key role in helping me have the motivation to carry out this research through his giving of impromptu talks in class on the need to maintain focus.

This research project would also not have been completed without the conducive studying environment of Strathmore University and collaboration with my fellow School of Finance and Applied Economics students.

Finally, I would like to thank the Almighty God for blessing me with good health and the gift of life throughout the entirety of this project.

DEDICATION:

This project is dedicated to all those whom in one way or the other contributed towards this research, may the odds be ever in your favor. Above all, I give thanks to the Almighty God.

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ABSTRACT:

Stock splits from their definition are seen as purely cosmetic events that is, they should have no effect on the returns of the shares in question. However, studies have found numerous stock market effects associated with this event. This paper examines the effects of this event for the Kenyan Stock market. This research employed the event study methodology by Fama, Fischer et al (1969) and Brown and Warner (1980) using the stock split announcements of seven NSE listed companies that occurred during the year 2006 to 2012 and contribute further evidence as to the efficiency characteristics of the Kenyan stock market. The abnormal returns that arise due to this event are calculated using the Market Model and the significance is tested using t-tests. The results of t- tests on the average abnormal return (AAR) indicated that abnormal returns were significantly different from zero which implied that there is an anomaly with regards to stock split announcements regarded as news by NSE investors. The study established that there is a relationship between stock split announcement and performance of share prices of listed companies in the Nairobi Securities Exchange (NSE) in Kenya.

CHAPTER ONE

INTRODUCTION

1.1 Background of the study:

Stock splits and their market significance continuously raise debates due to the fact that they do not have any direct valuation implications. Empirical research has shown that the market reacts positively to the announcement of a stock split (Taylor & Vickery, 1978) (Grinblatt, MS, W, & S, 1984) (McNichols & Dravid, 1990). Different theories have since emerged in literature to explain the abnormal returns around split issue announcements. The original theories hypothesized that markets learn information about firms' fundamentals for example dividends or earnings from stock splits. The alternative theories that followed went with a different view arguing that it is not information, but rather increased liquidity that stocks achieve via splits that cause abnormal returns.

The prime concern of the paper is to analyze the informational content effect of the announcement of stock split for stocks listed on the Nairobi Securities Exchange (NSE) and this way also determine the form of market efficiency, based on the Efficient Market Hypothesis, the Kenyan environment is. The impetus for this particular study is the fact that there is little done in form of research into the comparative information content of stock split announcements in the Kenyan context.

This paper contributes to literature by presenting a new angle of results from the Kenyan perspective which serves to reconfirm the original information hypothesis that relates the abnormal returns around stock split announcements to the information content effect the announcement itself has.

STOCK SPLITS: CONCEPTUAL AND THEORETICAL BASIS.

1.1.1 Stock splits

A stock split simply involves a company altering the number of its shares outstanding and proportionately adjusting the share price to compensate for the same. All the balance sheet items remain the same except that the total number of outstanding shares of the company increases proportionately to the ratio of the split. This spilt can occur at any ratio. The most commonly used ratios are 2:1, 3:2, 5:4, and 4:3. The two for one (2:1) split means that each shareholder has twice as many shares but each represent a claim on only half as much of the company's assets and earnings. Splits however, can happen in reverse in which is termed as a reverse split for example a 10:1 reverse split. The main difference between stock split and reverse split is that, while reverse splits are used as vehicles to correct stock undervaluation, regular splits aim to signal the firm value and move share prices to a more attractive range. The announcement, however, of a reverse split has been found to bring about a negative stock market response. (Woolridge J & Donald R, 1983). Reverse splits are not common among Kenyan companies.
In a stock split, the company announcing it notifies the stock exchange the record date, after completing the legal and procedural formalities. The stock market accordingly fixes the ex-dates, which generally comes a few days earlier than the record date. On the ex-date thereafter, the market is in the post-split shares time period.

1.1.2 Efficient Market Hypothesis and stock splits:

The Efficient market Hypothesis states that all relevant information in the market is fully and immediately reflected in the security market prices, suggesting that an investor will obtain an equilibrium rate of return. This means an investor should therefore not expect to make a positive alpha return. There are three forms of market efficiency namely: weak, semi-strong and the strong form. The weak form suggest that current share prices fully reflect any past information contained within past share prices. The semi-strong form on the other hand as an extension to efficiency, suggests all public information relating to a company will be reflected in the share price.
The strong form describes the situation where all relevant information, whether or not it is in the public domain, will be reflected in the price of a share. (Fama E, Fischer, Jensen, & Roll, 1969).

Subsequently, the Semi-strong form efficiency was developed into what is known as the event studies (Fama F, 1991). In event studies, the speed at which security prices respond to different items of news, such as earnings or dividend announcements for example is measured. The test on stock price reaction for stock splits is thus based on test of semi-strong form efficiency which is what this research was based on.

1.2 Problem statement:

Stock splits continue to generate interest as they typically do not have direct valuation implications hence why they have come to be known as 'cosmetic' events. Managers however, continue to make this costly cosmetic decision which explains the rationale behind the increased interest in the event since it does not seem intuitive to make such decisions.

Studies by Grinblatt et al (1984), Dhar and Chhaocharia (2008) and Fama, Fischer et al (1969) indicated that the markets reacted positively to stock split announcements, this being indicated by a significant increase in the number of shares traded in the stock market. Other studies by Leemakdej (2007) and Boehme (2001) indicated that markets reacted negatively to stock splits. Gupta and Kumar (2007) and Lakonishok and Lev (1987) in their studies on stock splits and bonus issues noted that markets did not react to their announcements.

There then seemed to be no agreement on the effects of the stock split. The studies done in the Kenyan market have also been too few to give a conclusive result, hence the need to carry out the research. This study differs from the rest in that is relates to the Kenyan scenario. There has been no consensus on how markets generally reacted to stock splits.

It would therefore be fallacious to generalize the kind of market reaction elicited by stock splits elsewhere and especially to the Kenyan market pointing out the existing gap. It is the purpose of this study to show, therefore, that in Kenyan markets, stock splits have informational content effect on the market share prices.

Investigation of semi-strong form market efficiency has also been limited to the study of well-developed stock markets. Therefore, with the examination of stock price reaction to information release of stock splits we will be able to examine whether the Kenyan stock market is semi-strong efficient or not.

1.3 Research Objectives:

i. To determine the informational effect stock splits have on market security prices on the Nairobi Securities Exchange.
ii. To determine whether improving on the standard event study market model for an event study better explains the announcement effect on security prices at the Nairobi Securities Exchange.

1.4 Value of study:

This research aimed to extend evidence on how the stock market reacts to stock splits announcements for a sample of companies listed on the Nairobi Securities Exchange. The findings of this research will be important to investors, decision makers and other stock market players who use earnings announcements to measure their trading expectations. In addition to this, evidence from analyzing stock price reaction to stock split announcements in an emerging market gives more insight as to whether the theory of efficient markets is supported.
Scholars can use the findings of this research as a basis of carrying out further research on this subject area.

CHAPTER TWO

LITERATURE REVIEW:

Several studies have been carried out to determine the relation of the announcement effect to stock splits since the research by (Fama E, Fischer, Jensen, & Roll, 1969)who found that the event is associated with a positive stock market effect. Literature in this area has been looked at from two different but related perspectives. The first perspective deals with the theoretical explanations that have arisen explaining the possible reasons why managers may resort to stock splits. The second is a more empirical perspective and has been previously described as event analysis literature due to the fact that it follows a set out event analysis methodology which involves investigation and documentation of the reaction of the stock market around the announcement or on the ex-date of the decision to split shares.

