

**THE EFFECT OF INTEREST RATE ADJUSTMENT ANNOUNCEMENTS ON  
STOCK MARKET RETURNS AT THE NAIROBI SECURITIES EXCHANGE**

**YVONNE MAGARA**

**REGISTRATION NO. D63/77669/2015**

**A RESEARCH PROJECT PRESENTED TO THE SCHOOL OF BUSINESS IN  
PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF  
DEGREE OF MASTER OF SCIENCE, IN FINANCE, THE UNIVERSITY OF  
NAIROBI**

**NOVEMBER 2016**

## DECLARATION

This research project is my original work and has not been presented for any award in this University or any other Institution of higher learning.

Signature ----- Date -----

Yvonne Magara

Registration: D63/77669/2015

This research project has been submitted for examination with our approval as university supervisors.

Signature ----- Date -----

Dr. Cyrus Iraya

Department of Finance & Accounting

School of Business, University of Nairobi

## **ACKNOWLEDGEMENT**

I am indebted to several people for the invaluable support that they provided in various capacities before and during this research work. Firstly I thank my family for their encouragement, support and advice. I am also grateful to my supervisor, for assisting me assemble the many pieces of academic drafts into logical and easily intelligible assembly of information. I also thank The University of Nairobi for giving me an opportunity to study in the University

## **DEDICATION**

I give a special dedication to my family who have always supported me in this activity. Their inspiration and encouragement has kept me going on in my academic journey. Thank you for your support.

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## **ACRONYMS/ABBREVIATIONS**

<b>CAR</b>	Cumulative Abnormal Returns
<b>CAAR</b>	Cumulative Average Abnormal Returns
<b>CBK</b>	Central Bank of Kenya
<b>CBR</b>	Central Bank Rate
<b>CMA</b>	Capital Markets Authority
<b>COYA</b>	Company of the Year Award
<b>EMH</b>	Efficient Market Hypothesis
<b>MAAR</b>	Market Adjusted Abnormal Return
<b>MPC</b>	Monetary Policy Committee
<b>NSE</b>	Nairobi Securities Exchange
<b>OMO</b>	Open Market Operation
<b>SPSS</b>	Statistical Package for Social Science
<b>SMR</b>	Stock Market Returns
<b>SPSS</b>	Statistical Package for Social Science
<b>TVA</b>	Trading Volume Activity

## **ABSTRACT**

The behavior of security prices has been a central area of study over the years. Investors are keen on this behaviour as it provides them with information, which enables them to make choices on types of shares to purchase, hold or sell in order to maximize their returns. The connection between rates of interest adjustment announcements as well as stock returns has been the topic of much empirical investigation and speculation. The relationship between the two is of interest not only to economic theorists but also to investors who have to grapple with issues regarding asset allocation and market timing. The research pursued to establish the effect of rates of interest adjustment announcements on stock revenue of corporations registered at the NSE and adopted a descriptive design using the event study methodology. The populace in this research was a census of all the corporations recited at the NSE. From the study findings, it is completed that the stock market returns continues to expand with the levels of NSE 20 Share Index increasing over the years under study with minor fluctuations. The rates of market returns do not correspondingly increase as there are instances of increase in market returns and other instances of decline in the market proceeds. The study established a positive connection between return on stock market and rate of interest. This leads to the conclusion that interest rates adjustments significantly affect the stock income of corporations registered at the NSE. The positive association between rate of interest and market yields is not consistent with the literature on finance, development and growth. Government policy makers should develop policies that manage the interest rates at acceptable levels that encourage borrowing for private investments. This should be attained through legislation and availing cheaper sources of deposits for lenders. Market return is synonymous with economic growth.

# CHAPTER ONE: INTRODUCTION

## 1.1. Background of the study

The behavior of security prices has been a central area of study over the years. Investors are keen on this behavior as it gives them the info, which enables them to make decisions on which shares to buy, hold or sell in order to maximize their returns, (Fama, 1965). Security traders use this information for speculative purposes; the degree of speculation depends on how efficient the market is. It was normally thought that security markets were tremendously effective in reproducing info about stocks. The acknowledged opinion was that when there was new info, the news spread very quickly and was integrated in the prices of securities instantly. Therefore neither technical examination which is considered to be the research of previous stock prices in the trial to forecast forthcoming prices nor even essential examination which is the examination of monetary info would help an stockholder to accomplish revenues better than which could be gained by having a casually selected assortment of distinct stocks with equivalent hazard (Malkiel, 1973).

Fama (1965) defined an effectual market as a type of market that responds fast and comparatively accurate to new public info that results in charges that are accurate, on average. If markets are effectual and the existing prices completely reflect the information at a particular time, then dealing in securities in an effort to outdo the souk shall be incredible; a diversion of opportunity instead of skill. In an effectual marketplace, rivalry amongst the numerous intellectual contestants leads to circumstances where at any point in time, definite prices of distinct securities already reproduce the effects of info used on all actions that have by this time taken place and on the actions that as of now, the souk anticipates to happen in future. In an effectual souk, at any particular time, the definite value of a security will be a superior approximation of its inherent value.

The effectual marketplace proposition is associated with the knowledge of “unsystematic walk”. The sense of the unsystematic walk notion is flow of info is unhampered and info is instantly replicated in price of stocks, then tomorrow’s value vary will replicate future newscast and shall be autonomous of the price change nowadays. This research purposes

to examine the stock market response to declarations, using interest rate adjustments as public information and consequently semi-strong form market effectiveness will be verified.

### **1.1.1 Interest Rates Adjustment Announcements**

Section 36 (4) of the CBK Act specifies that the CBK will broadcast the lowermost interest rates it duties on loans to banks and that percentage will be recognized as the (CBR) Central Bank Rate (CBK 2016).Adam (2014) defines interest rate adjustment announcements as the alterations of the CBR vis-à-vis market rates at fixed intervals. Similarly, Cherono (2010) states that rates of interest adjustment is the periodical revision of the lowest interest rate the CBK charges on loans to commercial banks predicated on an catalogue which reveals the cost to the creditor of borrowing on the credit souks. The CBR level is revised and publicized by the Financial Policy Committee (FPC) at about every 2 months as well as its actions, both in magnitude as well as direction, signals the financial strategy stance. The Board was designed vide Gazette Notice 3771 on 30th April 2008 substituting the previously Financial Policy Review Committee (David, 2014).

It is normally presumed in the rate of interest modification literature that interest rate modifications will take place at a slow speed in marketplaces where companies have more market authority (Rosen, 2002). This hypothesis is likewise indirect in all the experiential literature on programs of variations in financial conditions (Hofmann, 2004). If that was factual, aspects that upsurge market authority would reduce market effectiveness in both stationary terms (higher virtual revenue margin) and dynamic terms (truncated price modification speed). But, as Borenstein (2002) specified, the link between market authority and price modification speed is not as forthright as it may appear.

### **1.1.2 Stock Returns**

According to Reilly and Brown (2004) returns on stock market (SMR) are the earnings that the shareholders produce out of the stock souk. They imply the term is used to define the earnings created by an agreed security in a specific time which is dissimilar from the

anticipated return rate. This yield may be in the procedure of revenue through tradeoff or in the method of bonuses given by the corporation to its stockholders from time-to-time. The most common form of producing stock market profit is through trading in the ancillary market. In the lesser souk an investor could get stock market profit by procuring a stock at lower price as well as selling at a higher price (Muriuki, 2013).

According to Steeley (2001), SMR are not fixed safeguarded returns and are subject to marketplace hazards. This thus means that stock revenues can be either a bad thing or a good thing, as it is just a summary of how the definite revenues vary from the predicted yield.

According to MacKinlay (1988), financial analysts use unsystematic walk methods to model performance of stock revenues. This practice is founded on the supposition that shareholders are coherent and impartial beings and that at any instant they approximate the rate of an asset based on forthcoming anticipations. Under these situations, all prevailing info affects stock revenues, which varies only when different information comes out. By definition, new info appears unsystematically and affects the stock returns unsystematically.

### **1.1.3 Interest Rates Adjustment Announcement as well as Stock Returns**

The association between rates of interest adjustments and stock returns is of interest not only to economic theorists but also to investors who have to grapple with issues regarding asset allocation and market timing (Watts, 1986). The most dependable proof on if interest modifications produces value for stakeholders draws on short-term incident researches (e.g Andrade et al., 2001; Hackbarth & Morellec, 2008). Most occurrence studies scrutinize unusual stock revenues around the interest alteration dates as a pointer of value formation or devastation. The fundamental principle for the association between rates of interest modification and stock souk earnings is that stock value as well as interest rates is adversely linked (Campbell, 1987). Higher rate of interest resulting from tightening financial policy commonly has negative effects on stock market prices. This is for the reason that act that higher rate of interest deceases the price of equity as indicated by the bonus discount ideal and consequently, makes fixed revenue securities more smart as a substitute to holding stocks (Ndirangu, 2008).

