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TURN OF THE CALENDAR EFFECT ON STOCK RETURNS OF FIRMS LISTED AT NAIROBI SECURITIES EXCHANGE

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ABSTRACT

In today's economy, studying and analysis the market is one of the most important resources in management of the organization. In the efficient market hypothesis, stock prices show all the market information in the form of past, publicly held or private information. Normal profits are usually expected to be made only when earning a normal return on your investments. The occurrence of fluctuations of stock returns affects the efficient market. These differences are referred to as anomalies. These anomalies could be a one off occurrence or a repeated. They are three types of anomalies namely fundamental, technical and calendar anomalies.

This paper tests the Kenyan economy on stock returns to determine out the turn of the calendar effects on stock returns. This return help us to calculate regression analysis of stock returns from 2/1/2011 to 31/12/2015 This study was focused on determining out turn of the calendar effect on stock returns for firms listed at the Nairobi Securities exchange. The study focused an events study approach. This study involves a population of all firms listed at the NSE. The researcher used secondary data for obtaining necessary information for the study. Using a data collection sheet, the monthly stock prices, that is opening and closing index values was collected from the monthly price list compiled by the NSE. The study made use of SPSS in analyzing data. The researcher used quantitative method to analyze data. Index returns and the calendar period was tested to test whether there was a significant differences in the mean and abnormal returns using the T test. Findings showed that the existence of the turn-of-the-calendar anomaly varies between periods and study windows with the 5 years turn-of-the-calendar window showing the most significant results. The study recommends that investors study the market to establish the market trends and develop portfolios that will maximize returns considering stock returns are influenced by factors influencing the market like systematic risk factors which may lead to poor performance of some stocks.

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Keywords: Kenyan economy, stock returns, calendar effects, NSE

ABBREVIATIONS AND ACRONYMS

CAPM	-	Capital Assets Pricing Model
DJCBA	-	Dow Jones composite Bond Average
DSE	-	Dhaka Stock Exchange
EMH	-	Efficient Market Hypothesis
KSE	-	Karachi Stock Exchange
KSE	-	Khartoum Securities exchange
MIT	-	Massachusetts Institute of Technology
MS	-	Microsoft Word
NASI	-	National all Share Index
NSE	-	Nairobi Securities Exchange
SEM	-	Stock Exchange of Mauritius
SPSS	-	Statistical Package for the Social Sciences
RWT	-	Random Walk Theory
TSE	-	Tunis securities Exchange

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Turn of the calendar effect is a kind of anomaly that occurs in the market which looks the same as the calendar period. The changes include different behaviours of the stock market affecting times in the month also on days in the week and the year. (Schwert, 2001).Turn of the calendar effect anomaly usually most of the gains originates from the last days of trading of the month and few of the first days of the month that follows. So it cancels out the ups and downs of the rest of the other months. Turn on the calendar effect on stock returns exerts patterns that are systematic at various months, years, week or day (Aly & Perry, 2004).

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Markets anomalies can be common on monthly patterns whereby returns of some months can give good returns compared to other months like the changes that can come about when prices fluctuate on different months of the year effect. Consequently certain days that occurs in the week gives lower returns as compared to other trading days this can be has a result of the week effect (Hossain, 2004).

According to Pandey (2002), they exists new data that market gets through company announcements, reports for the economy or, statements from political fields. For instant when the market has all the information then the security prices adjust accurately and rapidly towards the changing information and thus since the prices are a reflection of the information and then a trader will not make excess returns.

The efficient market hypothesis in finance is necessary and a central pillar that is needed to make informed decisions.EMH shows the investors on how fast, accurate and efficient the market responds to the information that is new to the field of the economy (William, 2002). Information that is fully available in the market that the securities prices fully indicate to the market then the market is an efficient market. This suggests that the prices adjust rapidly and responds to the information that is new as it enters into the market whereby no investors can make an abnormal gain. However this is not always the case. Some stock markets do not follow the EMH sequence and regulations. The involvement of fluctuations in stock returns affects the efficient market hypothesis. These differences are referred to as anomalies. These anomalies could occur in different ways or a repeated. They are three types of EMH anomalies namely fundamental, technical and calendar anomalies.

When publicly owned firms shares are traded over the counter markets or through market exchange rates then the market is often called a stock market it a can also be called equity market. The most important components in a market that is a free economy are stock market because it offers firms with necessary resources in exchange for ownership of the company by investors (Mears, 2001).

The capital markets require resources injected into a stock market so as in this market people required are those who can deal with securities of finance that is traded by institutions. An organization requires the trading of shares to raise funds in the capital market. The market that is used in trading of these shares will be both secondary and primary market. Funds can be raised through the sale of securities by incorporating the needs of the firm's resources in order to use in its operations and also can engage in its own long term plans of investment. These securities can be in the form of bonds and stocks in the institutions ownership and all this occur in the capital markets in the case of what is being sold and bought. (Mears, 2001).

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1.1.1 Turn of the Calendar Effect

The similarity of the calendar towards the effects in the economy and the fluctuation of prices in a market create an inefficiency or anomaly is what is called turn of the calendar effect. These indications can be in the form of days, months or year (Schwert, 2001).The commonly known calendar effect can be day of the week effect, monthly , January effect , neglect firm effect and small firm effect (Pandey, 2002). Turn of the calendar effect is a seasonal anomaly in which prices of stock increases on most of ending trading day of the month and some of the starting three days of the months. These seasonal effects are essential to be studied over and over again because of the changes of social economic and the dynamics of the world at large. As a result of the stock anomaly, the information filtering into the stock market will influence the capital gains of a stock by influencing stock prices.

Georgantopoulos, Kenourgios and Tsamis (2011) documented the occurrence of, non-existence of turn of the calendar effect ,the day of the week effect, the monthly effect, and the end of the year effect using the analysis equations such as volatility equations (Strong, 1992).

1.1.2 Stock Returns

Investors usually have the opportunity to get stock markets returns which are generated by the stock market. Depending on the time period returns can take the form of profits when trading or dividends when issued by the business to its share holders. The most frequently used market in generating returns is the secondary market when selling at higher and buying stock at lower price (Marret, 2011).

This return that takes the form of dividends then this is issued to the share holders by the company while returns that take the form of profits through trading by the company for a given period (Strong, 1992). Subsequently at given period of the year but part of the earnings can be surrendered to the investors.

1.1.3. Relationship between Turn of the Calendar Effect and Stock Returns

Relationships of stock returns and calendar effect is actually focused mostly on equity returns on a number of periodic issues that can create lower or higher gains looking at the time noticed. They can be market inefficiency because cannot be properly explained by models that we have (Wong, Ho, & Dollery 2007).such seasonal effects may be effects of the month, January day weekly or year effect.

Quite a number of stocks are traded mostly from the working days of the week starting from Monday through Friday, if the information in the market is perfect then stock returns are

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generated in trading time and then distribution of returns is expected to be the same for all five days of the week. However, studies have shown that this is not the empirical situation; Berument and Kiymaz (2003) argued that there is a significant relationship between months of the year and stock market return. They noted that the highest stock return volatility occurs on Friday for Canada and USA, Monday for German and Japan, and Thursdays for the United Kingdom. For most of the markets, the days with the highest stock return volatility also appears to be the same with the markets lowest trading volume.

1.1.4. The Nairobi Securities Exchange

The NSE supports exchange of other necessary associated instruments, trading, clearing and settlement of equities, derivatives and debt in the market of securities. Previous studies at the NSE have shown mixed results. Mulumbi (2010) found that there exist turn of the calendar effect at the Nairobi Stock, that is the coefficient of determinations for all the companies listed at NSE was greater than 90%.

Migiro (2010) conducted a research which showed that there is no change in the means of the research that he did for four years which affected the average returns which showed that for the rest of the month was always higher than the returns for the month compared with the arithmetic means across the years.

Various companies listed in the Nairobi Securities Exchange have undertaken merger activity. It is a requirement that any company undertaking any activity or events that have or are likely to have a material effect on the financial results must disclose it to the public within twenty for hours after the board resolution (NSE, 2015).Stocks, bonds and other forms of equity have become common commodities for the typical private investor. Most markets were previously reserved for the rich and affluent have become the interest of the masses (Ajayi et al., 2004).