2.1 Explanation for the announcement of stock splits.

The first section of the literature review involves a focus on reviewing the literature from the point of different explanations for the announcement of stock splits. The first explanation would be that stock splits change the stock price to a more optimal trading range, according to the optimal trading range hypothesis, which in turn increases the demand for stock, leading to a positive stock price effect. (Lakonishok & Lev, 1987) (Forjan & McCorry, 1998) (McNichols & Dravid, 1990)Provide further support of an optimal trading range.

Several studies (Lamoureux & Poon, 1987) report that the number of shareholders increases after a split. Brennan and Hughes (1991) provide an explanation as to why the number of shareholders increase by focusing on the role of brokers in providing research coverage to firms. Brokers are given incentives to research on and promote a particular firm due to the fact that with stock splits, there is a general rise in brokerage fees paid by most investors. Security analyst coverage also increase after a split. This is known as the market maker hypothesis. However, there is a general decrease in bid-ask spread and an increase in true variance in the post-split period. This argument however, does not fit when it comes to large firms splitting as compared to smaller, less-known firms. Therefore a general explanation to explain why both large firms and small firms split shares needs to be made.

Further investigation has found that there is an increase in market liquidity with the announcement and taking place of the events. They basically examine the impact of stock splits on trading of the firm's stock. Managers have previously asserted that splits make shares more valuable since they make a stock more liquid. The increase in value can be attributed to reduced trading costs (Amihud & Mendelson, 1986) or due to a larger pool of investors willing to invest in the stock (Merton, 1987). Copeland (1979) finds that the trading volume decreases the year after the split which is contradictory to later findings. However, Lakonishok and Lev (1987)find that pre-split volume was exceptionally high and stock splits do not have a permanent impact on trading volumes.

According to Leland and Pyle (1977) managers use financial decisions such as stock splits to convey favorable private information about the current value of the firm. Brennan and Copeland (December 1988), Lakonishok and Lev (1987) and Klein and Peterson (1989) provide further support of this. The idea is, managers use these events as signals to potential investors as to the confidence they have in the performance of the organization. Academic investigations into stock splits are focused primarily on signaling and liquidity. A firm for example, may use a split to signal that a recent increase in share price is permanent and not transitory. (McNichols & Dravid, 1990)The information in earnings forecast errors for firms that split shares and conclude that despite the fact that in deed these events signal private information about the firm, it is not a complete explanation of post-split share price behavior. Arthurs, Busenitz, Hoskisson& Johnson (2009) discovered that signals have the effect of sensitizing the market and therefore indirectly affect consumer preference. The findings of their study on signaling and IPOs supported the signaling theory, and can be used to further explain the market reaction due to stock splits. During the announcement of stock splits, the signals before the announcement allow for the sensitization of the shareholders as well as other consumers. Stock splits therefore act as a signal that the company is doing well and has the potential to make huge profit mark-ups. The basis for making such decisions, whether to carry out a stock split, lies in the goals and objectives that management has set about to accomplish.

2.2 Empirical Review.

The second section of the Literature Review will be focused on review of empirical research that has been carried out on the reaction of the stock market around the announcement or on the ex-date of the decision to split shares. Empirical research has shown that the market reacts positively to the announcement of a stock split (Taylor & Vickery, 1978) (Grinblatt, MS, W, & S, 1984) (McNichols & Dravid, 1990). However, an exact explanation for the positive announcement effect has not been put across. Ball, Brown and Finn (1977) investigated stock price reactions around, as they termed it, 'stock capitalization changes' these are bonus issues, stock splits and rights issues. This investigation was carried out in Australia for period between 1960 and 1969 using primarily monthly data. They found that abnormal returns were at 20.2% for 13 months up to end of year including the month of bonus issues announcements. (Grinblatt, MS, W, & S, 1984)Found that, in the period from 1967 to 1976, their sample of stocks realized excess returns during the three days surrounding stock split announcements. The findings of Desai and Jain (1997) pointed in the same direction, revealing that following stock splits, there was an excess return after a holding period of one year. After a holding period of three years, there was an even higher excess return. Ikenberry, Rankine and Stice (1996) examined two-for-one stock splits by NYSE and ASE firms from 1975 through to 1990 and obtained similar results.

They observed excess returns in the first year after a stock split and better results in the first three years following a split. These gains were preceded by excess returns on the announcement date. The findings of positive excess returns were also found in other markets. In their paper, Wu and Chang (1997) found excess returns on the Hong Kong Stock Exchange. They examined 67 splits in the period from 1986 to 1992, and found the excess returns over the three days surrounding a split announcement amounted to an astounding 18.2%. Similar observations were made in the German Stock Exchange. Wulff (2002) reported excess returns during the four days following stock split announcements as well as during the four days after the effective date.

In another paper, Elfakhani and Trevor (2003)examined the situation in Canada and found that stock split announcements resulted in positive cumulative abnormal returns.

Wulff (2002) noted that the liquidity hypothesis took the form of the trading range hypothesis, which stated that companies tended to move their share prices towards an optimal perceived trading range after the share price had risen substantially.

Lakonishok and Lev (1987) agreed with this hypothesis, suggesting that a stock split changed the stock price to a more optimal trading range, which in turn increased the demand for stock, leading to a positive stock price effect. Consequently, when a stock became too expensive, Conroy, Harris and Benet (1999) noted that a split brought its price back into the optimal price range. Managers were seen to engineer splits to return their company's share price to a particular level that was remarkably stable over time. Similar to financial ratios for different sectors, Lakonishok and Lev (1987)agreed that there existed benchmark values regarding stock prices and managers were guided by comparative figures.

Patell and Wolfson (1984) examined the effects of news releases of earnings and dividend announcements on mean, variance and serial correlation in consecutive price changes. The results show dividends announcements bring much less activity than earnings do. Kane, Lee and Marcus (1985) assessed abnormal stock returns surrounding earnings and dividend announcements in order to determine whether investors evaluate the two announcements in relation to each other.

Dhar and Chhaocharia (2008) found that on the announcement date, there was positive average abnormal return which was very significant at 0.01% level. They also found that 77% of sample companies had positive mean return in respect of stock split.

Grayson (2005) examined why a drift was likely to occur after a split and found that the market was not efficient. As a result, not everyone in the market received the same information at the same time. Brokers were found to pitch the stock to different people differently hence causing a shift. They initially gave the information to their best customers, some of which would still be used months later by other investors. They noticed that unknowledgeable investors did not understand stock splits and believed that the shares were now cheaper. This resulted in the post-split shares being highly demanded. Louis and Robinson (2003) noted that managers split their stock when they were optimistic about the firm's future prospects. Hence they found that if managers used their reporting discretion to signal private information, they were likely to do so in conjunction with stock splits. This signal was deemed credible by the market and thus elicited some positive reaction

Despite this weight of evidence, a study between the periods 1981-1994 in Greece by (Papaioannou, Travlos, & Tsangarakis, 2000) on the share price reaction to stock dividends in Greece did not find any evidence in support of a share price reaction. Instead, they found that

stock dividends did not contain any information content due to the fact that they mostly arise in Greece from a legal requirement to give effect to the capitalization of reserves from asset revaluations. Their argument is that the absence of the "surprise element" weakens the information content of stock dividend announcements and so share prices do not react as there is no new information. However, despite this feature of the Greek market, a recent study by (Leledakis, Papaioannou, Travlos, & Tsangarakis, 2009) covering the period 1990-2000 did uncover a positive price reaction around stock dividend announcements in Greece, which they attribute to the "attention-getting" and normal trading range hypotheses. Leemakdej (2007) detected significantly negative returns in the 20 days before and 18 days after the effective date of the split, with the most significant returns clustered around the event date. This was in contrast to other studies that noted positive returns around stock split dates.