Empirically, the dispute of negative association between the prices of the stock as well as interest rate modifications is not disallowed. Fama (1981) claims that anticipated inflation are negatively connected to the expected real action, which in turn is definitely connected to prices on the stock souk. Thus, stock market charges must be negatively linked with projected price rises, which is regularly provided by the interest rate on short-term. However, the effect of interest rate on the long-term alteration on stock revenues decreases openly from the present cost model through the effect of the interest on the discount proportion. Rather than either long-term or short-run interest rates, Campbell (1987) inspected the association between the revenue spread as well as stock market fees. The author claims that comparable variables which have been used to predict extra yields in the term construction also forecasts extra stock earnings, inferring that a concurrent inspection of the yields on bills, as well as stock should be valuable. Zhou (1996) also researched the link amid rates of interest modifications using regression investigation. Zhou (1996) established that rates of interest have a significant influence on stock returns, particularly on long prospects. In addition, his outcomes show that long-run rate of interest clarify a main portion of the dissimilarity in value-dividend percentages and recommends that the high uncertainty of the stock souk is associated with the high unpredictability of long-term bond profits and might be accounted for by varying approximations of discount rates.

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

The Nairobi Stock Exchange (NSE) was listed in the Societies Act (1954) as a charitable organization of securities brokers as well as indicted with the duty of increasing the securities souk and controlling the actions of trading (NSE, 1997). The NSE Limited altered its name to the NSE Limited in July 6, 2011. The alteration of name was an image of the 2010 – 2014 strategic proposal of the Nairobi Securities Exchange to progress to a total service securities exchange that backs transaction, clearing and compensation of debit, derivatives, equities as well as other connected tools. It is, therefore, a part of the capital market (Business Daily, 2015).

In the year 1980s the Kenyan Government recognized the necessity to plan and execute strategy modifications to foster maintainable economic progression with effectual as well

as stable monetary system. As an outcome the Capital Markets Authority (CMA) was created in January the year 1990 over the CMA Act (Cap 495A) and initiated in March the year 1990. The key objective of creating the CMA was to have an organization explicitly charged with the duty of encouraging and assisting the development of a logical and effectual capital market in Kenya (CMA, 2015).

NSE is one of the most vibrant financial securities market in Africa after Johannesburg Stock Exchange and the Egyptian Stock Exchange (NSE, 2013). The key catalogs in the NSE are: Nairobi All Share Index (NASI) share index (NSE, website) the NSE 20 share index. Businesses with shares registered in the NSE 20 share index (See appendix 1).

When CBR is increased, investors expect the lending rates of the banks to increase which would discourage borrowing from the banks and thus decline in profitability and performance as customers seek for alternative financial sources where the lending rates are low. Consequently investors will buy less of stocks at the NSE and thus their prices go up. When CBR is reduced, investors expect banks to reduce lending rates which would encourage borrowing and thus increase profitability and performance. Consequently investors will buy more of the stocks at the NSE and thus their prices go down. Since NSE prices are highly volatile and depend on investor confidence these stock price changes lead to either a positive or negative influence in the Kenyan economy

## **1.2 Research Problem**

The association between rate of interest modifications and stock returns has been the topic of much speculation and empirical investigation. The relationship between the two is of interest not only to economic theorists but also to investors who have to grapple with issues regarding asset allocation and market timing (Watts, 1986). Whatever seems to be known about how share prices react to interest rates adjustment announcements is not extensive as studies specific to interest rates adjustments are comparatively scarce and some compare with the general array of researches done. Consequently, it is essential to re-inspect the legitimacy of the philosophies and theories with exact reference to my research.



A number of studies both international and local have been conducted on the subject of interest rates adjustment as well as stock souk. At the international level, McQueen and Rolley (1993) performed a study on the stock market reply to microeconomic newscast using unemployment rate as well as money supply declarations. They resolved that the stock souk response to macroeconomic newscast rest on the economy condition. Li and Hu (1998) also found that the stock souk response to macroeconomic tremors differ across dissimilar phases of the firm sequence. Ehrmann and Fratzscher (2004) researched the effect of the U.S. Federal Reserve financial strategy on the 500 different shares including the S&P500 over 1996-2003. They discovered that companies minor in magnitude, with lowly credit scores, little cash flows, and small debit to capital proportions, great price - salaries proportion and high Tobin's q are more influenced as compared to the others by financial policy.

At the local level, Mbugua (2004) examined the effect of stock bonuses on stock revenues on 24 corporations which allotted dividends. The results shown that stock dividend declaration have an effect on stock yields. The results also showed that the magnitude of the stock dividends has an influence on stock yields. On the other hand earnings announcements are completely confiscated in stock values earlier or almost immediately at the time of the declaration. Onyango (2004) in his study covered 16 companies out of a population of 48 registered corporations at NSE, discovering the period 1998-2003. The study established that the earnings announcement contain pertinent info which is entirely possessed in the stock prices before or almost instantly at the time of declaration. Secondary evidence resulting from the study showed that NSE demonstrates the occurrence of semi strong form of EMH. He suggested further research on information content to support his conclusion. Bernanke and Kuttner (2005) propose that variations in strategy rates of interest may affect: projected forthcoming cash flows; anticipated forthcoming risk-free proportion used to discount cash flows, as well as hazard premia. They similarly indicate that the influence on the hazard free proportion is a smaller percentage of the entire souk response that is largely driven by the effect on projected forthcoming cash flows.

Despite all the above studies, little is known about the market reaction to interest rate adjustment announcements in Kenya. This is the knowledge gap which this study will seek to bridge by analyzing market reaction to MPC's interest rate adjustments with a focus to equate the level of the market reaction between locally owned businesses versus foreign owned companies listed at the NSE. The study will address the following research queries, what is the outcome of interest rates adjustments on the share price changes of company stocks listed at the NSE, how company stocks prices react to positive and negative interest rate adjustment announcements?

### **1.3 Study Objective**

The aim of this research was to institute the effect of rates of interest adjustment announcements on stock revenues of corporations registered at the NSE.

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

The outcomes of this investigation would be of interest to various groups of individuals. First and foremost, they will be important to both local and international investors. The investors would be interested to know whether or not there are arbitraging opportunities provided by the Monetary Policy Committee's announcements.

The findings will also be important to the government. The Government has regulatory role in the markets and it usually gets the blame for corporate failures. The study will be useful for government to gauge whether to review the announcement of monetary policy committee information to various stakeholders.

Management of companies not only those listed at the Nairobi securities exchange but also other private companies will profit from the results of this study. Management is responsible for the daily running of the company. Information on market reaction to interest rate change announcements would be of significant insight on commercial bank management.

Finally, academicians will benefit from the results of this research because by and large the study will contribute to the organization of information on stock market effectiveness. Scholars can also use the study to assist them to do further research on other stock market conditions and reactions to various events.

## **CHAPTER TWO: LITERATURE REVIEW**

### **2.1 Introduction**

This section reviews the past literature on the investigation. Precisely, it critically examines the theoretical and empirical studies. The chapter also reviews more studies on interest adjustments in an economy. Possible variables that affect stock returns are also presented in this chapter. ..

### **2.2 Theoretical Foundation**

Under theoretical literature review, several theories by different researchers exist that seek to explain the link between interest rate modifications and stock returns. However the three keys ones especially for developing countries like Kenya are discussed below.

#### **2.2.1 Random Walk Theory**

The theory first set out by the statistician Louis Bachelier in 1900 expected a modern explanation by the economist Burton Malkiel in 1973 (Jarrett 2008/2009). The concept of random walk suggests that a sequence of stock value variations has no remembrance- the previous antiquity of the sequences cannot be used to forecast the forthcoming in any significant way (Fama 1965). In arithmetic terms, Random walk concept explains that successive stock price variations are autonomous of each other and have the similar possibility dissemination, but that at a particular time, values uphold an upward tendency. Subsequently there must be no consecutive association between the prices at dissimilar times (Fama 1970).

The rationale of the random walk idea is if the program of info is unhampered and info is openly replicated in stock worth, then tomorrow's price alteration will reproduce only tomorrow newscast and will be autonomous of the price variations now. Nevertheless newscast is by description random, and, therefore, occasioning price variations would be random and unpredictable. As an outcome, prices fully replicate all known info, and even uneducated investors purchasing a differentiated collection at the display of rates given by the souk will get a return rate as substantial as that accomplished by the specialists, it

would be incredible to outdo the market without supposing extra possibility (Malkiel 1973).

Malkiel (1973) insists that both practical examination as well as central examination are mainly time wastage and are yet to be unverified in outdoing the marketplaces. According to him, a long-term purchase-and grasp policy is the finest and that persons should not try to time/beat the souks. Efforts built on practical, central or any other examination are ineffective.

Criticizers of the philosophy, though, oppose that stocks do uphold price tendencies over time – that is to mean, it is possible to outdo the marketplace by prudently choosing entry as well as exit points for equity monies. Such critics include; Hong Kong (Jarreth, 2008), China (Ali, Darrat & Zhong 2008), Korea (Jarrett, 2008/2009) and Kenya (Muthama & Mutothya 2013).