1.2 Research Problem

Turn for the calendar effect occurs when there is economic inefficiency in the market due to the daily changes of prices in the market which is the same as the calendar. This reflects subsequently different times of the month, days of the week and in various occasions in a year focusing on the behavior of the stock market (Schwert, 2001). This was later improved by Kolahi (2006) to mean the stock market anomaly in which returns of the starting days of the next period month were higher than for the other days in a month and the following ending days of the month. The turn of the month effect is departure from the Efficient Market Hypothesis by Fama (1970) which posts during any particular period, stock returns are at simple random variations. It

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is recognized that turn of the calendar effect influences on a big margin stock gains of firms listed in Nairobi securities exchange over the years (Paul, 2004). The theory of EMH has been studied over and over to allow the investors to predict the stock prices more efficiently and accurately.

The existence of calendar effects disowns the efficiency of efficient market hypothesis, which talks about the market that is informational efficient and thus abnormal gains would not be achievable (Plimsoll, Saban, Spheris, & Rajaratnam, 2013). The existence of calendar effects has taken front stage due to investors seeking profitable trading strategies in an in order to exploit any visible seasonality. Many studies have been done on the calender effect and has received recognition in many countries like in the US and UK studies (Doyle & Chen, 2009; Steeley, 2001), as well as other developed, developing and emerging markets (Basher & Sardorsky, 2006; Plimsoll *et al.,* 2013; Sutheebanjard & Premchaiswadi, 2010). Ahsan and Sarkar (2013) conducted a research emphasizing on the stock market inefficiency Dhaka Stock Exchange (DSE) Nyamosi (2011) did a research from a period of 2001-2010, Kuria (2013) did for a period of 12 years.

From the review of the studies above there is still no agreement to whether turn of the calendar effect exists at the NSE. Moreover, the studies done have used regression model in determining the existence of calendar effect at the NSE and most studies did not take into account recent changes in technology, CMA rules and regulations as well as economic changes. Thus, there is a need to re-analyze these calendar effects using a more recent time period. Therefore, this study aimed at filling this gap by adopting a different methodology, event study methodology was adopted and a market model was used in determining the expected returns and finally abnormal returns were computed to determine out turn of the calendar effect at the NSE. The study seeks to get a solution on the following question: Do stock returns on the common market reflect turn on the calendar effect on listed firms of NSE?

1.3 Research Objectives

The purpose of the study was to determine out the turn of the calendar effect on stock returns of firms listed at Nairobi securities Exchange

1.4 Value of the Study

The findings would be of significance to academicians and scholars since they would use the study as a reference. This study also adds knowledge in the finance field as well as highlights the areas that the researchers need to research more on. The study would also be of

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value on potential investors. A rational investor takes into account several parameters when making investment decisions.

The Management of listed firms is charged with the responsibility of day to day running of firms. Their decisions and policies may be affected positively or negatively by seasonality on the company stocks. They would also be used to make informed choices based on the findings of the anomalies in the market. The NSE would also benefit from the study as it would also help the NSE to come up with policies and procedures to improve efficiency involving the market.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This area sought to discuss the literature review and the summary. Under theoretical review it would focus on three theories that is theory of EMH, random walk theory and CAPM, also it will look into an analysis of conceptual framework. While in the empirical literature review will focus on both international and local evidence.

2.2 Theoretical Review

This area of study starts by reviewing the models which have been developed by researchers to determine the stock returns and its efficiency in the market.

2.2.1 Efficient M arket Hypothesis

This theory was discovered 1970 and it suggests that the market is always efficient neither technical analysis nor fundamental analysis is worthwhile. Malkiel (2003), supported contributions and ideas of Fama (1970), which describes an efficient market is a market which fully and correctly reflects all available information whether private or public in the market. This anomaly refutes both the EMH and the RWT by displaying seasonal patterns in a security's price, at a particular time of the calendar year (Coutts *et al.*, 2000). Regular seasonal patterns over time challenges the EMH even further, because in an efficient market any seasonal effects should reflect once brought to light (Doyle & Chen, 2009).

2.2.2 Behavioral Finance Theory

This theory looks into areas in finance that focuses on the behavioral and ethical issues of human beings in relation to stock market inefficiency such as critical falls or rises in stock price. Behavioral models use psychology and neo-classical economic theory in trying to explain

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investment behaviour. The theory argues that systematic mistakes and problems are made by people in the way they are process information (Daniel & Titman, 2000).

The behavioral theory in finance was initialized by Kahneman & Tversky (1979). The model focuses on issues like framing, behavioral biases and heuristics (representativeness, availability, anchoring). This theory notices that the irrationalities that make prices deviate from the expected. This theory is actually relevant to this study since it shows a rival explanation of stock returns behavior. Whereas the EMH shows that stock markets are efficient, behavioural finance explains that stock markets are inefficient (Kahneman & Tversky, 1979).

2.2.3 Random Walk Model

This theory was coined by Kendall (1953) and was later investigated and confirmed by Fama (1965). It's also states that successive returns are independent and also gains are the same over time and that the stock prices follows a random walk (Fama, 1965). This theory was published by Regnault and Bachelier (1963).

2.2.4 Capital Asset Pricing Model

Most commonly used theory in determining stock return is this theory that was coined by Sharpe (1964). Similarly the same research on this theory was also done by (Lintner, 1965) and (Mossin, 1966). According to CAPM, there observes a similar linear relationship between the non-diversifiable risk above the risk free rate and its return on the assets. Further research on CAPM has documented a number of factors which have showed doubt on the practicability and application of the model.

2.3 Determinants of Stock Returns

2.3.1 Market Performance

This is the overall movements which look into the transaction of the day in the market. It indicates movement of the market in a given period. The National All Share Index (NASI) will be used as the market performance indicator for the purposes of this study. It is issued every trading month and for the purposes of this study would be used to compare average monthly returns of the NSE.

2.3.2 Beta

Kalui (2004) explained that the market measures and its sensitivity with the market movement are known as beta. The CAPM provides a benchmark and it is used by most firms to calculate

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the discount rate. He further added that the beta of stock is simply the slope of the regression line, when excess return above the risk free rate is regressed against returns for the market portfolio.

2.3.3 Risk-Free Returns

This determinant focuses on return on investment for risk which has a zero rate. Any shareholder expects minimum gains because these risks free returns will not accept another risk rather than when return is more than the risk-free rate.

2.4 Empirical Literature Review

Various studies have been done on the turn of the calendar anomalies more specifically on calendar effect and their effects on the stock market. This section lists several international and local evidence of empirical literature on the turn of the calendar effect. Bahadur and Joshi (2005) results showed an increasingly Month of the year inefficiency for Nepalese Securities Exchange from 1995-2004. Chia' et al. (2006) investigated Malaysian Securities Exchange and found out that no monthly effect which existed.

Thomas (2002) did a research and discovered significant change in Month of the-year effect which was investigated from in Swedish Securities market for period 1987-1996. Most current study done by Imad .A. Moosa (2007) by the use of monthly average returns of united states securities for period of 1970 to 2005 showed that a sufficient January effect was discovered but not from the period of 1990-2005 that discovered more negative July effect. Mika, Rossi (2007) looked at market inefficiency in South American economies from 1997 - 2006. Whereby he analyzed periods using division, it was discovered that gains for the Month of January are higher in Argentina only.

Al-Rjoub (2004) looked at the worthiness on the results on day of the week inefficiency on stock return data by doing a summary by coming about on the errors by the measurement of sample sizes. Unequal returns were used across the week days to determine the alternative hypothesis. The findings found that there is an insignificantly negative returns mostly at the Start of the week in a consistently way across the board. There was a significant negative return averaging for the working week which appears to be consistent in the beginning of the daily measurement.

Gao and Kling (2005) examined stock market of china he looked into monthly and daily effects. The results showed that when using people's stock returns there is a difference in the calendar effect. The study of Shanghai and Shenzhen, showed that in 1991 towards the year it was strong, however there was a reduction later. And also since the china year ends in February there are

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high returns in March and April. The results showed that Fridays are profitable looking at the daily effect. Furthermore the results show those firms funds are paid at the weekend after a minimal anticipation because Chinese shareholders misappropriate company funds for private functions.

Agathee (2008) investigated stock exchange of Mauritius (SEM) looking at the day of the week effects he used regression analysis. The results showed from 1998-2006 that there is insufficient presence day of the week effect across the board. It also indicated that returns were high on Fridays than any other day of the period. It was noticed that the mean gains analyzed by the use of descriptive analysis indicated that there were lower returns on Tuesdays. His finding shows that, gains are not dependent on the month of the period rather than the month of January.