Simbovo (2006) carried out a research on the effects of stock splits and large stock dividends in the Kenyan stock market. The research found that stock splits and stock dividends had an effect on liquidity, being positive in the case of splits. These results were consistent with the trading range hypothesis where managers split their stock when they felt they were not affordable. A split was then found to lower prices, making shares more affordable especially by avoiding odd lot trading costs. Simbovo (2006) also noted that prior to a company splitting its shares; two typical market conditions were witnessed. First, there was a high demand for company shares which propelled the prices upwards. Secondly, more retail investors took up positions to qualify from the split multiples. As this occurred he found there was a major change of guard and more corporate investors exited to look for other lucrative counters. The exit of major corporations steered excess supply leading to a fall in prices. After the split, the share price was started low and after some time appreciated.

Musau (2007) noted that there was a Bull Run that kicked off in the Nairobi Stock Exchange in the year 2006, which made the market gain more than 50%. As earnings of companies increased, so did the demand for shares by the public. The price appreciation forced many companies to split shares owing to the nature of majority of the Kenyan investors.

2.3 Event study methodology

The event-study methodology is based on the efficient markets hypothesis. The hypothesis states that as new information becomes available, it is fully taken into consideration by investors assessing its current and future Effect. Investors immediately re-assess individual firms and their ability to withstand potential economic, environmental, political, societal, and demographic changes resulting from the event. The new assessment results in stock price changes that reflect the discounted value of current and future firm performance. Significant positive or negative stock price changes can then be attributed to specific events (Fama F, 1991).

Brown and Warner (1984) reported that, a simple methodology based on the market model was both well-specified and relatively powerful under a wide variety of conditions to carry out an event study as specified by Fama, Fischer et al (1969). The effect of the event is determined through measuring an abnormal return. This return is the actual ex-post return of the security over the event window minus the normal return of the firm over the event window with the normal return being defined as the return had the event not taken place.

The market model made use of regressions of the particular stock, undergoing a stock split, return with that of the return of the market to compute the abnormal returns. However this has been found to be limited in scope since there might have been some wider industry factors unrelated with the stock split that may have caused the share prices to react the way they did. Therefore an index needs to be built to represent the industry. Two options are available; the sector equally-weighted index and the sector market capitalization weighted index. (Brennan & Hughes, 1991)

The market capitalization weighted index is calculated by summing up total market value of stocks making up the particular sector based on the current stock prices and number of shares outstanding for all stocks in the index. Its major limitation is that it is biased to firms with greater capitalization however it overcomes the same in the context of this study by automatically adjusting for stock splits since weighting in the index is determined by market value.

CHAPTER THREE

RESEARCH METHODOLOGY:

3.1 Introduction

This study is intended to be carried out as an event study. Since the introduction of this methodology in 1969, it has become the standard method to use in the study of share price reactions to an announcement or event (Binder, 1998). According to Serra (2002), event studies start with the hypothesis about how a particular event affects the value of a firm. The hypothesis that the value of the company has changed will then be translated in the stock showing an abnormal return. Serra (2002) notes that coupled with the notion that the information is readily impounded in to prices, the concept of abnormal returns (or performance) is the central key of event study methods.

The study aims to make use of the stock market data to measure the impact of a stock split on the participating firm's share price over the period of study. I will seek to measure the deviation of the stockholders actual rate of return from the expected returns.

3.2 Data and Sample

The sample for stock splits is expected to be drawn from companies listed on the Nairobi Securities Exchange which had undergone a stock split in the period 2006 to 2014. In this period seven companies had undergone stock splits, this were; were Nation Media Group Limited, Equity Bank Limited, Kenya Power and Lighting Corporation, Athi River Mining Limited, Barclays Bank of Kenya Limited, City Trust Limited and Kenya Oil Company Limited. These seven companies are expected to be part of the sample for this study.

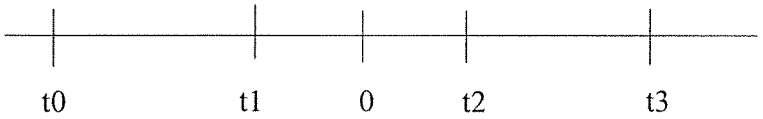
3.3 Data Collection

The study used secondary data from the NSE. Share price and the NSE 20-Share index data for the relevant period will be collected from NSE monthly bulletins with the main focus being on the date stock split as the event date. The relevant share price and NSE 20-Share index data used was the daily price and 20-share index figures on the dates analyzed. To address the research problem, the study relied on all relevant public sources including the broadcast and print media and internet to corroborate information about this event and its exact date. Other sources included NSE announcements and company financial statements and articles in the financial press. Requisite adjustments were made to the data to ensure that only relevant dates before and after the announcement date were used in the analysis.

3.4 The model:

The event of interest in the study is the share split and the event window includes the date of the announcement. The event date is the stock split date and the time period around the event date is used to aggregate abnormal returns on the individual stock. The announcement date is defined as the last stock exchange trading day before the actual split announcement took place. This is based on the assumption that the information is known to the market before trading closed on the previous day and therefore could influence stock prices; otherwise, any reaction could happen only on the date of the split (day 0). Since it is impossible to distinguish between the two possibilities, any effect of the announcement is assumed to occur on the split date.

The study aims to make use of daily adjusted prices for sample stocks for the event window of 101 days consisting of 50 days before and 50 days after the event date for stock splits. Savitri and Martani (2008) made use of daily adjusted prices for sample stocks for 105 trading days in their study while Dhar and Chhaochharia (2008) thought 81 days was sufficient. The period of 101 days is adequately lengthy for the estimation of the normal return of the model with better accuracy, and it is long enough to cover the effects of the splits.



The time for the event study is therefore determined as t1 = -50 to t2 = +50 for stock splits relative to the event date t = 0. The estimation window is taken as t0= -364 to t 1.= -50, while the post-event window is taken as t 2 = +50 to t 3 = +364 relative to the event day t = 0. The study is aimed to find out whether the event has any impact on the share prices, and how fast the information is absorbed in share prices.

The appraisal of the event's impact requires a measure of the abnormal returns of the studied firms in the period around the announcement date and the effective date. The abnormal return will be the actual ex-post return of the security over the event window minus the normal return of the firm over the event window. The purpose of calculating abnormal returns is to try and capture the announcement effect, assuming the market is efficient.

Brown and Warner (1984) reported that, a simple methodology based on the market model was both well-specified and relatively powerful under a wide variety of conditions, therefore, the market model will be employed to compute the abnormal returns.