### **2.2.2 Effective Market Hypothesis**

The Effectual-Market Theory was established by Professor Eugene at the Chicago University as an educational notion of research through his published Ph.D. proposal in the early 1960s (Halari, 2013). According to (Fama, 1970) souks are effectual and he states that it is impossible to "beat or forecast the souk" since stock fees already incorporate and reflect all relevant and available info. Malkiel (1973) argues that the term efficiency in effectual monetary markets means they don't permit stockholders to receive above normal revenues without accepting extreme average hazards. Jensen (1978) adds that effectual market theory is in spirit a postponement of the zero income inexpensive stability situations from the inevitability world of standard price philosophy to the vigorous conduct of prices in hypothetical souks under circumstances of indecision.

The key motive for an effective souk is the extreme struggle amongst stockholders to revenue from fresh info (Clarke, Jandik & Mandelker 2009). According to the EMH, shares constantly do business at their price value on stock exchanges, making it incredible for shareholders to either buy underrated stocks or vend stocks for overstated prices. As such, it must be difficult to outdo the whole market through proficient stock

assortment or market programing, and that the way a shareholder can perhaps obtain higher earnings is by buying riskier savings (Malkiel, 2003).

This is also a extremely contentious and often undecided philosophy. Supporters of this ideal have confidence in it because it is useless to exploration for underrated stocks or attempt to forecast tendencies in the souk over ultimate examination or technical examination. On the other hand, opposers argue that numerous shareholders base their prospects on previous prices, previous remunerations, track proceedings as well as other indicators since they deem it only makes logic to trust that previous prices affect future prices. Despite the fact that academics point to a big group of proof in support of EMH, shareholders, like Warren Buffet have steadily trodden the market over longer periods of time, where by description is difficult according to the EMH. Proceedings, like the 1987 stock market smash when the Dow Jones Manufacturing Average (DJIA) fell by over 22 percent in a one day, is an indication that stock values can extremely differ from their unbiased charges.

### **2.2.3 Signaling Theory**

The theory of signaling was learned in the background of occupation as well as product souks by Akerlof and Arrow and was established into Signal Balance Concept by Spence (1973), that states a good company can differentiate itself from a bad company by transferring a reliable signal about its superiority to capital souks. The signaling concept was legitimately presented by Ross (1977) and Bhattacharya (1979). Ross (1977) contended that in an unproductive souk, management and investors can use announcements such as dividend announcements or interest rate adjustment announcements to signal significant info to the marketplace which is only recognized to them. For instance shareholders can deduce info about a company's future incomes through the sign coming from disbursement declarations, that is, if dividends upsurges, it signals anticipated high revenue and thus stock prices will upsurge.

Ross (1977) demonstrates how debit can be used as an expensive signs to provide distinction between the bad from the good companies. Under the unequal info between administration and shareholders, indications from companies are critical to obtain

monetary wealth. Ross accepts that directors know the correct circulation of company revenues, but stakeholders do not. Signaling of complex debt by directors then proposes a positive future and high quality companies would use more debt although low quality companies have low debt levels.

## **2.3 Determinant of Stock Market Returns**

A several researches have been carried out to ascertain the aspects influencing stock prices in dissimilar stock markets. The revolutionary work on factors of stock revenues by Collins (1957) for US banks recognized net profit, dividend, operating earnings, as well as book value as the aspects affecting stock earnings prices. Following Collins, there have been numerous efforts to detect the factors of stock prices for dissimilar markets. Usually, macroeconomic aspects, microeconomic aspects as well as market views affect stock revenues.

### **2.3.1 Macroeconomic Factors**

Macroeconomic factors such as interest rates, inflation rates, GDP, foreign exchange rate etc. affect and determine stock returns at the stock exchange. Central Bank sets short-term rates of interest, which influence credits, credit cards and loans. The Central Bank drops charges to spur economic development and increases charges to regulate rate of inflation. Increasing rates mean greater costs of borrowing, which mean lower nonrefundable earnings for persons and less investment elasticity for industries. This can lead to lower incomes as well as profit margins, which would decrease equity revenues. Conversely, lower rates of interest could mean more customer as well as business expenditure, which would progress margins as well as equity revenues (Stickel, 1985).

Tweneboah and Anokye (2008) investigated prices of stocks in Ghana on statistics from the year 1991 to the year 2006. They used T-bill proportions as actions of rate of interest consumer price index as degree of inflation percentage, inward overseas direct venture, and exchange rate as macroeconomic feature. After put on dissimilar available models of association, regression, as well as incorporation they established that the rate of exchange, a macroeconomic aspect, has long run association amid the prices of the stock

of Ghana, even though the rate of inflation, FDI, as well as interest rates are the key factors of stock charges in Ghana.

Taulbee (2005) measured the effects of macroeconomic signs on the stock souk in S&P 500. The outcome indicated that the GDP have a substantial association with the stock price where joblessness as well as inflation has no noteworthy relationship with the stock price. Al-Tamimi (2007) defined an ideal to revert the variables. The multi-correlation test discovered very strong association between GDP as well as crude oil price, GDP, foreign rate of exchange, inflation rate as well as lending interest rate. All the variables had sturdy progressive association with stock charges apart from the interest proportion and foreign rate of exchange, which had stronger adverse association with stock charges. Mirza (2008) researched book to market (B/M) proportion as main factor of share prices. The author resolved that the size as well as the size of premium given to shareholder will improve the stockholders to capitalize more in the stock as an outcome of which the prices of the stock will rise.

### **2.3.2 Microeconomic Factors**

According to Jin and Jin (2008), firms' performance affects returns of stocks at the stock exchange. In a study to investigate association between company performance (Yield on Equity, return on asset, profit margin, earning per share, changes in sales, as well as total asset turnover) and stock revenues of the top accomplishing stocks registered on Shanghai Stock Exchange, Dehuan and Jin (2008) discovered that all the variables are expressively linked with prices of the stock in the year before disaster. But, in the crisis period the company performance have no descriptive authority toward stock price program.

Uddin (2009) examined the association of microeconomic aspects with the price of stock by using Many Regression Examination. This study discovered a noteworthy linear connection among market yield as well as certain microeconomic aspects like net asset price per share, dividend proportion, earning for each share of bank renting, as well as insurance businesses. He also discovered that non-linear association amongst the variables is unimportant at 95 percentage level of connotation.

Fisher (2009) determined the association between British stock returns and dissimilar measurable variables. It displayed the effect of dividends, uncirculated profits, as well as company magnitude on stock revenues taken from 5 cross-sectional examples of equities cited on the London Stock Exchange between 1949 and 1957. Al- Shubiri (2010) examined the connection of microeconomic aspects with the stock value by using multiple as well as simple regression examination. 14 profitable banks of Amman Stock Exchange, for the period of 2005-2008, were nominated for the research. The research discovered highly positive noteworthy connection between the price market of stock as well as NAV for each share; marketplace price of stock dividend proportion GDP. It also discovered negative noteworthy link on loaning interest rate and inflation.

### **2.3.3 Market Sentiment**

Muriuki (2013) noted that market sentiment entails the sensibility of market contestants, independently as well as communally. This is possibly is the annoying class since we know it is substantial disapprovingly, but we start to comprehend it. Market sentimentality is normally personal, unfair and fixed. For instance, it is possible to make a concrete verdict concerning a stock's forthcoming development predictions as well as the future might even authorize your forecasts, nonetheless in the temporary the market may shortsightedly dwell on a single piece of newscast that keeps the stock theatrically high or low.

Market sentimentality is being discovered by the comparatively new arena of social money. It begins with the supposition that souks are actually not effectual more time, and this inadequacy could be elucidated by thinking and other communal disciplines. The notion of applying communal science to economics was completely legalized when Daniel Kahneman, won the 2002 Nobel Memorial Prize in Economics. Numerous of the thoughts in interactive business approve noticeable doubts: that stakeholders tend to exaggerate data which emerge effortlessly to mind; that numerous stakeholders respond with superior pain to losses than with preference to equal gains; and that shareholders tend to carry on in an error (Muriuki, 2013).



## **2.4 Empirical Studies**

This section reviews several studies done both locally and internationally on the link between interest rate adjustments and stock returns.

### **2.4.1 International Empirical Literature Review**

Gazi (2005) conducted a study on the effect of rates of interest on the stock souk at the Dhaka stock exchange. The key aim of this study was to seek evidence backing the actuality of market effectiveness on the Dhaka Stock Exchange founded on day to day overall price index 1994 to 2005 and also displays experiential association between stock index and rate of interest in Bangladesh established on monthly statistics from May 1992 to June 2004. Fixed of market profit was verified and it was established that DSE Index did not follow unsystematic walk model which was a sign that DSE is not effectual in week form. It was established that rate of interest has important negative association with Share Price and Growth of Interest Rate also has noteworthy negative connection with Growing of Share Price.