Wyeme and Olfa (2011) examined Tunis stock exchange (TSE) looking at the month of the year effect for the period of five years. They discovered the month of April had an effect in which they documented mean daily market returns which were largely higher in April than the rest of the year.

Abdalla (2012) investigated Sudanese stock market the availability looking at day of the week effect on variance conditions and returns by the use of daily observations of the price index series from Khartoum Stock Exchange (KSE), from 2006 to 2011. Findings found insignificant in statistics and negative gains for all days of the week which indicated KSE do not have day of the week effect in both return and volatility equations.

Migiro (2010) did an investigation of the month effects for companies quoted at Nairobi Stock Exchange. Kalui (2004) on his study on the determinants of stock price volatility, an empirical investigation of Nairobi Stock Exchange featuring the period between 1998 and 2002 showed that companies quoted at NSE experience stock price volatility. Onyuma (2009) analyzed data obtained using NSE 20 share index he used regression techniques to look at the movement and behavior of stock returns from 1980-2006. The findings showed largest positive returns came from January and Friday while lowest negative returns were on Mondays.

Wachira (2013) studied on some of the market inefficiency and market returns focusing on the Nairobi Securities Exchange. The objective of his study was to find out whether there exists a January effect looking at the NSE. The population of interest used listed businesses for equity stocks at the NSE as at December 2012. The data used comprised of daily values of the two major indices of Nairobi Securities Exchange 20-share index and Nairobi Securities Exchange All share index. Regression analysis technique was used for the analyzing data collected. The results show negative coefficients in the model used.

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2.5 Conceptual Framework

Having different numbers of prices for certain months from year to year will affect the efficiency of the market. Calendar effect occurs when a series is affected with differing seasons comprising of the same calendar in different years. The calendar effect can be modeled with variables that represent months of the year. Turn of the calendar effect was also related to market performance where this research can focus on stock returns

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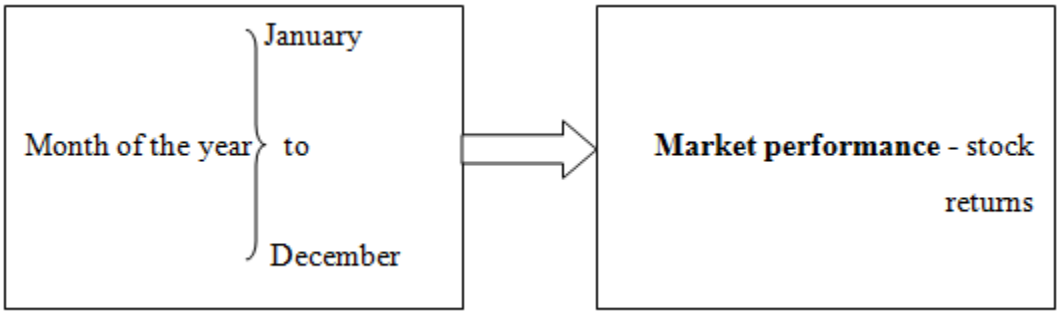
Table 2.5 Conceptual framework



2.6 Summary

This current study sought to conduct an analysis on stock return and prices in order to establish whether they exists calendar effect at all listed firms at the NSE. Various studies have been done and continue to be conducted on these market anomalies. This chapter has reviewed the past studies on calendar effect in different markets in the world. The findings have been inconsistent based on the location of the market, time period of the study and change of rules and regulations of security markets.

There have been explanations for this turn of the calendar effect anomaly. Some researchers have attributed the anomaly to current and new negative information coming from the long month. Other researchers have not been able to provide any information. The findings of this research sought to add to the available literature on turn on the calendar effect. Therefore this study is expected to fill the necessary research gap.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

These areas sought to provide a description of the research design, the population, data collection and finally data analysis in conducting the study.

3.2 Research Design

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The study focused on adoption of research design which is descriptive. The research design was ideal for this study as it was carried out on firms listed at the NSE and data was readily available for comparison and there was no manipulation of the data. The study establishes the correlation of variables. The research design is suitable for the study as it enables the researcher to come up with the necessary information more easily.

3.3 Population

The population of this study was all 64 firms (See appendix 1); these firms are in the Nairobi Securities Exchange. It was conducted on duration of five years up to from 2011 to 2015 for twelve months each year. The study was a census study but only those companies that were continuously listed and were actively participating in the market within the period were considered.

3.4 Data Collection Methods

The data contained a series of daily stock prices for companies that constitute the NASI Index over the period of five years. The methods of collecting data would be secondary data obtained daily for the five years from 2011 to 2015. The comparison would establish if they follow a particular trend.

3.5 Data Analysis and Presentation.

The analysis of this data was to determine out turn of the calendar effect on stock returns. The methodology that was used was an event study. It examines effects of some event or set of events on the returns of the investments. Event study is widely used in testing the efficiency of the market. Data to be was collected and analyzed using MS EXCEL 07 and SPSS software. The monthly stock prices for twelve months in five years and it was collected for the companies listed at the NSE as at January 2011 to 31st December 2015. The actual returns on stocks for each day within the defined window period were computed as follows:

$$Rt = \frac{(P1-PO) + D}{PO}$$

Where: Rt is total returns, P1 is closing price for each event day, PO is opening price for each event month and D is dividends.

Abnormal returns on stocks for each month within the defined period were computed as follows:

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ARkt = Rkt - E (Rkt)

Where: ARkt is abnormal returns of stock k at time t, Rkt is actual returns of stock k , E (Rkt) is the expected returns of stock k at time t.

Finally expected returns were computed using market model for each month of the event months as follows:

E (Rkt) = ak+ βkRMt +e

Where E (Rkt) is expected returns of stocks k at event period t, ak βk is securities specific intercept and slope coefficient, RMt market returns measured by NASI share index .Wooldridge (2003) shows that multiple linear regression assumes that the parameters are the sample in random, the error term are mean zero, linear, none of the variables are perfectly collinear and the regression coefficients are unbiased. The t-test was to determine significant relationship in stock returns across twelve months of the year. The research used the F-test to test the extent to which the deviations of these daily stock returns are not the same. A number past research works on daily market anomalies have used the method of regression using dummy variables. This is why this research adopted the same methodology. This meant it easier to compare the results with the earlier findings.

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents analysis, results and discussion of the study the turn of the calendar effect at the Nairobi Securities Exchange. The study used secondary data obtained daily for the 5 years from 2011 to 2015. In this study the researcher collected market share prices per month and then performed the analysis using stock prices and stock returns that occurred due to change in stock prices. For data analysis I used Statistical Package for Social Sciences Version and Ms excel to aid in analyzing data. The t-test was done so us to determine out and describe the main findings of the study.

4.2 Response Rate

Data that was used for the study was harmonized and summarized from 64 firms of NSE for a period of five years. In order to ensure effectiveness, efficiency and accuracy of the collected data and a number of filters were applied including other years that were already studied by other researchers.

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4.3 Descriptive Statistics

This area focuses on the descriptive statistics for the population studied. These statistics summarize the abnormal returns for the 64 listed companies at the Nairobi securities. This section presents the descriptive statistics of the population studied. This was used so us to analyze data following a particular systematic way and sequence so that it can help to and show how to summarize in a more beneficial way in a particular pattern and also trying to describe data.

Expected gains or returns is when the values are random variables which are expected if the random variables are repeated in infinite number of times thus giving a measure of the distribution of the variables. While actual gain or return is an investment by investors or share holders. The differences that are encountered between securities actual gains and expected returns are called abnormal gains or returns. This abnormal gains is caused by the occurrence of events such as; announcement of dividends, acquisitions and mergers, announcements of earnings by the firm, emergence of lawsuits and increase in interest rates.

Normal distribution can be calculated and measured when focusing whether the kurtosis is highly tailed or lightly tailed and also when looking at symmetry then you focus on skeweness either left, right or center when measuring data. Beta coefficients are also called standardized coefficients these coefficients emerge from regression analysis where we find independent and dependent variables that are standardized. When using different unit measurement to measure variables to answer a problem of which of the independent variables that have a big impact on the dependent variable in multiple regression analysis then we are dealing with standardized coefficients. Production of unstandardized coefficients is done by the use of original variables. Beta in this study focuses on how the stock of a given portfolio is strong and on how it responds to the entire market systematic volatility. When looking at the relationship in multiple regressions when B coefficient is negative then this relation is negative and vice versa and when its zero there is no relationship.