Step I: Calculating the Rate of Return on Security

The abnormal returns are derived from the following equation:

$$R_{jt} = \alpha_j + \beta_j R_{mt} + \epsilon_{jt}$$

Where,

R_{jt} = the actual daily return security j at day t

R_{mt} =The daily market return at the NSE on day t

α_j = ordinary least squares intercept; the average rate of return of stock at the market return is equal to zero

β_j= stock sensitivity to market return that is, Cov(Rjt,Rmt)/Var(Rmt) which represents the slope coefficient,

ϵ_{jt} = the error term for security j at day t

Var $[\epsilon_{jt}] = \sigma^2$

The test of significance of abnormal return is done with the hypothesis

H0:$AR_{jt} = 0$

H1: $AR_{jt} \neq 0$

The normal return is the expected return without conditioning on the event taking place. For firm j and event date t, the abnormal return will be

$AR_{jt} = R_{jt} - (\alpha_j + \beta_j R_{mt})$ ..... (1)

Where AR_{jt} and R_{jt} are the abnormal and actual returns for the time period under study.

Step II: Calculating the Expected Return of Market

The Nairobi Stock Exchange 20 share Index will also be used as a proxy for computing market return and in this, I will make use of the logarithm of daily return to avoid serial correlation. The market return is computed as,

R_{mt}= Log $(\frac{It}{It-1})$ ..... (2) Where; R_{mt} =is the current month market index return ; I_t is the current month's stock index.

The daily return for security j is calculated by the equation:

R_{jt}= Log $(Rt/Rt-1)$ where; R_{jt} is the current month normal return

; R_t is the current month's stock price.

Where αj and βj are derived by the market model over one year prior to the event month, relative to the announcement date and effective date (the announcement date and effective date are defined as 0 event day),

The expected returns for security j at day t are defined as

$ERjt=\boldsymbol{\alpha_j} + \boldsymbol{\beta_j} R_{mt}$ ..... (3) Where ($\boldsymbol{\alpha_j}$ and$\boldsymbol{\beta_j}$) are ordinary least squares estimates of (α_j and β_j)

However, the single-factor market model, as indicated in the literature review, is not enough to analyze this particular event. This is because there might be other factors that come into play bringing about the abnormal returns other than the announcement of the split. I will therefore add in another factor, the Industry return based on the sector market capitalization weighted index and regress the return of an individual stock against the Industry and market return.

The abnormal returns based on the **two-factor** model are derived from:

$R_{jt}= \alpha_j + \beta_{j1} R_{mt} + \beta_{j2} R_{ind,t}$

Where R_{jt}, α_j and $\beta_{j1} R_{mt}$ are as earlier described while:

β_{j2} is the stock sensitivity to market return and industry return and

$R_{ind,t}$ is the daily industry return

To analyze the price effects, I expect to compute the Cumulative Abnormal Returns (CAR) for the 101 days centered in the announcement dates.

$CARt = \sum ARt$..... (5)

t= -50 to +50 for stock splits;

n= 101 for announcement date of stock splits;

Step III: Estimating the Average Abnormal Return during Month *t*, *AARt*

After computation of abnormal returns of all securities, the average abnormal returns (AARs) were computed during the event period AARs as below:

$AARt = 1/N$

Where:

$AARt$ =Average abnormal return for month t

N =Number of securities in the sample

Assuming that prices, indices and their respective returns in the event period are normally distributed, the t-statistic test will be used to test for the significance at 95% confidence interval, with the daily average abnormal returns and its standard deviation being used to determine the appropriate empirical t-statistic.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSIONS:

4.1 Introduction

This chapter focuses on data analysis, presentation and interpretation. It presents, data analysis as per the study objectives, presentation of data by use of APA table format and data interpretation.

4.2 Regression

Microsoft Excel was used to generate the regression coefficients for the standard market model. The results were as displayed below.

Table 4. 1: Regression Coefficients

Coefficients	Barclays	Nation Media	Equity	KPLC	KENOL KOBIL	ARM Cement	City Trust
α	-0.00465	0.001204	0.000984	0.000952	0.001595	0.000529	0.002606
β_1	-1.67772	-0.02056	-0.09946	0.10897	-0.57394	0.37671	-0.25846
β_2	0.641728	0.816795	1.689491	0.574154	1.01033	-0.04932	0.288607

Source: Research Findings

The regression coefficients for each of the selected firms were estimated from the share price and NSE 20-share index during the event period. These coefficient figures were then used to calculate the abnormal returns for each point in time in the event period. The following tables give a summary of the Abnormal Returns (ARs) generated from the earlier discussed formula. Stock returns based on NSE share prices and the Industry returns based on the market cap index built.

Table 4.2: Abnormal returns, Stock returns and Industry returns for Barclays Bank

	Abnormal Return	Stock Returns	Industry Returns
December 2010	0.6401%	0.07979%	0.0272%
January 2011	-6.1254%	0.03460%	0.31256%
February 2011	0.4242%	-0.25823%	0.09708%
March 2011	-0.6562%	-0.37804%	-0.47663%
April 2011	1.3432%	0.18905%	0.25630%
May 2011	0.5733%	0.02991%	-0.09066%

Source: Research Findings

Table 4.2 gives a summary of the Abnormal Returns (ARs), Stock Returns and Industry Returns generated from the event study market model for each point in time of the event period for Barclays Bank.

Table 4.3: Abnormal returns, Stock returns and Industry returns for Nation Media Group

	Abnormal Return	Stock Returns	Industry Returns
January 2008	0.3951%	-0.3459%	-0.8236%
February 2008	-0.0202%	0.3503%	0.4018%
March 2008	-0.1440%	-0.2354%	0.0993%
April 2008	-0.0266%	0.4687%	0.2151%
May 2008	-0.0014%	-0.1792%	-0.3134%

Source: Research Findings

Table 4.3 gives a summary of the Abnormal Returns, Stock Returns and Industry Returns generated from the market model for each point in time of the event period for NMG.

Table 4.4: Abnormal returns, Stock returns and Industry returns for Equity Bank Ltd.

	Abnormal Return	Stock Returns	Industry Returns
December 2008	-0.9109%	0.2619%	0.9892%
January 2009	-0.0168%	-0.4571%	-0.4152%
February 2009	0.2126%	-1.2833%	-1.2140%
March 2009	-9.5639%	0.5694%	0.6025%
April 2009	-1.1557%	0.0187%	-0.1116%

Source: Research Findings

Table 4.4 gives a summary of the Abnormal Returns, Stock Returns and Industry Returns generated from the market model for each point in time of the event period for Equity Bank.

Table 4.5: Abnormal returns, Stock returns and Industry returns for Kenya Power and Lighting Corporation.

	Abnormal Return	Stock Returns	Industry Returns
June 2010	-0.4364%	0.3577%	-0.3359%
July 2010	-0.2770%	0.1028%	0.1371%
August 2010	0.1563%	0.0180%	-0.0081%
September 2010	0.3755%	0.1754%	0.2232%
October 2010	0.2501%	0.0320%	0.0451%
November 2010	-15.0210%	-0.1617%	-0.1791%

Source: Research Findings

Table 4.5 gives a summary of the Abnormal Returns, Stock Returns and Industry Returns generated from the market model for each point in time of the event period for KPLC.

Table 4.6: Abnormal returns, Stock returns and Industry returns for Kenya Oil Company Limited.

	Abnormal Return	Stock Returns	Industry Returns
March 2010	0.1368%	0.4145%	0.3575%
April 2010	0.1113%	0.1941%	0.2728%
May 2010	0.1972%	-0.0226%	0.4185%
June 2010	-11.9518%	0.1486%	-0.0787%
July 2010	0.2100%	0.1028%	0.1371%

Source: Research Findings

Table 4.6 gives a summary of the Abnormal Returns, Stock Returns and Industry Returns generated from the market model for each point in time of the event period for Kenya Oil Company.