Ime (2014) conducted a research on Outcome of Interest Rates on Stock Prices; an Examination of the All Share Index. This paper examined the effect of rate of interest changes on the Nigerian stock marketplace- two very key aspects of the economy of a nation. It studied the performance of the Nigerian Stock Exchange All Share Index (NSE ASI) to the changes in the central bank of Nigeria's (CBN) interest rate over a period of 25 years (1986-2011). The problem identified indicated that the All Share Index responded differently to interest rate hikes and cuts. The objective, therefore, was to research the relationship which exists between the All Share Index and the changes in interest rates. Data obtained from the CBN and NSE was analyzed based on a six-month and twelve-month percentage change basis with their respective averages taken. The study made use of the bivariate and multivariate regression examination simulations for periods of interest rate cuts and hikes. The study discovered that the impact of interest rate is not significant when other variables influencing the prices of the stock are controlled.

Husni (2010) researched on the relations between rate of stock market capitalization and rate of interest in Jordan. The main objective of his research was to study the effect of rates of interest on the stock souk capitalization percentage in Amman Stock Exchange (ASE) between the years 1999 to 2008. Based on the numerous linear regression ideal as well as simple regression ideal, the time sequence examination discovered that there is substantial and constructive association amid government predominant rate of interest as well as rate of stock souk capitalization.

McQueen and Roley (1993) surveyed the market stock reactions to macroeconomic newscast through dissimilar economic countries using job loss as well as money distribution declarations by conducting an event research. The authors gave a proof that the stock souk's reaction to macroeconomic newscast relies on the situation of the economy. These outcomes had been established by Li and Hu (1998) displaying that stock souk reactions to microeconomic tremors differ across diverse phases of the trade sequence.

Leigh (1997) inspected the association of the Market Stock in Singapore in addition the general economy. The research offered a proof that the semi-strong form of efficacy is not excluded for Singapore Market Stock. The study displays that there is a substantial connection between stock market incomes, money, inflation and investment.

Booth and Booth (1997) using National discount rate as well as fund amount have established these outcomes. They exhibited that a restricting financial strategy standpoint depresses monthly revenues of both huge and smaller stock collection. They established that financial policy has descriptive power in predicting stock range yields. Ehrmann and Fratzscher (2004), researched the effect of the U.S. Federal Reserve financial plan on the 500 distinct stocks encompassing the S&P500 over 1996-2003, found that companies smaller in magnitude, with little cash flows, poor credit scores, high price-earnings percentage, low debt to capital fractions, and high Tobin's are more influenced than others by financial policy.

### **2.4.2 Local Empirical Literature Review**

Ondigo (1995) examined information content of 18 “blue chip” companies cited in the Nairobi stock exchange in the period 1990 — 1994. The study revealed that the annual reports and accounts of the sampled firms do not have statistically significant information content. He concluded that it would be futile for investors to spend more time and effort in analyzing both annual reports and accounts because the content is already captured through timely media which includes interim reports, dividends, bonus and individual company’s releases. The study concluded that as far as the semi strong model of EMH is concerned, the study was inclusive. He suggested more research with other forms of public information.

Mbugua (2004) in his research surveyed the impact of stock dividend on stock revenues on 24 companies, which issued stock dividend. The results indicated the stock dividend announcements have an effect on stock yield. The outcome also specified that the magnitude of the stock dividends have an effect on stock earnings. On the other hand earnings announcements are fully confiscated in stock prices previous to or almost promptly at the time of declaration.

Onyango (2004) in his study covered 16 companies out of a population of 48 registered firms at NSE, discovering the period 1998 to 2003. The study decided that the earnings announcement contain pertinent info which is entirely impounded in the stock prices previous to or almost promptly at the time of declaration. Secondary evidence resulting from the study showed that NSE shows the presence of semi strong model of EMH. He suggested further research on information content to support his conclusion (Bernanke and Kuttner 2005).

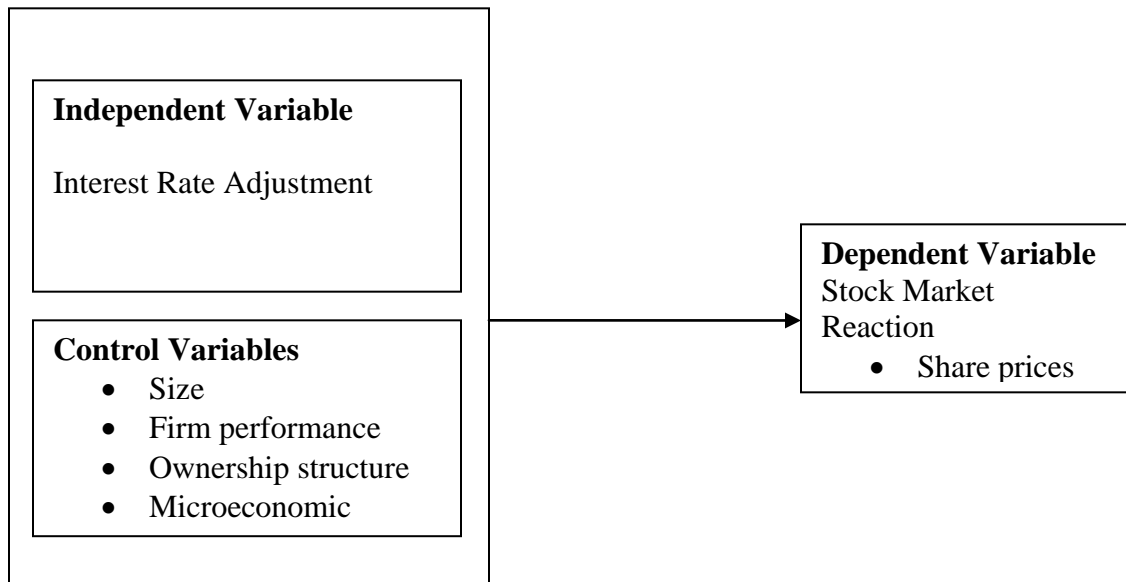
Ndirangu (2008) tested the share price reaction to announcement of COYA Awards and found that winning companies participating in COYA reported cumulative adjusted abnormal returns. Cheronno (2010) studied on market reaction to cross border listings for companies quoted at the NSE. The study found that the market replies adversely to declarations of cross border listings, though the reaction is infinitesimal which pointed to imperfect market in the semi strong form. Mohamed (2010) researched the outcome of

earning proclamations on the stock prices of businesses registered at the NSE. He studied 45 companies declaring earnings between January 2004 and December 2008. The study found that earning announcement may carry some info for the market as well as stock prices may be attuned accordingly. The findings showed that statistically noteworthy negative irregular revenues were perceived in the post and pre-earnings announcements period.

Odumbe (2010) investigated the information content of bonus share announcements for 38 bonus issue announcements for 26 companies listed on NSE over the period of January 2000 — September 2010, the results exhibited that the stock values reacted to the declaration of gratuity issue. He concluded that bonus issue announcements contained information useful for valuing stocks. The results also showed that market confidently received the bonus announcements info before the declaration camp up. The analysis however portrays the detail that the souk improved substantial responses in the stock charges during the post as well as pre declaration times. He concluded that capital markets in general are not perfectly effectual to the declaration of bonus issue. This informational inadequacy is applied by shareholders for making anomalous revenues at some facts of the declaration time. The study recommended that stock souk may use that info to review the values of securities as well as shareholders are recommended that if the business arises with a gratuity issue, the stockholder must take instant security choice (buy and sell) to succeed from bonus issue declaration.

Anyumba (2010) tested the random walk model on NSE and found the model to hold. He found that NSE follows a random walk and according to his study the bourse was classified as an efficient market under the weak form. Aduda and Chemarum (2010) studied the market reaction to stock splits for corporations cited at the Nairobi Securities Exchange for the time 2002 to 2008. The research discovered that the Kenyan marketplace responds certainly to stock separates as shown by overall upsurge in capacities of shares traded around the stock splits. From the above mentioned empirical studies, whatever seems to be known about how prices of shares react to interest rates adjustments is not extensive because studies specific to interest rates adjustments are relatively scarce and some contrast with the wide collection of studies done.

## 2.5 Conceptual Framework



**Figure 2.1: Conceptual Framework**

When CBR is increased, investors expect the lending rates of the banks to also increase which would discourage borrowing from the banks by the customers and thus decline in profitability and performance as customers seek for alternative financial sources where the lending rates are low. This therefore means that investors will buy less of stocks at the NSE and thus their prices go down. When CBR is reduced, investors expect banks to reduce lending rates which would encourage borrowing by the customers and thus increase profitability and performance. This therefore means that investors will buy more of the stocks at the NSE and thus their prices go up.

The connection between interest rate adjustment and market reaction will also be moderated by the size of the bank as well as its ownership structure. A big bank with a greater asset base and a diversified portfolio will not increase by a wider margin its lending rates when the CBK increases CBR. Likewise, commercial banks whose majority shareholder is the government and whose main objective is not profit making may not even increase rates with the announcement of a CBR increase.