In statistics when we talk about constant then this means none varying that is fixed and well defined number. The square root of variance is what we call us standard deviation and it is a measures that focuses on how numbers are spread. Central value which is a set of numbers which is also an average of numbers is called a mean. Variance measures how far numbers which are a set of numbers are spread from its mean. Variance plays a critical role in statistics it is used in testing of hypothesis, goodness of fit and statistical description. It is used in many field of study like accounting, economics and finance.

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Table 4.1: Analysis of Actual, Expected, Abnormal and Cumulative Abnormal Returns for Twelve Months for period 2011

Months	Expected Returns	Actual Returns	Abnormal Returns	Cumulative Abnormal Returns
1	0.02086609	0.04151717	0.02065108	0.02065108
2	0.00004053	0.00006734	0.00002681	0.02091918
3	0.00062410	0.00073851	0.00011441	0.02103359
4	-0.00027300	-0.00054451	-0.00027151	0.02076208
5	-0.00071630	-0.00083275	-0.00011645	0.02064563
6	0	-0.0000037	-0.00000370	0.02064193
7	-0.00003705	-0.0004542	-0.00041715	0.02022478
8	-0.00036210	-0.0007286	-0.00036650	0.01985828
9	0.00003620	0.0001508	0.00011460	0.01997288
10	-0.00031010	-0.0006418	-0.00033170	0.01964118
11	0.00042012	0.00063014	0.00021002	0.0198512
12	0.00005211	0.00007321	0.00002110	0.0198723

Source: Research data

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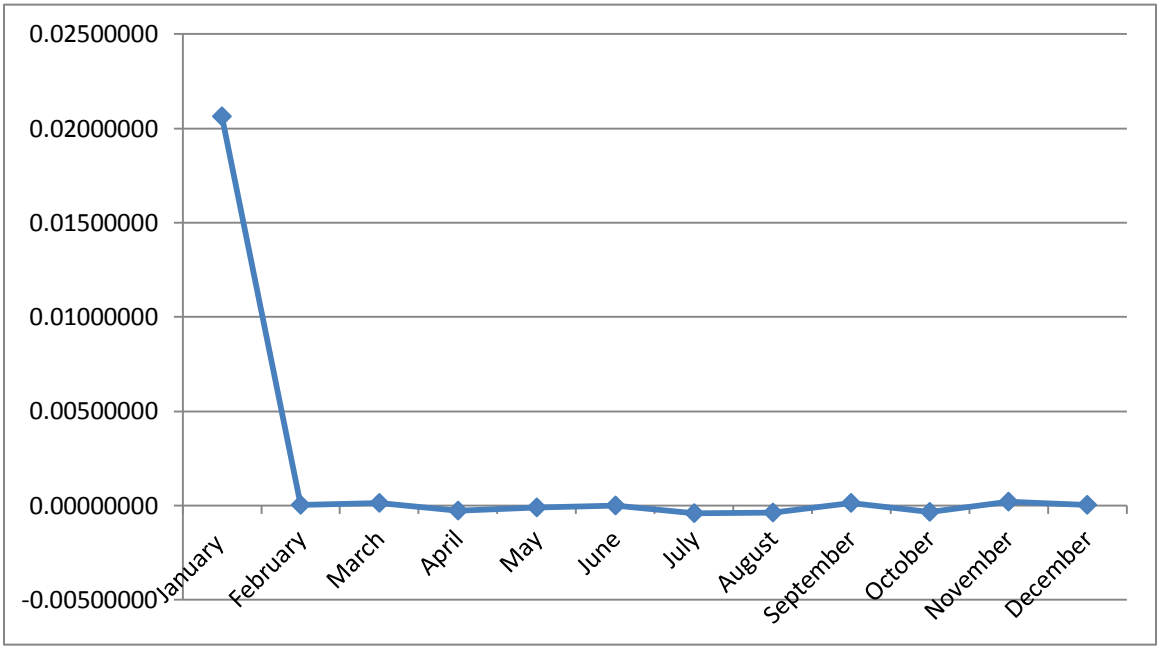
Figure 1: Abnormal Returns for period 2011



Source: Research Data

From table 4.1 and Figure 1 above, shows abnormal returns were positive during the first three months throughout the year and negative the following five months and positive in the month of September, negative again in the month of October and positive in the month of November and December this indicates that there was market inefficiency in the stock market which is both positive and negative depending on the analysis. This shows existence of market inefficiency.

Table 4.2: Coefficients of Regression Model for Twelve Months for the period 2011

Model	Unstandardized coefficients		Standardized coefficients	T	Sig.
	B	Std Error	Beta		
(Constant)	0.000	0.000		0.80	0.48
1					
RM	-0.0039	0.009	-0.24	-0.43	0.69

a. Dependent variable: AR

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The expected returns for the year 2011 were calculated using the following model for each month in the event window: R = -0.24 Rm. This indicates that expected return for the year 2011 was negatively related in the market. These also indicate that constant B is zero.

Table 4.3: Analysis of Actual, Expected, Abnormal and Cumulative Abnormal Returns for period 2012.

Months	Expected Returns	Actual Returns	Abnormal Returns	Cumulative Abnormal Returns
1	0.001781	-0.006219	-0.008000	0.008000
2	-0.003581	-0.005838	-0.002257	-0.010257
3	-0.004910	-0.00874	-0.003830	-0.014087
4	0.000719	0.005564	0.004845	-0.009242
5	0.002902	0.005435	0.002533	-0.006709
6	0.003161	0.00066	-0.002501	-0.00921
7	0.001828	0.004849	0.003021	-0.006189
8	0.000224	-0.006962	-0.007186	-0.013375
9	-0.061050	-0.114201	-0.053151	-0.066526
10	-0.002311	-0.009523	-0.007212	-0.073738
11	-0.071618	-0.078341	-0.006723	-0.080461
12	-0.002346	0.00111	0.003456	-0.0077005

Source: Research data

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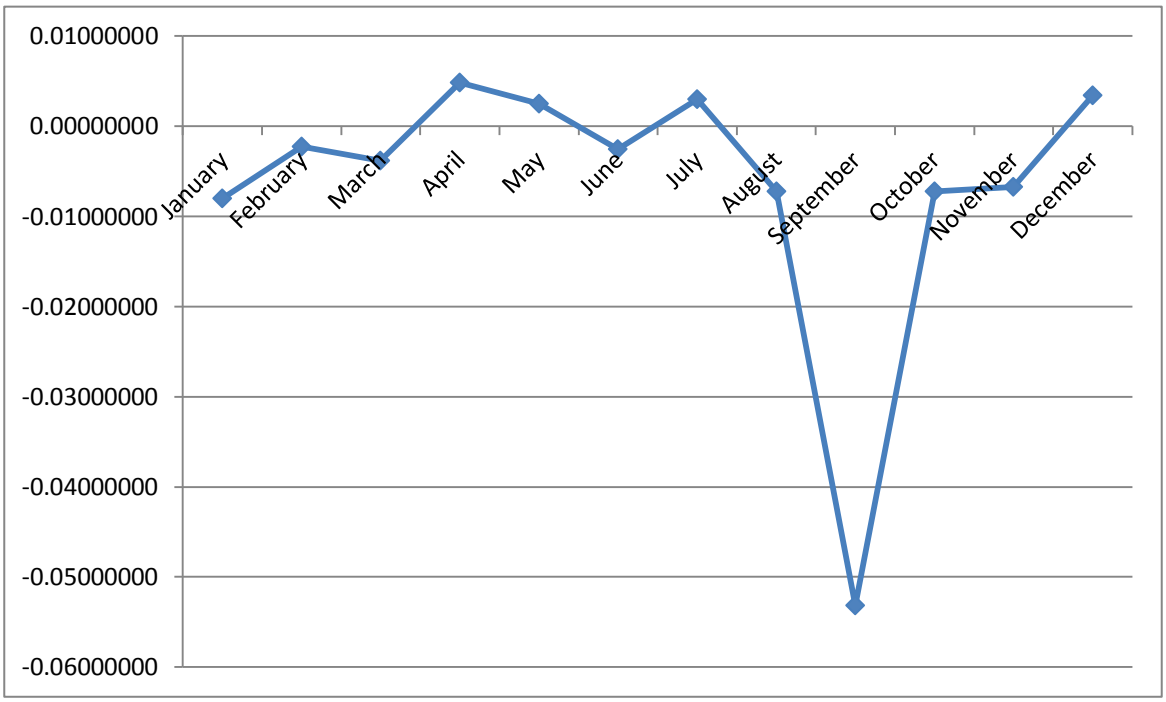
Figure 2: Abnormal Returns for period 2012



Source: Research Data

From table 4.3 and Figure 2 above, the abnormal returns were negative for the first three months and positive for the following two months then negative and positive for the month of June and July and then negative in the next four months and positive in the month of December in the event months for the whole year this indicates the existence of market anomaly.