Table 4.7: Abnormal returns, Stock returns and Industry returns for ARM Cement Limited.

	Abnormal Return	Stock Returns	Industry Returns
April 2012	0.64578%	0.2738%	0.2809%
May 2012	0.12276%	0.1316%	0.2337%
June 2012	0.03108%	0.0722%	0.2052%
July 2012	-0.02327%	0.1550%	-0.0412%
August 2012	-0.02787%	0.0097%	0.0299%

Source: Research Findings

Table 4.7 gives a summary of the Abnormal Returns, Stock Returns and Industry Returns generated from the market model for each point in time of the event period for ARM.

Table 4.8: Abnormal returns, Stock returns and Industry returns for City Trust Limited.

	Abnormal Return	Stock Returns	Industry Returns
November 2012	-0.2540%	-0.1190%	-0.0599%
December 2012	0.2324%	0.2324%	0.1604%
January 2013	0.6071%	0.3016%	0.3863%
February 2013	-0.3842%	0.1141%	0.2967%
March 2013	-0.2884%	0.2497%	0.7932%
April 2013	-0.1561%	0.4040%	0.7513%

Source: Research Findings

Table 4.8 gives a summary of the Abnormal Returns, Stock Returns and Industry Returns generated from the market model for each point in time of the event period for City Trust.

Table 4.9 below gives a summary of the Abnormal Returns (ARs) generated from the standard event study market model on the fifteen days before.

DAY	BARC	NMG	EQTY	KPLC	KENOL	ARM	CTY
-15	-0.8130%	-0.0338%	-1.3349%	-0.17914	0.1630%	-0.1097%	-0.12868%
-14	0.3189%	0.2654%	0.5226%	1.47104	-0.1102%	-0.9715%	-0.04519%
-13	-0.0595%	0.5478%	-0.6206%	-0.33101	5.1510%	-0.2684%	-0.16462%
-12	0.2033%	0.5475%	-0.6559%	-0.98821	1.3785%	0.1412%	-2.45393%
-11	-2.4202%	-1.7295%	0.5192%	0.21406	3.7809%	-0.1480%	-0.08086%
-10	-0.0653%	-0.9685%	0.6841%	0.94918	1.9056%	-0.5254%	0.11752%
-9	-0.6648%	-0.7869%	-1.1179%	-0.51054	-8.2498%	0.2582%	0.09250%
-8	-1.0146%	-0.2925%	1.2418%	-0.16858	-3.2069%	-0.0944%	0.18932%
-7	0.5676%	-1.0230%	-2.8406%	0.33740	2.4211%	1.6357%	-0.30345%
-6	0.7590%	0.4875%	1.5419%	0.52534	3.3810%	-1.5447%	2.01058%
-5	1.0927%	1.8488%	1.3289%	-0.85207%	4.2610%	1.2986%	-0.42697%
-4	-0.5787%	-0.4572%	0.9979%	0.6040%	-0.4466%	0.05918%	-0.4270%
-3	0.7643%	-0.6686%	1.0188%	-0.3431%	-0.6290%	0.26769%	-0.3178%
-2	-0.0640%	-0.1823%	0.2936%	0.2359%	0.4957%	-0.16699%	1.2173%
-1	0.5866%	2.7081%	1.3267%	-0.0239%	-1.1464%	-0.03770%	10.0374%
0	9.1358%	0.7841%	2.8756%	1.8532%	-0.0883%	-0.22021%	0.1497%

Source: Research Findings

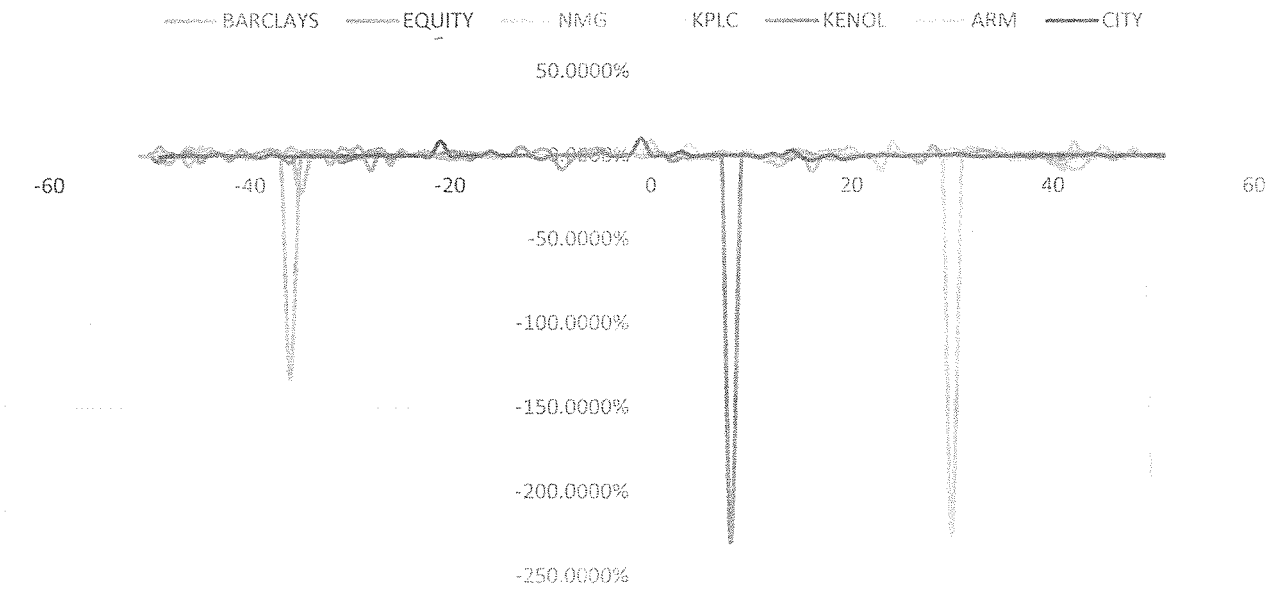
Table 4.10 gives a summary of the ARs fifteen days after the Split announcement.

DAY	BARC	NMG	EQTY	KPLC	KENOL	ARM	CTY
0	9.1358%	0.7841%	2.8756%	1.8532%	-0.0883%	-0.22021%	0.1497%
1	0.5978%	0.2166%	1.7981%	0.4250%	1.8531%	0.40219%	-0.1213%
2	0.7430%	-1.4024%	0.3640%	1.4108%	-3.4881%	0.07936%	-0.2643%
3	0.8952%	-0.1210%	-0.5833%	3.0223%	-1.5787%	0.68828%	2.1913%
4	-1.4992%	-1.6896%	-2.3160%	6.2633%	-1.0633%	0.15968%	-0.4525%
6	-1.5963%	-0.8738%	-2.1682%	-2.03614%	0.5820%	-1.2475%	-0.0706%
7	1.4958%	0.2406%	0.7189%	-1.87378%	-0.5457%	-1.7751%	-0.0372%
8	0.2110%	0.6975%	1.2637%	0.71787%	-229.9479%	2.3407%	-0.0407%
9	-0.6204%	-0.8832%	0.1078%	2.19930%	-0.1028%	-0.0580	-0.1066%
10	-1.0542%	-0.7174%	-1.0060%	2.62297%	-0.7214%	-0.7975%	-1.2170%
11	-1.0520%	-0.1509%	-2.3569%	-2.35550%	-0.2697%	0.0725%	0.9484%
12	-3.4406%	-0.7057%	-4.8284%	-1.24573%	0.4768%	-0.6022%	-0.1792%
13	0.1763%	-0.4214%	-5.9170%	-3.11742%	-1.0887%	-0.2159%	3.0709%
14	3.1815%	-0.9857%	-0.2128%	1.02646%	-2.3851%	-0.5065%	-1.2247%
15	2.2489%	1.0153%	1.8011%	-1.96708%	2.5458%	0.4362%	-3.0438%