## **2.6 Summary of Literature Review**

In conclusion there is a wide literature that supports and goes against market efficiency. The Random Walk, EMH and Signaling theories each try to explain market efficiency from different aspects and provide a good basis for empirical study. The study has also reviewed various empirical studies undertaken on the subject. From the above mentioned theories and empirical studies, whatever seems to be known about how prices of shares react to interest rates adjustments is not extensive because studies specific to interest rates adjustments are relatively scarce and some contrast with the widespread collection of researches done. Given these alterations, it is essential to survey the validity of the philosophies and theories with specific reference to the relation between interest rate adjustments and abnormal stock returns. This is the knowledge gap which this study will seek to bridge by analyzing market reaction to MPC's interest rate adjustments with a focus to compare the level of the market reaction between locally owned banks versus foreign owned banks registered at the NSE.

## **CHAPTER THREE: RESEARCH METHODOLOGY**

### **3.1 Introduction**

This part sets out the blueprint for the collection, measurement and examination of facts. Precisely the following subsets are encompassed; study design, target populace, data gathering tools, data gathering techniques and lastly data examination.

### **3.2 Research Design**

To survey and comprehend the impact of interest rate adjustments on stock returns, and therefore to determine if there are any tendencies or arrangements suitable for trading, the study adopted a descriptive design using the event study methodology. We wanted to perceive if stock prices afterward show abnormal revenues (i.e yields in surplus of their anticipated return after recompensing for hazard)

According to Bodie et al. (2011), occurrence research is an experiential investigation method that can observe the impact of a specific occasion on a company's stock price. This approach is founded on the theory that, given thinking in the souk place, the impact of an incident will be replicated instantly in charges of asset, Brown and Warner (1985). Mackinlay (1997) noted that the economic effect of an event can be created using security prices detected over a shorter period. Beverly (2007) concurs and notes that event researches are broadly used in academic bookkeeping and funding fields to evaluate the special effects of an incident on the worth of a company. Event studies have a longer account dating to Dolley (1933) who surveyed the impact of stock differences on share charges. Researches by Ball and Brown (1968) and Fama, Fischer, Jensen and Roll (1969) presented this method that is basically used currently.

### **3.3 Population of the Study**

A populace is the full group of persons, events, or things of interest that meets a designated set of criteria or shares some similar characteristics; that the researcher wishes to investigate and make generalizations (Polit & Hungler 1999). Population forms a base from which the subjects or samples for the research is drawn. The population in this study was a census of all the firms cited at the NSE (See appendix 1)

### **3.4 Data Collection Method**

The research used of secondary statistics. Three datasets are used to examine abnormal returns and to examine value effects of interest rate adjustments in this research. The datasets included descriptions and records of interest rate adjustment events, daily closing prices of the NSE 20 share index, and stock market indexes. The day-to-day stock prices and stock market indexes are pulled together from Nairobi Securities Exchange. The descriptions and data relating to MPC's interest rate adjustments (Central Bank Rate) are drawn and collected from the CBK website as it is readily available. The analyses were conducted over the 2010- 2015 period.

### **3.5 Data Analysis**

Data examination is the procedure of converting raw data to profitable information usable to the research in making conclusions about the research topic (OECD, 2001). This study used both descriptive and inferential statistics. In order to examine the outcome of the CBR declaration, event research method is carried out by computing the anomalous revenues (AR) of every stock, average anomalous revenues (AAR), as well as cumulative average abnormal revenue (CAAR) 30 days previous and after the union declaration . To compute the anomalous return, market ideal was used by regressing the day to day stock yield with the conforming market yield on the assessment time.

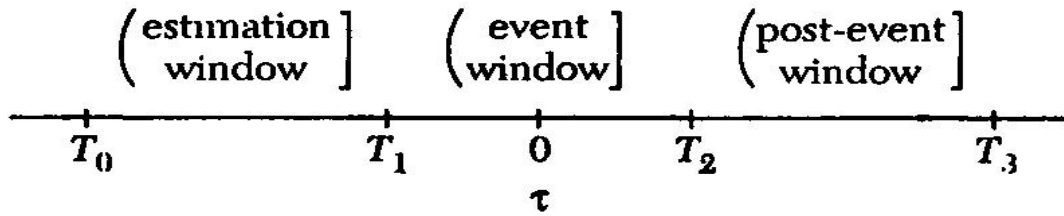
After the estimation model is determined and both estimated and actual return obtained for each stock within the sample, the dissimilarity amid the two revenues is planned for every day. Statistical package for social science (SPSS) was used as a help in the analysis. The investigator preferred SPSS for the reason that of its capability to cover a broad choice of usual arithmetical and graphical statistics examination is extremely organized. SPSS was used to produce market revenues, anomalous revenues and numerical value to test importance. Graphical as well as Tables demonstrations as suitable were used to present data gathered for easiness of examination.

#### **3.5.1 Event and Event Period**

The first phase is to describe the occasion and the incident gap. The event of interest in this study is interest rates adjustment that is usually announced by the MPC every first



Tuesday of the month, for a period of 5 years between 2010 and 2015. Stock prices during each year was studied for a period of 15 days, seven days prior and after the announcement day (-7 to +7). The window is chosen as it is long enough to provide evidence of abnormal returns and yet short enough to reduce the probability of confusing effects from other market actions (Mackinlay, 1997). The comparison period (estimation window) for this study comprised of 30 surrounding days before the event study and 30 surrounding days after.



**3.5.2 Daily Security/Stock Returns**

The revenues of every stock along the approximation window and the event window is computed using the formulation below

$$R_{it} = \frac{(P_{it} - P_{it-1})}{P_{it-1}} \dots\dots\dots (1)$$

Where  $R_{it}$  is the yield of stock  $i$  at day  $t$ ,  
 $P_{it}$  is the final price of stock  $i$  at day  $t$   
 $P_{it-1}$  is the concluding price of stock  $i$  at day  $(t-1)$

**3.5.3 Daily Market Returns**

Next is to compute the market yield. The equivalent market yield is also computed along the approximation window and the event gap. The researcher used the NSE 20-share index as a substitution for the marketplace returns

$$R_{mt} = \frac{(P_{mt} - P_{mt-1})}{P_{mt-1}} \dots\dots\dots (2)$$

Where  $R_{mt}$  is the market yield at day  $t$ ,  
 $P_t$  is the final value of market yield at day  $t$   
 $P_{t-1}$  is the final value of market yield at day  $(t-1)$

A regression examination was carried out using the real day-to-day return of each stock ( $R_i$ ) as dependent variable as well as the equivalent daily market return ( $R_m$ ) of the NSE as independent variable over the approximation window to attain the intercept alpha and the slope beta for every stock distinctly. Table 2

### 3.5.4 Normal/Expected Returns

The normal yield entails the yield that would be anticipated if the result did not occur, also known as the expected return. In this study the Market ideal was used to estimate the normal return. The market model suggests that the only aspect determining the yield on stock  $i$ , at time  $t$ , is the return on the marketplace at time  $t$ . This relative is modeled linearly, as in equation (1)

$$E(R_{it}) = \alpha_i + \beta_i R_{mt} + \varepsilon_{it} \quad (3)$$

Where  $t$  is the time index,  $i = 1, 2, 3, \dots, N$  is security,  $R_{it}$  and  $R_{mt}$  are the yields on security  $i$  and market collection, respectively, during period  $t$ ,  $\varepsilon_{it}$  is the zero mean disturbance term. Alpha ( $\alpha$ ) and beta ( $\beta$ ) are the restrictions of the market ideal. These restrictions can be projected via normal least squares regression.

### 3.5.5 Abnormal Returns

The abnormal return is the prediction error. With the approximations  $\alpha_i$  and  $\beta_i$  from equality (1), a normal yield is projected during the days concealed by the incident window. The abnormal return (AR) is the difference between the definite return and the expected/predicted normal return for every security at each point in time during the event window, as in equation (2)

$$AR_{it} = R_{it} - E[R_{it} | X_t] \quad (4)$$

Where  $AR_{it}$  : Abnormal returns,  $R_{it}$  : Actual returns,  $E[R_{it} | X_t]$  : the anticipated returns,  $X_t$  : Acclimatizing info, rejecting the event in question

Another method used to approximate anomalous yields to further check the sensitivity of our outcomes is just to subtract the market return (using the equally-weighted market index),  $R_m$ , from the equivalent company return over a particular period  $t$ . That is,

$$AR_{it} = R_{it} - \alpha_i - \beta_i R_{mt} \quad (4)$$

$$AR_{it} = R_{it} - R_{it}$$

Where  $R_{it}$  is the actual return on stock  $i$  at time  $t$

This method makes the supposition that the beta for all firms is 1 (and  $\alpha_i = 0$ ), thus offering a dangerous test of the sensitivity of the consequences to beta approximation or shifts.

### 3.5.6 Average Abnormal Returns (AAR)

This aggregates the anomalous revenues for all  $N$  stock to find the regular anomalous yield at every time  $t$ , i.e. each day in the event window. This helps eradicate peculiarities in measurement due to specific stocks. AAR is computed each day using the formula

$$AAR_t = \frac{1}{N} \sum_{i=1}^N AR_{it} \quad (5)$$

Where  $N$  is the amount sample corporations In this research the  $N$  is 20.

