THE EFFECT OF MUSLIM HOLIDAYS ON STOCK RETURNS OF LISTED COMPANIES AT THE NAIROBI SECURITIES EXCHANGE

BY

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DECLARATION

This research Project is my original work and has not been presented for examination to any othercollege or any other institution of higher learning for academic accreditation.

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ABBREVIATIONS.

NSE- Nairobi stock exchange

EMH-Efficient market hypothesis

CEE-Central and Eastern European

CMA- Capital Markets Authority.

SPSS- Statistical packages for social sciences

CAR-Cumulative Abnormal Returns

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ABSTRACT

Traditional finance theory postulates that investors are rational, in the sense that they correctly update their beliefs when new information is available. These assumptions of rationality, and their corresponding implications for market efficiency, have come under attack recently from a number of quarters. Psychologists and experimental economists have documented a number of departures from market rationality in the form of specific behavioral biases that are apparently ubiquitous to human decision making under uncertainty. One of the human characteristic and features is its beliefs. Feature which has important effect on lifestyle, culture, society and decisions making - even economic decisions. This study intended to investigate the effect of Muslim holidays on stock returns at the NSE. The Islamic holidays are religious practices whose aim, like all other fundamentals of Islam, is to imbibe piety and self-righteousness. It also promotes the spirit of sacrifice for a right cause. During these holidaysthe observances affect investors' reasoning and emotional state. This thus affects their decision making under uncertainty. Event study methodology was employed in this study and data for two years, 2013 and 2014, of the of the NSE 20 share index movements in prices collected. This data was analyzed using spreadsheets like excel and fed into SPSS (Statistical packages for social sciences) for further analysis. The results show that six out of the ten holidays studied during the two years had an effect on stock returns. Thus Muslim holidays affect stock returns of companies listed at the NSE. This implies that the stock market is influenced by investor sentiments and moods hence investors are not rational and so a stock market anomaly exists at the NSE.

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CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

According to traditional finance, it is assumed that investors are rational, in the sense that they correctly update their beliefs when new information is available (Pesaran 2005). This argument is consistent with the efficient market hypothesis. Fama (1970) defined efficient market as a market with large numbers of rational profit maximizing individuals actively competing with each other and doing attempts to predict future market values of individual securities, and where all important relevant information is almost freely available to all investors. According to Reilly and Brown (2004) an efficient capital market is one in which security prices adjust rapidly to the arrival of new Information and, therefore, the current prices of securities reflect all information about the security**.**

These assumptions of rationality, and their corresponding implications for market efficiency, have come under attack recently from a number of quarters (Lo 2005). People often suffer from cognitive and emotional biases and act in a seemingly irrational manner (Aduda, Oduor and Omwonga 2012). In particular, psychologists and experimental economists have documented a number of departures from market rationality in the form of specific behavioral biases that are apparently ubiquitous to human decision making under uncertainty (Lo 2005). In standard finance theory, a situation in which a performance of stock or a group of stocks deviate from the assumptions of efficient market hypotheses is defined as a financial market anomaly (Latif, Arshad, Fatma and Farooq 2011). The existence of seasonality in stock returns violates the weak

form of market efficiency because equity prices are no longer random and can be predicted based on past pattern. This facilitates market participants to devise trading strategy which could fetch abnormal profits on the basis of past pattern (Ray 2012).

A lot of research has been done in this area of market anomalies including day of the week effect (Kiymaz and Berument 2003), (Kulavi 2013), (Oyori 2012), holiday effect (Marrett and Worthington 2007), (Dodd and Gakhovich 2011), (Rasugu 2005) and (Osman 2007), and turn of the month effect (Migiro 2010), (Waithaka 2013) (Ray 2012) among others. The findings documented show proof of these anomalies.

The Islamic calendar anomalies are becoming very researchable topics that lay its impact on the stock markets (Sultan and Malik 2013). This is because Islamic finance has experienced strong global growth in recent times with a particularly notable surge in demand since the late 1990s (Alrashidi 2013). Newly created financial instruments such as Islamic bonds and Islamic mortgage (murabaha) are increasingly common offerings in even the most traditional financial services organizations (Mitchell, Rafi, Severe and Kappen 2014).

Shah and Ahmed (2014) observe that while Islamic calendar shows effects on the life of Muslims, as a whole or individually, like the month of Muharam and Ramadan in which people pay their much attention towards rituals and faith. This can affect the daily business life in country, because less attention is paid on other activities. According to Mitchellet al (2014), intense religious observance during Ramadan leads to an increase in perceived social support and happiness among the observant and that this combination of psychological factors may affect investor sentiment and decision-making.