Source: Research Findings

The figure below show a graphic presentation of the Abnormal returns derived from the standard market model. It is evident from the chart that Equity Bank, on average, contributed to a significant portion of the negative abnormal returns, while City Trust was the major contributor when it comes to the positive abnormal returns. Nation Media Group and ARM Cement returns were mostly distributed around positive and negative abnormal returns. The outliers as we can see clearly on the chart are the 132% hike in abnormal return for Barclays Bank, 225% hike in abnormal return for Equity Bank, 194% hike in abnormal return for Kenya Power and Lighting and the 229.94% hike in abnormal return as shown in the figure 4.1. These are attributable to the stock split itself.

Figure 4. 1: Company Abnormal return (AR) in the event period



Source: Research Findings

Table 4.11: Average Abnormal Returns (AARs), Standard Deviations of these AARs and the t-statistic fifteen days before the announcement date.

DAYS RELATIVE TO ANNOUNCEMENT DATE	AAR	SD of AAR	t- Stat
-15	-0.3480%	0.005297	-1.73841
-14	-0.2073%	0.007378	-0.743329
-13	-0.6078%	0.020349	-0.79025
-12	-0.2611%	0.012391	-0.55745
-11	-0.0194%	0.019784	-0.025915
-10	0.2996%	0.009665	0.820184
-9	1.5685%	0.029857	1.3899
-8	0.4780%	0.013793	0.91684
-7	0.1135%	0.017364	0.172975
-6	1.0229%	0.015276	1.771644
-5	1.2216%	0.016675	1.93818
-4	0.0199%	0.006063	0.08679
-3	0.2325%	0.007914	0.777244
-2	1.5213%	0.037639	1.069395
-1	0.5090%	0.012222	1.101861
0	2.0313%	0.033409	1.608627

Source: Research Findings

In tables 4.11 above and 4.12 below, a test of significance of the average abnormal returns (AARs) has been conducted. The test statistics used is the 2-tailed t-test. The calculated t-statistic tells us two things; 1) A calculated t-statistic larger than absolute value of 2 would have a 5% or smaller probability of occurring by chance if the true coefficient were zero and 2) A low value for probability increases the confidence level of having a significant t-statistic and indicates that the coefficient is significantly different from zero, thus making the coefficient seem to contribute something to the model.

The t-test assumes that AARs are normally distributed

Table 4.12: Average Abnormal Returns (AARs), Standard Deviations of these AARs and the t-statistic fifteen days after the announcement date.

DAYS RELATIVE TO ANNOUNCEMENT DATE	AAR	SD of AAR	t-stat
0	2.0313%	0.033409	1.608627
1	0.7184%	0.008033	2.366118
2	0.0146%	0.01898	0.02032
3	0.2672%	0.014698	0.480955
4	0.0545%	0.029122	0.04948
5	0.2267%	0.007019	0.85467
6	1.0587%	0.010177	2.75233
7	-0.2538%	0.012465	0.53869
8	-32.1083%	0.872425	0.97373
9	0.0765%	0.009998	0.202526
10	-0.4129%	0.013517	-0.80827
11	-0.7377%	0.012517	-1.55934
12	-1.5036%	0.019148	-2.0776
13	-1.0733%	0.028147	-1.00889
14	-0.1581%	0.01801	-0.23228
15	0.4338%	0.021533	0.53296

Source: Research Findings

The null hypothesis that was being tested was that at a 95% confidence level, the AARs in the event period were not different from zero, meaning no significant impact on the performance of the firms that experienced stock split announcements. The alternative hypothesis states that at 95% confidence level, AARs in the event period were different from zero, implying, stock split announcements had a significant impact on the performance of the firms that experienced stock split announcements.

Tables 4.11 and 4.12 above shows significant AAR movement in the interval of days to -15 to 0 with positive AARs manifesting 10 days prior to the announcement implying that investors might have known about the split before its announcement, had positive anticipation and the market incorporated the same.

It also depicts significant positive returns post-event announcement day showing that indeed the market reacted positively to the stock split announcement and it is only a week after do we see fluctuations (moving from positive to negative returns and vice versa) but these fluctuations persist through out the event window.

4.3 Interpretation of the Findings

The effect of stock split announcements on Nairobi Securities Exchange listed firms performance has been investigated by this study based on abnormal returns derived from the share price performance for 50 days prior and 50 days subsequent to the announcement of the stock split. From the findings it was established that stock split announcements have had an impact on listed firm's share price in Kenya. The impact was however found to be varied. This is dependent on the time period between the pre- and post-stock split announcement date.

From the analysis, it was evident that there has been on average a significant negative reaction in anticipation of the stock split announcement at least one month before announcement, signaling the initial uncertainty accompanied by this event. However, it soon turns positive almost a week before the announcement based on the fact that investors might have more information on the stock split announcement. Post-announcement, the reaction was found to be positive and significant meaning investors now clearly understand what the event is all about, anticipate better performance by the particular stock or react positively based on the increase in the number of shares of those who already held the particular share.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction.

This chapter gives a brief summary of the study of impact of stock split announcements on share prices of listed firms (Barclays Bank Kenya Limited, Equity Bank Limited, Nation Media Group, Kenya Power and Lighting Corporation, Kenya Oil Company Limited, ARM Cement Limited and City Trust Limited), the results, conclusion and the recommendations.

5.2 Summary

This study was aimed at finding out the impact of stock split announcements on share prices of different firms listed at the Nairobi securities exchange. Therefore, a research analysis was carried out on the seven firms listed on the NSE that had stock split announcement during the period 2006 to 2014. Results of the analysis show that there is indeed an impact of stock split announcement on stock returns, during the period prior to and after the stock split announcement. The Kenyan stock market based on the Efficient Market Hypothesis (EMH) is seen to be efficient in that the stock prices adjust according to news arriving in market. The fluctuation in stock returns prior to and after the announcement of the event can be attributed to this fact.

In theory, a stock market is informationally efficient with respect to earnings releases if no one can earn abnormal returns by trading on the basis of the information contained in the respective firm's announcements (Afego, 2011) . Literature on the same is of the opinion that no abnormal price reactions should continue beyond the announcement period. Mabhunu (2004) suggests that price changes should be as a result from release of new information only.

Based on the estimation window (an year before the announcement) there was significant negative abnormal returns three months prior to the announcement and insignificant returns months prior to these three month period. This is a nod to the fact that the cumulative abnormal returns indicate that the stock split announcement provides information from which the market adjusts the stock prices

Sponholtz (2005) through a study on the Danish Market found evidence suggesting that there are significant abnormal share price reactions surrounding the announcement date. This view is supported by this study to the extent that 50 days after the event announcement as the market reacted positively at first and then started to stabilize thereafter.