### 3.5.7 Cumulative Average Abnormal Returns (CAAR)

Lastly, sum the average anomalous revenues over the  $T$  days in the event gap to form the Cumulative Average Abnormal Return (CAAR).

$$CAAR_i(T1, T2) = \sum_{t=T1}^{T2} AAR_t$$
$$CAAR_T = \sum_{t=1}^T AAR_t \quad (6)$$

The  $CAAR$  is a valuable arithmetical examination on top of the  $AAR$  since it assists us gets logic of the combined consequence of the anomalous revenues. To view the drive of combined Anomalous yield across shares and over time,  $CAAR$  and  $AAR$  is the plotted during the event of the gap (day -7 to +7).

## CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION

### 4.1 Introduction

This section provides the data results on establishing the outcome of interest rates adjustments on stock returns of companies registered at the Nairobi Securities Exchange, in particular, section 4.2 covers the descriptive statistics which summarizes the data collected, in section 4.3 presents the estimated /empirical model for the research, section 4.4 presents the discussion of the research findings in relation to existing literature and section 4.5 covers the summary of the chapter.

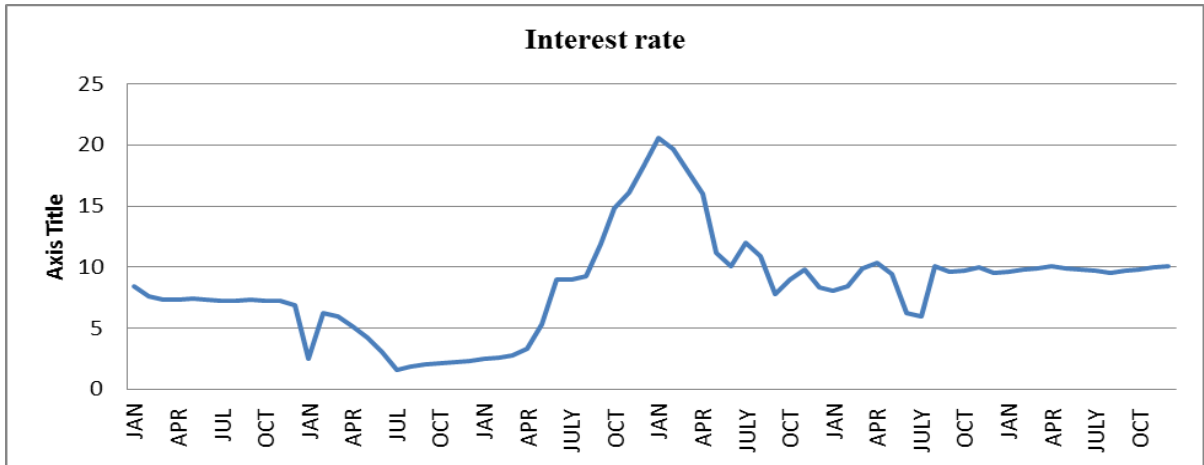
### 4.2 Summary Statistics

In section 4.2 the study present the research finding on the descriptive statistic of the data collected. Table 4.1 presents the research finding on the descriptive analysis of stock market return and interstate return.

**Table 4.1: Descriptive Statistics**

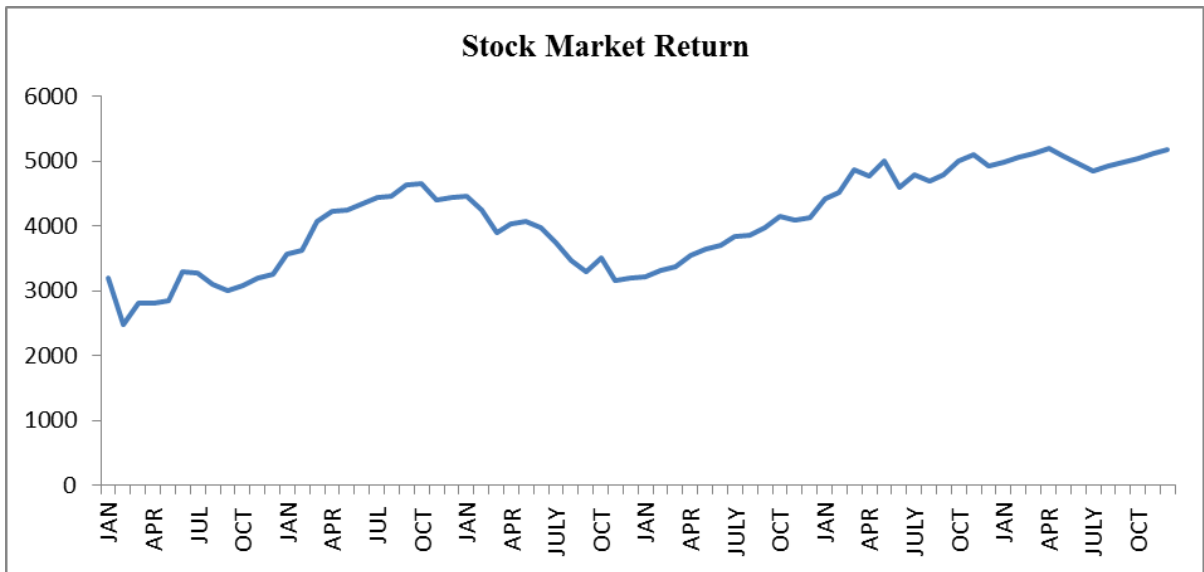
	N	Minimum	Maximum	Mean	Std. Deviation
	Statistic	Statistic	Statistic	Statistic	Statistic
Interest rate	72	1.60	20.56	8.4758	4.14046
Stock Market Return	72	2474.75	5188.21	4100.204	743.16221

Table 4.1 above shows the descriptive figures for the variables under study with 72 observations each form the time series data. As indicated in table 4.1 above, the market returns ranged from 2474.75 to 5188.21 with an average of 4100.204 and a standard deviation of 743.16221. The mean interest rate was 8.4758, with standard deviation of 4.14046.



**Figure 4.2: Interest Rate Movement 2010 To 2015**

Figure 4.2 above shows the movement or trend of interest rates in Kenya shown by CBR rate. It shows that the interest rate in Kenya have not had a consistent growth or decline pattern over the years with the highest rates experienced in 2013 and part of 2014 probably attributed to the rise in the exchange rates between the Kenya shillings and major foreign currencies. Interest rates were standardized for ease of comparison.



**Figure 4.3: Stock Market Returns Movement 2010 To 2015**

Figure 4.2 above shows the movement or trend of stick market return in Kenya shown by NSE index. It shows that the stock market in Kenya have not had a consistent growth or decline pattern over the years.

### 4.3 Empirical Model

To examine the effect of the CBR declaration, research method is carried by calculating the anomalous revenues (AR) of every stock, average anomalous revenues (AAR), and cumulative average anomalous return (CAAR) 30 days previously as well as after the rate of interest adjustment. To compute the abnormal yield, market ideal is employed by regressing the day-to-day stock yield with the conforming market yield on the approximation time.

#### 4.3.1 Regression Analysis

In this study, a multiple regression analysis was conducted to test the influence among predictor variables. The research used statistical package for social sciences (SPSS V 22) to code, enter and compute the measurements of the multiple regressions

**Table 4.2: Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.788 <sup>a</sup>	.621	.604	.06210

Adjusted R squared is coefficient of determination which tells us the variation in the dependent variable due to changes in the independent variable. From the findings, the value of adjusted R squared was 0.604 an indication that there was variation of 60.4% on stock market return dues to interest rtae adjustment at 95% confidence interval. This shows that 60.4% changes on stock market return could be accounted for by interest rtae adjustment. R is the correlation coefficient which shows the relationship between the study variables. From the findings, the study found that there was a strong positive relationship between the study variables as shown by 0.788.

**Table 4.3: Analysis of Variance**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Residual	0.711	1	0.711	4.903	.001 <sup>b</sup>
	Regression	10.15	70	0.145		
	Total	10.861	71			

From the ANOVA statistics, the processed data, which is the population parameters, had a significance level of 0.01 which shows that the data is ideal for making a conclusion on the population's parameter as the value of significance (p-value) is less than 5%. The calculated value was greater than the critical value ( $2.493 < 4.903$ ) an indication that interest rate adjustment significantly affect stock market return. The significance value was less than 0.05, an indication that the model was statistically significant.

**Table 4.4: Coefficients**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	Constant	1.445	0.453		3.190	.002
	Interest rate adjustment	0.421	0.145	.297	2.903	.003

From the data in the above table the established regression equation was

$$Y = 1.445 + 0.421 X_1$$

From the above regression equation, it was revealed that holding Interest rate adjustment to a constant zero, stock market return would be at 1.445. The results on table above reveal that Interest rate adjustment had a significant coefficient (B= 0.421, p value=0.003). This implies that Interest rate adjustment had positive significant effect on stock market return.