Table 4.4 Coefficients for Regression Model for Twelve Months for period 2012.

Model	Unstandardized coefficients		Standardized coefficients	T	Sig.
	B	Std error	Beta		
(Constant)	0.000	0.000		0.71	0.53
1					
RM	0.002	0.003	0.13	0.23	0.84

a. Dependent Variable: AR

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The expected returns for twelve months were calculated using the following model for each month in the event window: R = 0.13Rm, these also indicate that B is zero.

Table 4.5 Analysis of Actual, Expected, Abnormal and Cumulative Abnormal Returns for Twelve Months for period 2013

Months	Expected Returns	Actual Returns	Abnormal Returns	Cumulative Abnormal Returns
1	-0.052302	-0.082713	-0.030411	-0.030411
2	-0.040774	-0.058196	-0.017422	-0.047833
3	-0.010718	0.000867	0.011585	-0.036248
4	0.002284	0.026566	0.024282	-0.011966
5	-0.002431	0.02068	0.023111	0.011145
6	-0.018823	-0.013809	0.005014	0.016159
7	-0.014480	-0.007407	0.007073	0.023232
8	-0.006668	0.008803	0.015471	0.038703
9	-0.016478	-0.013142	0.003336	0.042039
10	-0.028211	-0.031585	-0.003374	0.038665
11	-0.023467	-0.021103	0.002364	0.041029
12	-0.034621	-0.033476	0.001145	0.042174

Source: research data

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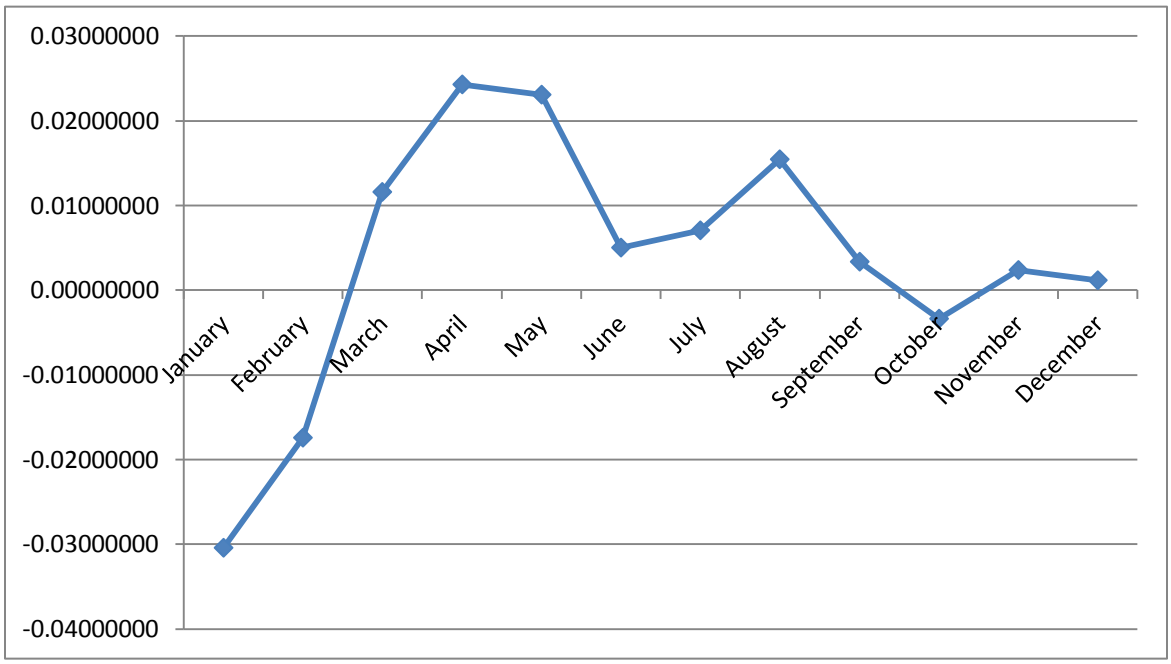
Figure 3: Abnormal Returns Period 2013



Source: Research Data

From table 4.5 and Figure 3 above, the abnormal returns were negative for two months of event months. And positive abnormal returns were witnessed for seven months of the event months then in the month of October was negative and positive in the next two months this indicate that there is both negative and positive abnormal returns in the year 2013 thus indicating market anomaly.

Table 4.6: Coefficients for Regression Model for Months for period 2013

Model	Unstandardized coefficients		Standardized coefficients	T	Sig
	B	Std error	Beta		
(Constant)	-0.02	0.012		-1.62	0.18
1					
RM	-4.48	21.0	- 0.11	-0.21	0.75

a. Dependent variable: AR

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The expected returns for months for the year 2013 were calculated using the following model for each month in the event window: R= -0.02 – 0.12Rm these also indicate that B is not absolutely zero in this year of study.

Table 4.7: Analysis of Actual, Expected, Abnormal and cumulative Abnormal Returns for Twelve Months for period 2014.

Months	Expected Returns	Actual Returns	Abnormal Returns	Cumulative Abnormal Returns
1	-0.007737	-0.512519	-0.504782	-0.504782
2	-0.000442	-0.500912	-0.500470	-1.005252
3	0.0007872	-0.4881658	-0.488953	-1.494205
4	-0.035397	-0.669749	-0.634352	-2.128557
5	-0.000581	-0.589165	-0.588584	-2.717141
6	0.516261	0.443203	-0.073058	-2.790199
7	-0.005915	-0.607322	-0.601407	-3.391606
8	-0.008634	-0.614046	-0.605412	-3.997018
9	0.077441	-0.445974	-0.523415	-4.520433
10	-0.006549	-0.613216	-0.606667	-5.1271
11	0.014658	0.791367	0.776709	-4.350391
12	0.067892	0.256604	0.188712	-4.231679

Source: Research Data

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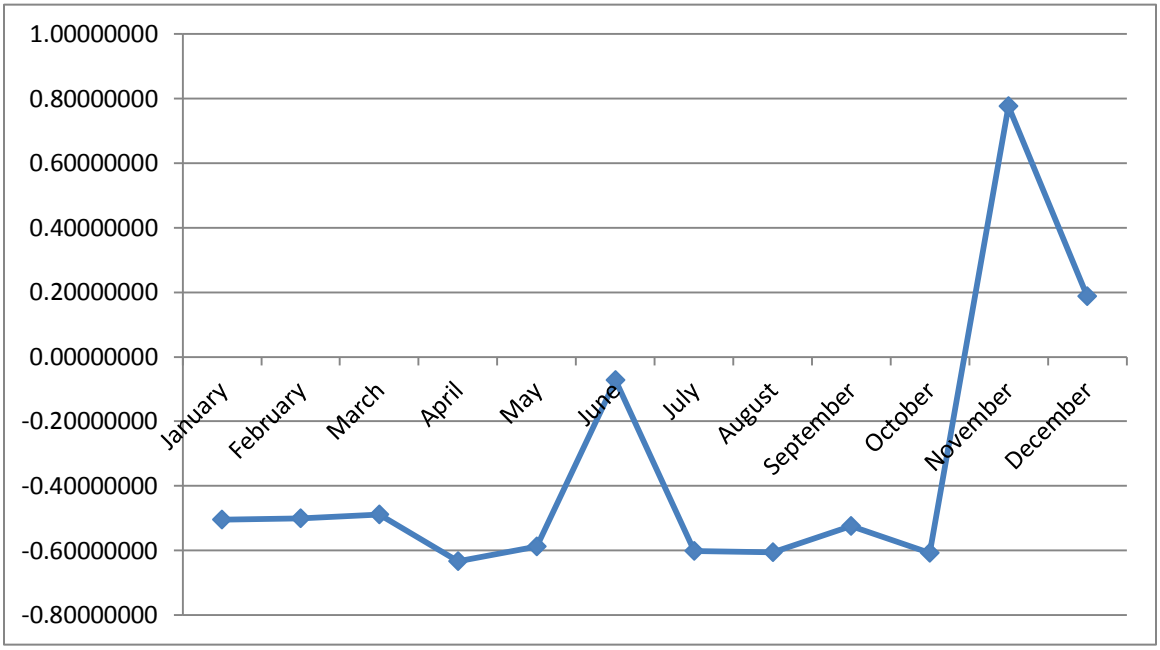
Figure 4. Abnormal Returns for Period 2014



Source: Research Data

From table 4.7 and Figure 4 above, the abnormal returns were negative for the first ten months and positive for the last two months for the event months. This also shows that there are both negative and positive abnormal returns thus indicating the existence of market anomaly.