The results are in line with the efficient market hypothesis as indicated earlier since as observed in the post-event window the market readjusts with shares giving insignificant returns and further support a research done by Grinbalt et al (1984) which has evidence supporting the idea that stock prices react positively to dividends and stock split announcements.

5.3 Conclusion

The objective of this study was to determine the effect of stock split announcement on share prices of firms listed on the Nairobi Securities Exchange. Abnormal returns were calculated based on the event study methodology and significance of the same tested which then provided evidence that these event announcements do in fact impact stock market returns from the Kenyan Stock market perspective.

The above results of the study indicate that the market overreacts in anticipation of the stock splits announcement but corrects itself after the announcement based on the investors now clearly comprehending the event and the announcement not as positive as initially expected. A study done by Chemarum (2010) indicated that the Kenyan Stock Market may not meet the semi-strong form efficiency of the EMH since it is possible for investors to profit on corporate investments. This study stands in support of this evidenced by the positive average abnormal returns (AARs) before and after the event announcement.

From the study, the Kenyan stock market was found to be an efficient stock market responding to any negative or positive news arriving in the market with investors responding positively to the stocks of the firms which are likely to flourish in future in order to get higher returns and vice versa.

5.4 Recommendations for further research

Stock splits were found to be relatively new in the Nairobi Stock Exchange in the sense that not many firms have undertaken these stock splits. Most companies however, many intending to distribute their shares use the route of bonus issues do so. With large bonus issues not being so different from stock splits, there is need to find out how the market will reacts to bonus issues larger than 25%.

This study made use of the event study methodology through the market model to determine abnormal returns. Granted that it did extend the model to include industry returns and how the same interact with the abnormal returns, there is need for further study by including more independent variables such as those relating to firm size and dividend expectations so as to determine whether when these factors are considered if the market would still react to the stock split announcements.

5.5 Limitations of the Study

Additionally, this study is limited in scope to one developing securities market, future work may be carried out for other developing markets in the Africa region to ascertain the extent to which the findings are generalizable.

This study also relied on data from a selected sample of listed firms, making it difficult for the findings to be generalized to non-listed firms.

References

Afego, P. (2011). *Stock Price Response to Earnings Announcements: Evidence from the Nigerian Stock Market.* Nigeria.

Amihud, Y., & Mendelson, H. (1986). Asset pricing and the bid-ask spread. *Journal of Financial Economics*, 223-249.

Binder, J. (1998). The event study methodology since 1969. . *Review of Quantitative Finance and Accounting. Journal of Finance*, 67-110.

Boehme, R. D. (2001). Reexamining the Long-Run Stock Split Anomaly Puzzle.

Brennan, M. J., & Copeland, T. E. (December 1988). Stock Splits, Stock Prices, and Transaction Costs. *Journal of Financial Economics* .

Brennan, M. J., & Hughes, P. J. (1991). Stock Prices and the Supply of Information. *The Journal of Finance*, 1665-1691.

Brown, S., & Warner, J. (1984). Using Daily Stock Returns: The Case of Event Studies. *Journal of Financial Economics.*

Brown, S., & Warner, J. B. (1980). Measuring security price performance. *Journal of Financial Economics*, 205-258.

Conroy, R., Harris, R., & Benet, B. (1999). Stock splits and information: The role of the Share price. *Finance Management.*

Copeland, T. E. (1979). Liquidity Changes Following Stock Splits. *The Journal of Finance*, 115-141.

Desai, H., & Jain, P. (1997). Long-Run Common Stock Returns Following Stock Splits and Reverse Splits. *Journal of Business.*

Dhar, S., & Chhaocharia, S. (2008). Market reaction towards Stock Splits and Bonus Issues.

Dhar, S., & Chhaochharia, S. (2008). Market Reactions around Stock Splits and Bonus Issues: Some Indian Evidence .

Eisemann, P., & Moses, M. (1978). Stock Dividends:Management's View. *Financial Analysis Jour-nal.*

Elfakhani, S., & Trevor, L. (2003). The Effect of Split announcements on Canadian Stock. *Global Finance Journal.*

Fama E, F., Fischer, L., Jensen, M., & Roll, R. (1969). The Adjustments of Stock Prices to New Information. *International Economic Review*, 1-21.

Fama F, E. (1991). Efficient Capital Markets II. *The Journal of Finance.*

Forjan, J. M., & McCorry, M. S. (1998). Stock distribution announcements and bid-ask spreads. *Studies in economics and finance.*, 111-128.

Grinblatt, MS, W, M. R., & S, T. (1984). The Valuation Effects of Stock Splits and Stock Dividends. *Journal of Financial Economics*, 461-490.

Gupta, & Kumar. (2007). A Re-examination of Factors Affecting Returns in the Indian Stock Market.

Ikenberry, D., Rankine, G., & Stice, E. (1996). What do Stock Splits Really Signal? *Journal of Financial and Quantitative analysis.*

Iminza, J. (1997). An empirical investigation of the information content of dividend payment. *Unpublished MBA Project, University of Nairobi.*

Kane, A., Lee, Y. K., & Marcus, A. (1985). Earnings and Dividend Announcements is there a Corroboration Effect? *National Bureau of Economic Research.*

Klein, L. S., & Peterson, D. (1989). EARNINGS FORECAST REVISIONS ASSOCIATED WITH STOCK SPLIT ANNOUNCEMENTS. *Journal of Financial Research*, 319–328.

Lakonishok, J., & Lev, B. (1987). Stock Splits and Stock Dividends: Why, Who, and When. *The Journal of Finance*, 913-932.

Lamoureux, C. G., & Poon, P. (1987). The Market Reaction to Stock Splits. *The Journal of Finance*, 1347-1370.

Leemakdej, A. (2007). New Evidence of Stock Split when Uncertainty Event Window is identified. .

Leland, H. E., & Pyle, D. H. (1977). INFORMATIONAL ASYMMETRIES, FINANCIAL STRUCTURE, AND FINANCIAL INTERMEDIATION. *The Journal of Finance*, 371–387.

Leledakis, G., Papaioannou, G. J., Travlos, N. G., & Tsangarakis, N. V. (2009). Stock splits in a neutral transaction cost environment: evidence from the Athens Stock Exchange. *Journal of Multinational Financial Management*, 12-25.

Louis, H., & Robinson, D. (2003). Do Managers credibly use Accruals to Signal Private Information?Evidence from the Pricing of Accruals round Stock splits. *Journal of Finance.*

Mabhunu, M. (2004). *The market efficiency hypothesis and the behaviour of stock returns on the JSE securities exchange.* Doctoral dissertation, Rhodes University.

McNichols, M., & Dravid, A. (1990). Stock Dividends, Stock Splits and signaling. *Journal of Finance*, 851-879.

Merton, R. C. (1987). A Simple Model of Capital Market Equilibrium with Incomplete Information. *The Journal of Finance*, 483–510.

Miller, M., & Modigliani, F. (1961). Dividend policy, growth and valuation of shares. *The Journal of Business*, 411.

Papaioannou, G. J., Travlos, N. G., & Tsangarakis, N. (2000). Valuation effects of Greek stock dividend distributions. *European Financial Management*, 515-31.

Patell, J. M., & Wolfson, M. A. (1984). The intraday speed of adjustment of stock prices to earnings and dividend announcements. *Journal of financial economics*, 223-252.