#### 4.3.2 Event study methodology

To examine the effect of the CBR declaration, research method is carried by calculating the anomalous revenues (AR) of every stock, average anomalous revenues (AAR), and cumulative average anomalous return (CAAR) 30 days previously as well as after the rate of interest adjustment. To compute the abnormal yield, market ideal is employed by regressing the day-to-day stock yield with the conforming market yield on the approximation time.

**Table 4.5: Average Abnormal Returns**

<b>kDays</b>	<b>AAR</b>	<b>t</b>	<b>Sig. (2-tailed)</b>
-7	.5264	2.515	.053
-6	1.2743	.059	.955
-5	.3490	.262	.804
-4	.2696	1.926	.112
-3	.8296	1.390	.223
-2	1.0894	2.629	.047
-1	2.3329	1.967	.106
0	4.5166	1.834	.126
1	3.2317	-1.841	.125
2	.8559	-2.758	.040
3	.2945	-1.660	.158
4	.2251	-1.346	.236
5	.1447	.656	.541
6	.0607	-1.318	.245
7	.1299	.365	.730

Table 4.2 which presents the abnormal yields for the whole souk following the interest rate adjustment shows that t-2 to t1 had a positive abnormal yields of values superior than 1; 1.0894, 2.3329, 4.5166 and 3.2317 respectively. The period between t2 to t 7 had average abnormal yield of less than 1 which means that no investor benefitted from above normal returns pointing at market adjusting to the interest rate adjustment. This implies that the market do not respond very fast to interest rate adjustment which might point to effectiveness, but not flawlessly effectual. However, period between between t-7 to t1 had above normal returns meaning that the stakeholders enjoyed above normal yields. This could point at insider dealing just before interest rate adjustment or use of the adjustment to adjust stock worth to a more marketable choice.



**Table 4.6: Average Security Returns Variability**

Day	2010	2011	2012	2013	2014	2015	Mean (ASRV)	STDEV	T- stat	Sig
-7	1.5091	0.0529	0.5722	0.2748	0.2228	0.5617	0.5264	0.5191	2.484	0.056
-6	0.0842	0.0006	1.6167	0.0506	4.6194	1.2843	1.2743	1.7801	1.754	0.140
-5	0.0534	0.0436	0.9875	0.2656	0.3947	0.0612	0.3490	0.3457	2.473	0.056
-4	0.1488	0.0395	0.0364	0.0256	1.0976	0.6792	0.2696	0.4164	1.586	0.174
-3	1.8347	0.0239	0.3873	0.1905	1.7117	0.1871	0.8296	0.7799	2.605	0.048
-2	0.1197	1.3491	0.1161	2.1002	1.7619	0.0043	1.0894	0.8281	3.222	0.023
-1	1.1701	1.5539	0.8913	7.6982	0.3512	0.0597	2.3329	2.7111	2.108	0.089
0	6.0276	11.1829	1.4889	3.8835	0.0000	0.1160	4.5166	3.9164	2.825	0.037
1	1.7725	1.5187	11.4097	0.9723	0.4855	0.1512	3.2318	4.1131	1.925	0.112
2	0.0095	1.3087	0.6040	0.8164	1.5409	0.2852	0.8559	0.5396	3.886	0.012
3	0.1961	0.6457	0.1237	0.2454	0.2614	0.0949	0.2945	0.1820	3.962	0.011
4	0.1557	0.7719	0.0919	0.0585	0.0473	0.4682	0.2251	0.2760	1.997	0.102
5	0.0528	0.5394	0.0007	0.1295	0.0011	0.2773	0.1447	0.2029	1.747	0.141
6	0.0150	0.0761	0.0446	0.0850	0.0829	0.0036	0.0607	0.0271	5.491	0.003
7	0.2558	0.0381	0.2120	0.1435	0.0000	0.0523	0.1299	0.0981	3.244	0.023

The study sought to establish the variability of the stock return following interest rate adjustment thus determine the market reaction to interest rate adjustment. The info presented in table 4.3 displays that that the variability in stock market return do increase erratically with time though there is more variability in the days preceding and after interest rtae adjustment. In 2011, the security yield changeability increased to 11.1829, in 2010 the SVR rose to 6.0276 while in 2014 the SRV was 0. Nonetheless, the t-significance displays 7 of the figures were substantial; 5 of that was the post adjustment period. The adjustment day had a regular ASRV of 4.5166 at 95% confidence level. Findings support the strong form effective market theory since stock market return regulate so fast to public info that no shareholder can receive an beyond standard yield by tradeoff on the modification day as well as period afterwards.

**Table 4.7: Average Value of ASRV for Interest Rate Adjustemnt**

<b>Assessment Period</b>	<b>Security Yield Variability</b>
Beginning day -7 to day -1	1.0607
Beginning day 0 to day +7	3.4875
Beginning day 0 to day +1	3.8742
Beginning day -1 to day 1	3.3604
Commencing day -3 to day +3	1.8787
Commencing day -7 to day +7	1.0753

To examine the speed at where the stock market engrosses the interesr rate modification in its yield, the research offered the average security revenue variability across the modification period. As specified by the table, stock variability was more in post declaration period than pre-declaration period; while t-7 to t-1 had ASRV of 1.0607, t0 to t7 had ASRV of 3.4875. Between t0 and t1 the ASRV was 3.8742, t-1 to t1 had a variability of 3.3604. Day t-3 to t3 had ASRV of 1.8787 and t-7 to t7 had ASRV of 1.0753. Therefore, the stock market definitely engrossed rate of interest adjustment info completely.

**Table 4.8: Cumulative Average Abnormal Returns**

	t	Mean CAAR	Sig. (2-tailed)
-7	-.277	-.8767	.787
-6	-.674	-1.8009	.516
-5	-.653	-1.6090	.528
-4	2.023	-2.2557	.330
-3	2.495	-.9429	.631
-2	2.461	-.7805	.655
-1	1.277	.3476	.787
0	1.985	.9602	.348
1	2.150	.9728	.277
2	.845	.9259	.418
3	2.953	2.8412	.079
4	2.660	2.4830	.128
5	.995	1.7084	.343
6	.931	1.7262	.374
7	.684	1.3705	.510

From the results shown in table above the mean CAAR was found to be positive in the period after interest rate adjustment an indication that the trading volume reacted positively towards the interest rate adjustment, in the period before interest rate adjustment the mean CAAR was found to have both negative value and indication the market was not sensitive to interest rate adjustment , in the results on t- value the study found that period surrounding the event date the value of t was close to 2 an indication that trade volume were very sensitive to interest rate adjustment .

**Table 4.9: Average Value of ASRV for Interest Rate Adjustemnt**

<b>Estimation Period</b>	<b>Security Return Variability</b>
Beginning day -7 to day -1	1.1278
Beginning day 0 to day +7	3.1148
Beginning day 0 to day +1	3.1769
Beginning day -1 to day 1	3.1439
Beginning day -3 to day +3	1.9787
Starting day -7 to day +7	1.2353

To examine speed the stock marketplace absorbs the interest rate adjustment in its stock market return; the study offered the average trade volumes return changeability across the rate of interest adjustment periods. From the results in the table 4.9, trade variability was more in post announcement period than pre-announcement time; while t-7 to t-1 had ASRV of 1.1278, t0 to t15 had ASRV of 3.1148. Between t0 and t1 the ASRV was 3.1769, t-1 to t1 had a changeability of 3.1439. Day t-3 to t3 had ASRV of 1.9787 and t-7 to t7 had ASRV of 1.2353. Thus, the trade volumes in the stock market positively absorbed interest rate adjustment restricted info confidently.

#### **4.4 Discussion**

The research found that there was a positive abnormal returns, which means that no investor benefitted from above normal returns pointing at market adjusting to the interest rate adjustemnt. This implies that the market do not respond fast to rate of interest adjustment which could point to efficacy, but not perfectly efficient. The study revealed that variability in stock market return do increase erratically with time though there is more variability in the days preceding and after interest rate adjustment. Findings support the strong form effectual market theory because stock market return modify to public info that no stockholder can receive above usual yield by trading on the adjustment time afterwards. The study finding concur with the finding of Leigh (1997) that there is a noteworthy association between inflation, stock market yields, investment, consumption and money. Booth and Booth (1997) found that financial policy has descriptive power in estimating stock collection returns. Ehrmann and Fratzscher (2004) found that companies

lesser in magnitude, with low cash flows, poor credit assessments, and low debt to capital percentages, high price - earnings proportion and high Tobin's q are more affected than others by financial policy.

The study established that stock variability was more in post-declaration period than pre-declaration period; while t-7 to t-1 had ASRV of 1.0607, t0 to t7 had ASRV of 3.4875. Between t0 and t1 the ASRV was 3.8742, t-1 to t1 had a variability of 3.3604. Day t-3 to t3 had ASRV of 1.8787 and t-7 to t7 had ASRV of 1.0753. Therefore, the stock market absolutely absorbed interest rate modification information completely. The research finding disagree with the result of Gazi (2005) discovered that Rate of Interest has important negative connection with Share Price as well as Increase of Interest Rate also has substantial negative connection with Increase of Share Price. Husni (2010) exhibited that Government expansion stock rate exerts negative effect on stock souk capitalization rate; similarly it discovered an important as well as negative connection between government prevalent interest rate as well as Government expansion stock rate.