Table 4.8: Coefficients of Regression Model for Twelve Months for the Year 2014.

Model	Unstandardized coefficients		Standardized coefficients	T	Sig.
	B	Std error	Beta		
(Constant)	0.56	0.58		0.98	0.41
1					
RM	-4.9	12.9	-0.21	0.35	0.73

a. Dependent Variable: AR

The expected returns for twelve months for the year 2014 were calculated using the following model for each Month in the event window: R = 0.56- 0.21Rm.Unstandardized coefficients had a B value which is 0.56.

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Table 4.9: Analysis of Actual, Expected, Abnormal and cumulative Abnormal Returns for Twelve Months for period 2015

Months	Expected Returns	Actual Returns	Abnormal Returns	Cumulative Abnormal Returns
1	-0.007737	-0.021483	-0.013360	-0.013360
2	-0.000442	0.000171	0.000555	-0.012805
3	0.0007872	0.007294	0.003721	-0.009084
4	-0.035397	-0.003624	-0.002757	-0.011841
5	-0.000581	-0.003024	-0.002058	-0.013899
6	0.516261	-0.005264	-0.002213	-0.016112
7	-0.005915	-0.007071	-0.005843	-0.021955
8	-0.008634	0.000737	-0.001614	-0.023569
9	0.077441	-0.000731	-0.000417	-0.023986
10	-0.006549	-0.00001	0.000059	-0.023927
11	0.007981	0.0157701	0.0077891	-0.0161379
12	0.011895	0.000649	-0.011246	-0.0273839

Source: Research data

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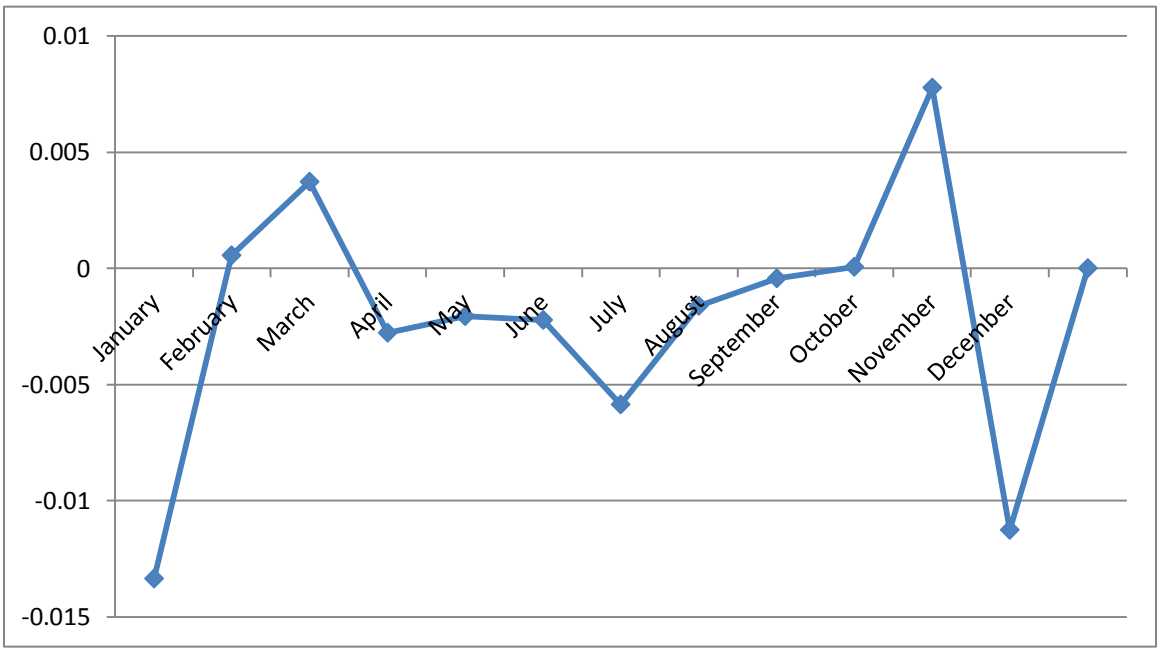
Figure 5: Abnormal Returns for period 2015



Source: Research Data

From table 4.9 and Figure 5, the abnormal returns were negative for the months of January, February and March was positive then for the next six months there was abnormal returns that was negative then for the month of October and November abnormal returns was positive and December was negative in a year for the event period.

Table 4.10: Coefficients of the Regression Model for Twelve Months period 2015

Model	Unstandardized coefficients		Standardized coefficients	T	Sig.
	B	Std error	Beta		
(Constant)	0.001	0.002		0.55	0.61
1					
RM	0.12	0.20	0.33	0.61	0.57

a. Dependent Variable: AR

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The expected returns for the month for the year 2015 were calculated using the following model for each Month in the event window: R = 0.001+ 0.33Rm.

Table 4.11: Analysis of Descriptive Statistics for Cumulative Abnormal Returns

Descriptive statistics											
	N	minimum	maximum	Mean		Std deviation	Variance	Skewness		kurtosis	
	Statistics	Statistics	statistics	Statstics	Std error	Stastics	Statistics	Std error	Statistics	statistics	Std error
Cum ABR	64	-5.45	-0.4	-.52	.17	1.20	1.70	-2.60	0.31	5.82	0.61
VALID N (listwise)	64										

Table 4.11 above shows descriptive statistics of cumulative abnormal returns which had a mean of -0.52; the standard error was 0.17, and a skewness of -2.6. Moreover, the cumulative abnormal returns had a standard deviation of 1.2, variance of 1.7 and a kurtosis of 5.82. the mean cumulative abnormal returns of -0.51 suggests that, on average the turn of the calendar effect will have a negative effect on stock returns over and above the market return.

4.5 Discussion of Research Findings

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Table 4.12: T-test Statistic for the Findings

	Test value = 0					
	T	Df	Sig.(2-tailed)	Mean difference	95% confidence interval of the difference	
					Lower	Upper
ABR	-2.10	59	.040	-.054	-.11	-.002

Source: Research Data

The results showed that the abnormal returns had a negative of T- value of 2.10 and also a significance of 0.040. Also the upper value is less than 0.05, and then the effect is significant. Due to the research findings the null hypothesis was rejected and the study sought to conclude that the abnormal returns during the event window were significant and therefore there exists turn of the calendar effect at the NSE.

The findings seem to agree with those of Mulumbi (2010) who showed that the average return for stocks at the Nairobi Securities Exchange was higher towards the ending calendar month and the few on the second day of the month that follows calendar month. These markets have their stock market traders realizing higher returns at the end of the week days. Basing on the calendar effect on the NSE, the findings of this research seem to point towards ratifying the NSE as an inefficient market in which buyers and sellers simply trade with emotions and that all information on stocks does not equally understood by all and reactions are not similar.

The findings of the study with in line with its objective was to determine out turn of the calendar effect on stock returns of firms listed at NSE for the all months for five years period. It also sought to find and test if there is a relationship and any other difference in stock returns for all the five trading Years. Data was captured from the Nairobi Securities Exchange. It was then analyzed using Microsoft excels sheets and SPSS to compute the monthly stock market returns. The events study approach was adapted to derive the returns on stock versus the returns on the market. These were captured in the market model that derived the abnormal returns. The study used event study methodology to determine calendar effect on stock returns. The cumulative abnormal returns had a mean of negative 0.52 a standard deviation of 1.2 and a variance of 1.7. The negative mean cumulative return implies that turn of the calendar do have negative effect on stock returns. Month's fluctuations in abnormal returns were witnessed with calendar effect reporting both positive and negative abnormal returns. The results also showed that the abnormal

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returns had a t- value of -2.10 and a significance of 0.040. Since the p- value was less than 0.05, the effect was found to be significant hence the study concluded that there exists turn of the calendar effect.