Rankins, G., & Stice, E. K. (1997). The Market Reaction to the Choice of Accounting Method for Stock spli and Large Stock Dividend. *Journal of Financial and Quantitative Analysis.*

Savitri, M., & Martani, D. (2008). The Analysis Impact of Stock Split on Stock Return and Volume: The Case of Jarkata Stock Exchange. *Journal of Finance.*

Serra, A. P. (2002). Event Study Tests: A brief survey. *Working Papers.*

Simbovo, H. (2006). The Effect of Stock Splits and Large Stock Dividends on Liquidity:Evidence from Nairobi Stock Exchange. *Unpublished MBA project, University of Nairobi.*

Sponholtz, C. (2005). *Separating the Stock Market's Reaction to Simultaneous Dividend and Earnings Announcements.* Denmark.

Taylor, F., & Vickery, D. (1978). The Information Content of Stock Dividend Announcements. *The Accounting Review*, 360-370.

Woolridge J, R., & Donald R, C. (1983). Reverse splits and Shareholder Wealth. *Financial Management.*

Wu, L., & Chang, B. Y. (1997). On the Existence of an optimal stock price: Evidence from stock splits and Reverse stock splits in Hongkong. *International Journal of Business.*

Wulff, C. (2002). The Market Reaction to Stock splits: Evidence from Germany. *Schmalenbach Business Review.*

APPENDICES

Appendix 1: Firms listed on the NSE that have announced stock splits.

SECURITY	SPLIT DETAILS	Date of announcement
NMG	Nation Media Group announced a 2:1 stock split	**18/3/2008**
EQT	Equity Bank announced a 1:10 stock split. Record date 25/3/09	**12/2/2009**
BBK	Barclays Bank Kenya announced a 4:1 stock split. Books closure 15-Mar-2011.	**22/2/2011**
KPLC	Kenya Power and Lighting Corporation announced a 1:8 stock split. Record date 19/11/10. Trading date 25/11/10.	**7/10/10**
KENOL KOBIL	Kenol Kobil announced a 10:1 stock split. Books closure 1-June-2010.	**20/5/10**
ARM	ARM Cement company Limited announced a 5:1 stock split.	**14/6/12**
CITY	City Trust announced a stock split of 5:1. Books closure 28-May-2013.	**27/1/13**

Source: NSE 2015

Appendix 2: The Average Abnormal Returns (AARs), standard deviations of the AARs and the t-statistics of the AARs.

Day	AARs	SD	T-STAT
-50	**-0.00659%**	**0.008317**	**-0.02095**
-49	**-1.03108%**	**0.01938**	**-1.40764**
-48	**-0.22212%**	**0.033498**	**-0.17544**
-47	**0.16559%**	**0.005822**	**0.7525**
-46	**0.96673%**	**0.02184**	**1.171131**
-45	**-1.41797%**	**0.027091**	**-1.38483**
-44	**2.06306%**	**0.019962**	**2.734361**
-43	**0.07847%**	**0.006842**	**0.303436**
-42	**-0.00206%**	**0.017239**	**-0.00316**
-41	**0.33871%**	**0.014691**	**0.609991**
-40	**-0.49028%**	**0.008274**	**-1.56772**
-39	**0.66530%**	**0.018501**	**0.951412**

Day	AARs	SD	T-STAT
-38	0.99057%	0.018561	1.411993
-37	0.05812%	0.008925	0.172298
-36	-19.20504%	0.500507	-1.01521
-35	-2.18003%	0.09182	-0.62817
-34	0.02668%	0.013539	0.052144
-33	0.29028%	0.013873	0.553624
-32	0.26755%	0.027706	0.255499
-31	-0.10093%	0.02384	-0.11202
-30	-0.60624%	0.019398	-0.82687
-29	0.38027%	0.024341	0.413324
-28	-0.65911%	0.039459	-0.44194
-27	1.11410%	0.01239	2.379046
-26	-0.74515%	0.029415	-0.67023
-25	0.45439%	0.015003	0.801308
-24	0.24832%	0.004459	1.473482
-23	0.38406%	0.008412	1.207992
-22	1.86722%	0.029315	1.685219
-21	-0.09706%	0.010989	-0.23369
-20	0.32394%	0.01229	0.697347
-19	0.15884%	0.013405	0.313512
-18	-0.25241%	0.015306	-0.4363
-17	0.58732%	0.010933	1.421359
-16	-0.26431%	0.009634	-0.72586
-15	-0.34803%	0.005297	-1.73841
-14	0.20729%	0.007378	0.743329
-13	0.60779%	0.020349	0.79025
-12	-0.26108%	0.012391	-0.55745
-11	0.01938%	0.019784	0.025915
-10	0.29960%	0.009665	0.820184

Day	AARs	SD	T-STAT
-9	-1.56847%	0.029857	-1.3899
-8	-0.47798%	0.013793	-0.91684
-7	0.11352%	0.017364	0.172975
-6	1.02293%	0.015276	1.771644
-5	1.22156%	0.016675	1.93818
-4	-0.01989%	0.006063	-0.08679
-3	0.23248%	0.007914	0.777244
-2	1.52134%	0.037639	1.069395
-1	0.50901%	0.012222	1.101861
0	2.03127%	0.033409	1.608627
1	0.71836%	0.008033	2.366118
2	-0.01457%	0.01898	-0.02032
3	0.26718%	0.014698	0.480955
4	-0.05446%	0.029122	-0.04948
5	-0.22673%	0.007019	-0.85467
6	-1.05865%	0.010177	-2.75233
7	-0.25380%	0.012465	-0.53869
8	-32.10827%	0.872425	-0.97373
9	0.07653%	0.009998	0.202526
10	-0.41293%	0.013517	-0.80827
11	-0.73773%	0.012517	-1.55934
12	-1.50358%	0.019148	-2.0776
13	-1.07333%	0.028147	-1.00889
14	-0.15812%	0.01801	-0.23228
15	0.43376%	0.021533	0.53296
16	-1.24757%	0.038398	-0.85962
17	-0.04853%	0.013788	-0.09312
18	0.05815%	0.016526	0.093096
19	-0.64457%	0.020571	-0.82903

Day	AARs	SD	T-STAT
20	0.01821%	0.022614	0.021299
21	-0.26726%	0.00659	-1.07291
22	-0.06606%	0.009579	-0.18245
23	0.12821%	0.011999	0.282691
24	-0.84493%	0.036497	-0.61251
25	1.39551%	0.030148	1.224664
26	0.05836%	0.006852	0.225352
27	-0.68471%	0.020304	-0.89222
28	1.46234%	0.02192	1.765023
29	0.63883%	0.010355	1.632285
30	-31.47317%	0.854842	-0.9741
31	0.15000%	0.013401	0.296128
32	1.18389%	0.018723	1.672948
33	0.90402%	0.018548	1.289528
34	0.82425%	0.018392	1.185713
35	0.62421%	0.018331	0.900929
36	-0.71299%	0.011787	-1.60043
37	-0.48130%	0.011382	-1.11877
38	-0.13170%	0.014602	-0.23863
39	0.15542%	0.008546	0.481178
40	-0.96953%	0.021715	-1.18126
41	-1.13341%	0.023046	-1.30118
42	-2.87460%	0.041872	-1.81636
43	0.75484%	0.044749	0.446299
44	-0.45680%	0.01201	-1.00632
45	0.75407%	0.022838	0.87358
46	-0.24222%	0.013795	-0.46457
47	-0.21936%	0.004785	-1.21284
48	0.65811%	0.019132	0.910069