#### **4.5 Summary**

This chapter has captured the study findings on establishing the effect of rates of interest adjustments on stock revenues of companies registered at the NSE; the chapter has presented the data in systematic manner from the descriptive statistics, empirical model for the study and debate of the study results in relative to existing literature.

## **CHAPTER FIVE: SUMMARY AND CONCLUSION**

### **5.1 Introduction**

This section gives a chapter presents the summary of finding, conclusion and recommendations on the effect of rates of interest adjustment announcements on stock revenues of companies registered at the NSE.; in particular, the chapter covers the section 5.2 covers the Summary of the research, in section 5.3 section offers deduction, section 5.4 presents the limitation of the study and segment 5.5 presents the recommendations.

### **5.2 Summary of the Study**

The aim of the research targeted to establish the impact of interest rates adjustment announcements on stock returns of firms registered at the NSE. The research adopted a descriptive plan using the event study methodology. The populace in this research is a census of all the corporations quoted at the NSE. The study made use of secondary data. The study used both descriptive and inferential statistics. To examine the effect of the CBR declaration, event research method is carried out by computing the anomalous returns (AR) of every stock, average anomalous revenues (AAR), and cumulative average anomalous return (CAAR) 30 days before as well as after the merger declaration (occasion gap).

To compute the abnormal yield, souk model is employed by reverting the day to day stock yield with the conforming marketplace yield on the approximation period. The study found that there was a positive abnormal returns , which means that no investor benefitted from above normal returns pointing at market adjusting to the interest rate adjustemnt. This implies that the market do not respond fast to interest rate adjustment which might point to efficacy, but not perfectly efficient. The study revealed that variability in stock market return do increase erratically with time though there is more variability in the days preceding and after interest rtae adjustment.

### **5.3 Conclusions**

From the research findings, it is established that the stock market returns continues to expand with the levels of NSE 20 Share Index increasing over the years under study with minor fluctuations. The rates of market returns do not correspondingly increase as there are instances of increase in market returns and other instances of decline in the market returns. The study established a positive relationship between stock market yield as well as interest rate. This leads to the conclusion that interest rates adjustment announcements significantly affect the stock returns of firms registered at the Nairobi Securities Exchange. This conclusion is in line with study findings by (Eita, 2011; Wang, Meric, Liu & Meric, 2010; Jiranyakul, 2009; Robert, 2008; Coleman and Tettey, 2008 among others).

### **5.4 Policy Recommendations**

The positive connection between interest rate and market returns is not reliable with the literature on finance, development and growth. Government policy makers should develop policies that manage the interest rates at acceptable levels that encourage borrowing for private investments. This should be attained through legislation and availing cheaper sources of deposits for lenders. Market return is synonymous with economic growth.

### **5.5 Limitations of Study**

The study uses an event study model to interest rates adjustment announcements on stock returns of companies registered at the NSE. The research does not address the issue of dual connection among the interest rate adjustment and stock market returns. The study results are as correct as the data used and the event study methodology. This research has not established the accurateness of the data used outside the validity of the basis. This means it is impossible to be presumed if the records are correct and if so, to what degree. The research findings are applicable to Kenya and within the period of study. The study has not established whether the results are same outside Kenya or not. Further, since finance is in part a behavioral issue, the study has only given findings applicable within

the context of the historical data. As to whether the findings are applicable after 2015 or before 2010, the study has not expressly investigated that.

### **5.6 Suggestion for Further Research**

Further surveys could be carried out on this topic in a country specific case but possibly using a diverse approach. VAR and GARCH method could be functional to this topic to institute how the lagged variables affect market revenues. Additionally, mixed methods could be used comprising use of key data. Furthermore, further researches in this area must examine other aspects that affect the market revenues in Kenya other than interest rates.



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## **APPENDICES**

### **Appendix I: Listed Companies at the Nairobi Security Exchange**

#### **AGRICULTURAL**

- 1 Eaagads Ltd
- 2 Kapchorua Tea Co. Ltd
- 3 Kakuzi
- 4 Limuru Tea Co. Ltd
- 5 Rea Vipingo Plantations Ltd
- 6 Sasini Ltd
- 7 Williamson Tea Kenya Ltd

#### **COMMERCIAL AND SERVICES**

- 8 Express Ltd
- 9 Kenya Airways Ltd
- 10 Nation Media Group
- 11 Standard Group Ltd
- 12 TPS Eastern Africa (Serena) Ltd
- 13 Scangroup Ltd
- 14 Uchumi Supermarket Ltd
- 15 Hutchings Biemer Ltd
- 16 Longhorn Kenya Ltd
- 17 Atlas Development and Support Services

#### **TELECOMMUNICATION AND TECHNOLOGY**

- 18 Safaricom Ltd

#### **AUTOMOBILES AND ACCESSORIES**

- 19 Car and General (K) Ltd
- 20 Sameer Africa Ltd
- 21 Marshalls (E.A.) Ltd

#### **INVESTMENT**

- 22 City Trust Ltd
- 23 Olympia Capital Holdings ltd

- 24 Centum Investment Co Ltd
- 25 Trans-Century Ltd
- 26 Home Afrika Ltd
- 27 Kurwitu Ventures

**CONSTRUCTION AND ALLIED**

- 28 Athi River Mining
- 29 Bamburi Cement Ltd
- 30 Crown Berger Ltd
- 31 E.A.Cables Ltd
- 32 E.A.Portland Cement Ltd

**ENERGY AND PETROLEUM**

- 33 KenolKobil Ltd
- 34 Total Kenya Ltd
- 35 KenGen Ltd
- 36 Kenya Power & Lighting Co Ltd
- 37 Umeme Ltd Ord

**REAL ESTATE INVESTMENT TRUST**

- 38 Stanlib Fahari I-REIT

**MANUFACTURING AND ALLIED**

- 39 B.O.C Kenya Ltd
- 40 British American Tobacco Kenya Ltd
- 41 Carbacid Investments Ltd
- 42 East African Breweries Ltd
- 43 Mumias Sugar Co. Ltd
- 44 Unga Group Ltd
- 45 Eveready East Africa Ltd
- 46 Kenya Orchards Ltd
- 47 A.Baumann Co. Ltd
- 48 Flame Tree Group Holdings Ltd



## Appendix II: Summary of Data

Year	Months	Interest rate	Stock Market Return
2010	JAN	8.46	3198.9
	FEB	7.55	2474.75
	MAR	7.31	2805.03
	APR	7.34	2800.1
	MAY	7.45	2852.57
	JUN	7.33	3294.56
	JUL	7.24	3273.1
	AUG	7.25	3102.68
	SEP	7.29	3005.41
	OCT	7.26	3083.63
	NOV	7.22	3189.55
	DEC	6.82	3247.44
2011	JAN	2.46	3565.28
	FEB	6.21	3629.41
	MAR	5.98	4072.93
	APR	5.17	4233.24
	MAY	4.21	4241.81
	JUN	2.98	4339.28
	JUL	1.6	4438.58
	AUG	1.83	4454.59
	SEP	2.04	4629.8
	OCT	2.12	4659.56
	NOV	2.21	4395.17
	DEC	2.28	4432.6
2012	JAN	2.46	4464.92
	FEB	2.59	4240.18
	MAR	2.77	3887.07
	APR	3.26	4029.23
	MAY	5.35	4078.1
	JUN	8.95	3968.12
	JULY	8.99	3738.46
	AUG	9.23	3465.02
	SEP	11.93	3284.06
	OCT	14.8	3507.34
	NOV	16.14	3155.46
	DEC	18.3	3205.02

2013	JAN	20.56	3224.18
	FEB	19.7	3303.75
	MAR	17.8	3366.89
	APR	16.01	3546.66
	MAY	11.18	3650.85
	JUN	10.09	3703.94
	JULY	11.95	3832.42
	AUG	10.93	3865.76
	SEP	7.77	3972.03
	OCT	8.98	4147.28
	NOV	9.8	4083.52
	DEC	8.3	4133.02
2014	JAN	8.08	4416.6
	FEB	8.38	4518.59
	MAR	9.88	4860.83
	APR	10.38	4765.23
	MAY	9.46	5006.96
	JUN	6.21	4598.16
	JULY	5.92	4787.56
	AUG	10.03	4697.75
	SEP	9.58	4793.2
	OCT	9.72	4992.88
	NOV	9.94	5100.88
	DEC	9.52	4926.97
2015	JAN	9.64	4991.02
	FEB	9.77	5055.90
	MAR	9.90	5121.63
	APR	10.02	5188.21
	MAY	9.90	5074.07
	JUN	9.79	4962.44
	JULY	9.67	4853.27
	AUG	9.55	4916.36
	SEP	9.68	4980.27
	OCT	9.80	5045.02
	NOV	9.93	5110.60
	DEC	10.06	5177.04