4.6 Conclusion and Recommendations

Conclusion of this study is that there exists calendar effect at the Nairobi Securities Exchange. From the findings as presented, it was found that there is a market anomaly that is it was found that abnormal returns do exist around the periods that the study was conducted and the mean abnormal returns were significant at 5% significance level. The negative mean cumulative abnormal returns also suggests that, on average the Calendar effect had an impact that has negative effect on returns hence returns will decrease over and above the market return.

Findings of the study reflect that that turns of the calendar effect anomaly exists at the Nairobi Securities Exchange. This is why the study recommends the continuous procedures that should increase effectiveness and efficiency of the stock market. The companies should put in place more directives and guidelines that will ensure the stock market have small cases of exploitation.

The turn of the calendar anomaly should accelerate the shareholders to look into opportunities of the continuous changes in the market by arranging bargaining strategies which account for such predictable pattern. The investors can buy securities and wait to sell them around the months when the security prices are high hence making an arbitrage profits. The phenomenon has been known for a long time, and markets should adjust and be efficient in this field. However the growth of the internet should be reinforced since it reduces information and transaction costs, mitigating the turn on the calendar effect on stock returns of firms listed at NSE.

The limitations of this study is that it focused only on the duration of five years due to the cost of data. A longer duration should have been used to increase the number of observations. The quality of the data was a weakness of this study. Some of the calendar months had less than 22 working days as a result of holidays. Moreover, some shares were inactive or not active in some periods. This made the analysis of data to be done for less than intended period.

The data available was subject to various accounting principles which may not allow forward comparisons between the share prices among different companies in the same period. In addition, the prices reflect a lot more information than just turn of the calendar effect. These may range from other key happenings in the economy which may not have been captured by the study. This therefore limits the applicability of research findings to generalization at the NSE.

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The study period also faced many policy and monetary changes which may have influenced the share prices which was used to compute share returns. As such the findings may have been distorted by such economic and monetary policies. The study also had some difficulties of making arrangements with CMA on how to obtain and enquiring for the relevant information from the Nairobi Stock Exchange.

Research should be conducted on market anomalies using different methodologies to determine if results are consistent with other studies. Other necessary statistical tests should be performed to test if the null or alternate hypothesis can still be accepted or not. This study also does not give a difference between institutional traders and individual traders and their effect on the trades. Institutional traders have more market information than individual investors. Research should be carried to obtain more market information to base their investment decisions.

Turn of the calendar effect on stock returns in market anomalies should also be carried out in fixed income instruments to look into turn of the calendar effect anomaly. Trading in fixed income instruments like Treasury bonds and Treasury Bills and the introduction of derivatives are traded differently from the way equity instruments are traded. The study therefore cannot conclude with turn of the calendar effect without carrying out a similar study in fixed income instruments.

REFERENCES

Abdalla S.Day-of-the-Week Effect on Returns and Conditional Volatility: Empirical evidence from Sudanese Stock Market, *Middle Eastern Finance and Economics*-Issue 16 (2012).

Agathee, U. S. (2008). Calendar Effects and the Months of the Year: Evidence from the Mauritian Stock Exchange, *International Research Journal of Finance and Economics, 14*, 254-261.

Agathee, U.S., 2010. Semi-monthly effect: Evidence from the Mauritians official stock market.

Agrawal, A, and Tandon, K. (1994). Anomalies or illusions? Evidence from stock markets in eighteen countries, *Journal of International Money and Finance*, 13, 83-106.

Ahsan, A.F.M.M. and A.H. Sarkar, 2013. Does January effect exist in Bangladesh? Int. J. Bus Manage. 8: 82-89.

ISSN: 2455-8834

Volume:02, Issue:04

Ajayi, R, Mehdian, S., Perry, M. (2004). The day-of-the-week effect in stock returns: further evidence from Eastern European emerging markets, *Emerging Markets Finance and Trade*, 40, 53-62.

Al-Rjoub, S. (2004). The Daily Return Pattern in the Amman Stock Exchange and the Weekend Effect.Journal of economics corporation, 25, 1 (2004): 99 – 114.

Aly, W.and T.Perry, (2004) Capital Asset Prices: A Theory of Market Equilibrium Under Conditions of Risk, *Journal of Finance*, 19, 425-42.

Bahadur, K.C, Fatta, Joshi, Nayan K., (2005). The Nepalese Stock Market: Efficiency and Calendar Anomalies. *Economic Review*, 17 (17).

Ball, R. (1978) Anomalies in Relationships between Securities' Yields and Yield- Surrogates, Journal of Financial Economics, 6, 103-26.

Basher,S. A., & Sardorsky, P. (2006). Day-of-the-week effects in emerging stock markets. *Applied Economics Letters, 13(1)*, 621–628.

Berument, S. and B. Kiymaz, Seasonality in Daily Bond Returns," *Journal of Financial and Quantitative Analysis* (June 2003), pp. 269-285.

Chia, R C, Liew, V K, Wafa, S A, and Wafa, S K, (2006). Calendar Anomalies in the Malaysian Stock Market, MPRA Paper No. 516, posted 07. November 2007. Cooper ,C, and schaindler , R.A., (2001). *Stock Market Strategy*. McGraw Hill Inc.

Coutts, A. J., Kaplanidis, C. & Roberts, J. (2000). Security price anomalies in an emerging market: The case of the Athens Stock Exchange. *Applied Financial Economics, 10(1)*, 561–571.

Cucchiaro, A., (1994). Day of the Week Effect on European Stock Markets. International Journal of Finance and Economics.

Daniel K & Titman S. (2000). Market efficiency in an irrational world, *NBER Working paper No. 7489*

Darrat, A. F., Li, B., Chung, R. (2013). Seasonal Anomalies: A closer look at the Johannesburg Stock Exchange. *Contemporary Management Research, 9(2),* 155.

ISSN: 2455-8834

Volume:02, Issue:04

Doyle, J. R., & Chen, C. H. (2009). The wandering weekday effect in major stock markets. *Journal of Banking and Finance, 33(1)*, 1388–1399.

Fama, E.F. 1970. The behaviour of stock market prices. Journal of Business, 38, No. 1, 34 105.

Fama, E.F. and French, K.R. (1965) Common Risk factors in the Returns on Stocks and Bonds, *Journal of Financial Economics*, 33, 3-56

Gao; Lei, Kling; Gerhard, (2005). Calendar Effects in Chinese Stock Market, *Annals of Economics and Finance*, 6, 75-88.

Geogantopuolos,K.T and Tsamis, M. (2005). Adverse risk incentives and the design of performance-based, contracts, *Management Science*, 35(7), 807–22.

Ho, Y. (1999). Stock Return Seasonalities in Asia Pacific Markets. *Journal International Financial Management and Accounting*, 2, 47-77.

Hossain, F. (2004). Day of the week effect in Dhaka Stock Exchange: Evidence from small portfolios of banking sector.

Imad. A. M, (2007). The Vanishing January Effect, *International Research Journal Finance and Economics*, Issue 7, 92-103.

Kahneman, D. & Tversky A. (1979). Prospect theory: an analysis of decision under risk, *Econometrica, 47(2)*.

Kalui, B. (2004). Stock Market Anomalies: A Study of Seasonal Effects on Average Returns of Nairobi Securities Exchange.

Kendall, M.G. ,.A. Bradford Hill (1953). Journal of the royal statisticalsociety.series A(General), volume 116, issue 1(1953), 11-34.

Kolahi F. (2006), *Turn-Of-The-Month Effect for the European Stock Market*, Simon Fraser University

Kuria, A.M. and G.K. Riro, 2013. Stock market anomalies: A study of seasonal effects on average returns of Nairobi securities exchange. Res. J. Fin. Account., 4: 207-215.

Lintner, J. (1965) The Valuation of Risk Assets and the Selection of Risky Investments in Stock Portfolios and Capital Budgets, *Review of Economics and Statistics*, 47, 13-37.

ISSN: 2455-8834

Volume:02, Issue:04

Mears, R. A. (2001). Investing in Stocks, *Ohio State University Extension*

Malkiel, B.G., 2003. The efficient market hypothesis and its critics. J. Econ. Perspectives, 17: 59-82.

Marrett, G. and A. Worthington, 2011. The month-of-the-year effect in the Australian stock market: A short technical note on the market, industry and firm size impacts. Aust. Account. Bus. Fin. J., 5: 117-123.

Migiro ,A..O. (2010). Day-of-the-Week and Month-of-the-Year Effect on the Kenyan Stock Market Returns, *Eastern Africa Social Science Research Review,* Vol.25No.2, 53-74.

Nairobi Securities Exchange (NSE), 2015. History of Organization. Retrieved from https://www.nse.co.ke/about-nse/history-of-organisation.html.

Nippani & Arize, S. M. (2007). "Calendar anomalies in the Gulf Cooperation Council stock markets". *Emerging Markets Review*, 12, 293-307.

Nosheen F.O., Dufrene U.B., and Chatterjee A. (2007) "Stock return seasonalities in low-income African emerging markets", *Managerial Finance*, 24 (3), pp. 22-32.

Nyamosi, J.N., 2011. Testing the existence of January effect at the Nairobi stock exchange. Ph.D. Thesis, University of Nairobi, Kenya.

Onyuma, S.O. (2009). Day-of-the-Week and Month-of-the-Year Effect on the KenyanStock Market Returns, *Eastern Africa Social Science Research Review,* Vol.25No.2, 53-74.

Pandey, I.M., (2002). Is There Seasonality in the Sensex Monthly Returns? Working Paper, *Indian Institute of Management*, 1-19.

Plimsoll, J., Saban, B., Spheris, A., & Rajaratnam, K. (2013). The day of the week effect: An analysis of the Johannesburg Stock Exchange Top 40 firms. *International Business andEconomics Research Journal, 12(3)*, 319–330.

Polwitoon and Towathuntachai, G.N. (2008). A survey of the Monday effect literature, *Quarterly Journal of Business and Economics.* 42(.3,4), pp.3-27.

Paul, M.T., (2004). The Stock Market: *Theories and Evidence*. Homewood, Irwin.

ISSN: 2455-8834

Volume:02, Issue:04

Reinganum, M R. (1981) A New Empirical Perspective on the CAPM, Journal of Financial and Quantitative Analysis, 16, 439-62.

Reinganum, M.R. (1963). The Anomalous Stock Market Behavior of Small Firms in January Empirical Test for Year-End Tax Effect, *Journal of Financial Economics, 12, 89-104.*

Rossi; Mika, (2007). Calendar anomalies in stock returns: Evidence from South America, Bachelor's Thesis, Lappeenranta University of Technology, Department of Business Administration, Section of Finance.

Sanders, W., & Carpenter, M.(2003). Strategic satisfaction; A behavioral-agency theory perspective on stock repurchase program announcements. *Academy of Management Journal*, 46, 160-178.

Saunder, Lewis S., and Andrian R. (2009), Capital Market Seasonality: The Case of Stock Market Returns, *Journal of Financial Economics,*3, (October 1976),376-402.

Schwert, T. (2001), "Day of the Week Effect in Emerging Asian Stock Markets: Evidence from the GARCH Model", *Applied Financial Economics*, Vol. 10, No. 3, pp. 235-242.

Steeley, J. M. (2001). A note on information seasonality and the disappearance of the weekend effect in the UK stock market. *Journal of Banking and Finance, 25(1)*, 1941–1956.

Strong, C. (1992). *Corporate Reporting and Company Law*, Cambridge: Cambridge University Press.

Sutheebanjard, P., & Premchaiswadi, W. (2010). Analysis of calender effects: Day-of-the-week effect on the Stock Exchange of Thailand (SET). *International Journal of Trade, 1(1)*, 57–62.

Thomas Baker, H. K. and Gallagher, P. L. (2002), Management's View of Stock Splits, Financial

Wachira, M. M., (2013). January Effect on Stock Returns: Evidence from Nairobi Securities Exchange. Unpublished Research Project (MBA), School of Business, university of Nairobi

ISSN: 2455-8834

Volume:02, Issue:04

Williams, J. (1986), Financial anomalies under rational expectations: a theory of the annual size and related effects, unpublished manuscript, Graduate School of Business, New York University, New York, NY.

Wooldridge, Jeffrey M. Introductory Econometrics: A Modern Approach, Thomson Southwestern, Mason, OH, 2003.

Wyeme, B. M. and Olfa, C. (2011).Month of the year effect: Existence and behavioral explanation. *International Research Journal of Finance and Economics*, 67, 72-81.

APPENDICES

APPENDIX I: LISTED COMPANIES AT NAIROBI SECURITIES EXCHANGE

1. Eaagads Limited
2. Kapchorua Tea Company Limited
3. Kakuzi Company Limited
4. Limuru Tea Company Limited
5. Rea vipingo Plantations Limited
6. Sasini Limited
7. William Tea Kenya Limited
8. Express Kenya Limited
9. Kenya Airways Limited
10. Nation Media Group
11. Standard Group Limited
12. TPS Eastern Africa Limited
13. Scan Group Limited
14. Uchumi Supermarkets Lmited
15. Hutchings Biemer Ltd
16. Longhorn Kenya Limited
17. Atlas Development and Support Services
18. Safaricom Limited
19. Car and General (K) Limited
20. Sameer Africa Ltd
21. Mashalls East Africa Limited
22. Barclays Bank Limited
23. CFC Stanbic Holdings Limited
24. Diamond Trust Bank Kenya Limited
25. Housing Finance company Ltd

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26. Kenya Commercial Bank Ltd
27. National Bank of Kenya Ltd
28. NIC Bank ltd
29. Standard Shartered Bank Ltd
30. Equity Bank Limited
31. Cooperative Bank of Kenya Ltd
32. Jubilee Holdings Ltd
33. Pan Africa Insurance Holdings Ltd
34. Kenya Re- Insurance corporation Ltd
35. CIC Insurance Holdings
36. Liberty Kenya Holdings Limited
37. Britam Holdings Limited.
38. Olympia Capital Holdings Ltd
39. Centum Investment Company Ltd
40. Trans Century Ltd
41. Home Africal Limited
42. Kurwitu Ventures
43. BOC Kenya Limited
44. British American Tobacco Limited
45. Carbacid Investiments Ltd
46. East African Breweries Ltd
47. Mumias Sugar Company Ltd
48. Eveready East Africa Ltd
49. Kenya Orchards Ltd
50. A. Baumann Company Ltd
51. Frame Tree group Holdings Ltd
52. Unga Group Ltd
53. Nairobi Securities Exchange Ltd
54. Stanlib I- Reit
55. Athi river Mining Ltd
56. Bamburi Cement
57. Crown Berger
58. E.A Cables Ltd
59. E.A. Portlands Cement Ltd
60. Kenol Kobil Limited
61. Total Kenya Limited
62. KenGen Ltd

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63. Kplc Ltd
64. Umeme Ltd

APPENDIX II: DATA CAPTURE FORMS

Summary of Returns for Twelve Months for period 2015

Months	Expected Returns	Actual Returns	Abnormal Returns	Cumulative Abnormal Returns
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				

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Coefficients of Regression Model for Twelve Months for the year 2011

Summary of Returns for Twelve Months for period 2012

Months	Expected Returns	Actual Returns	Abnormal Returns	Cumulative Abnormal Returns
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				

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Coefficients for Regression Model for Twelve Months in the year 2012.

Summary of Returns for Twelve Months for period 2013

Months	Expected Returns	Actual Returns	Abnormal Returns	Cumulative Abnormal Returns
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				

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Coefficients for Regression Model for Months in the year 2013

Summary of Returns for Twelve Months for period 2014

Months	Expected Returns	Actual Returns	Abnormal Returns	Cumulative Abnormal Returns
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				

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Coefficients Regression Model for Twelve Months for the Year 2014.

Model	Unstandardised		Standardized	t	Sig.
		Std error	Beta		
Constant 1 RM					

Dependent Variable: AR

Summary of Returns for Twelve Months for period 2015

Months	Expected Returns	Actual Returns	Abnormal Returns	Cumulative Abnormal Returns
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				

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Coefficients of the Regression Model for Twelve Months for the year 2015

Model	Unstandardized coefficients		Standardized coefficients	T	Sig.
	B	Std error	Beta		
Constant 1 RM					

Dependent Variable: AR

Summary form

Descriptive											
	n	minimum	maximum	Mean		Std deviation	variance	Skewness		kurtosis	
	Statistics	Statistics	statistics	Statstics	Std error	Stastics	statistics	Std error	statistics	statistics	Std error
Cum ABR	64										
VALID N (listwise)	64										

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T-test Statistic

	T v = 0					
	T	Df	Sig.	Mean difference	95% confidence	
					Lower	Upper
ABR						

Source: Research Data