Al-Hajieh, Redhead and Rodgers (2011) confirms this observation in their findings where they find Strong evidence of significant and positive calendar effects in respect to the whole period of Ramadan in most countries and argue this can possibly be attributed to synchronization-related herding effects amplifying the impact of the mood swings associated with this period Białkowski, Etebari, and Wisniewski (2012) in their study concur when they find that stock returns during Ramadan are almost nine times higher and less volatile than during the rest of the year. They go on and say that these results are consistent with a notion that Ramadan positively affects investor psychology, as it promotes feelings of solidarity and social identity among Muslims world-wide, leading to optimistic beliefs that extend to investment decisions.

1.1.1 The Muslim Holidays

In general, Islamic calendar is also a lunar calendar based on twelve lunar months in a year of 354 (or 355 days in leap year), used to date events in many Muslim countries (concurrently with the Gregorian calendar), and used by Muslims everywhere to determine Islamic holy days and festivities (Lee and Hamzah 2010). Since Muslim holiday depends on sighting of moon, we can see that Muslim events are not fixed in Gregorian calendar. Over years, a Hijri calendar holiday changes month and day in Gregorian calendar (Chowdhury and Mostari 2015).

Muharram is the month with which the Muslims begin their lunar Hijrah Calendar. Although the month of Muharram is a sanctified month as a whole, yet, the 10th day of Muharram is the most sacred among all its days. The day is named Ashurah (Usman 2014). Muharram is a solemn month for Muslims due to the martyr of Hazrat Imam Husain (Shah, Shaikh and Bhattin.d). According to Al-Ississ (2010) Ashoura is associated with negative valence resulting from the anger and sadness of mourning, especially for Shi'a Muslims.

One of the important festivals in the Islamic calendar is Eid-ul-Azha which marks at the 10th of Zilhaz of Hijri calendar. It is also known as festival of sacrifice day or Eid of Qurbani. This aim of sacrifice, like all other fundamentals of Islam, is to imbibe piety and self-righteousness. It also promotes the spirit of sacrifice for a right cause. In this period, people spends a lump sum amount of money as composed to other months, it is interesting to examine the behavior of trading activity under these situations (Chowdhury and Mostari 2015).

Ramadan is the ninth month of the Muslim calendar. The dates for this Holy month are not fixed on the Gregorian calendar and so are determined by observing the movements of the moon. This is one of the most celebrated holidays among the billions of Muslims throughout the world. (Bialkowsiki, Etabari and Wisniewski 2010). During Ramadan Muslims can experience a whole series of emotions. The process of fasting can be of particular significance here. Fasting is meant to teach the person patience, sacrifice and humility, but it also enhances the senses and emotion. Muslims also ask forgiveness for past sins, pray for guidance and help in refraining from everyday evils, and try to purify themselves through self-restraint and good deeds (Al-Hajieh et al 2011). Conceptually, the potential impact of Ramadan upon financial markets may be attributed to its effect on investors' reasoning and emotional state during this observant period.

Eidul-Fitr is a Muslim holiday that marks the end of Ramadan. Eid is an Arabic word meaning "festivity", while Fiṭr means "to break-fast"; and so the holiday symbolizes the breaking of the fasting period. Eidul-Fitr lasts for three days of celebration. It falls on the first day of Shawwal, the month which follows Ramadan in the Islamic calendar. It is a time to give in charity to those

in need, and celebrate with family and friends the completion of a month of blessings and joy (Al-Hajieh et al 2011).

1.1.2 Stock Returns

According to Reilly and Brown (2004), a return is what investors earn from their investments and an investment is the current commitment of dollars for a period of time in order to derive future payments thatwill compensate the investor for the time the funds are committed, the expected rate ofinflation, and the uncertainty of the future payments. Stock Market Returns are therefore the returns that the investors generate out of the stock market. This return could be in the form of profit through trading or in the form of dividends given by the company to its shareholders from time-to-time.

1.1.3 Muslim Holidays and Stock Returns.

One of the human characteristic and features is its beliefs. Feature which has important effect on lifestyle, culture, society and decisions making - even economic decisions (Ramezani, Pouraghajan and Mardani 2013). Muslim holidays imbibe piety and self-righteousness in an in individual. Their effect on stock returns can be considered in light of the effect of these religious observances on investor sentiments.

In Pakistan, Hasain (1998) concludes that although there is no significant change on stock returns, the significant decline in volatility could be attributed to the generally low pace of economic activity. He adds that many Muslims may refrain from stock market speculation in the month of Ramadan. Seyyed, Abraham and Al-Hajji (2005) and Mustafa (2011) have documented that volatility and trading activity disappeared significantly during Ramadan.

According to Shah, Shaikh and Bhatti (n.d), given the gloomy investor mood during the month of Muharram, a negative effect on the returns of Muslim financial markets has been observed while Al-Ississ (2010) findings documents statistically significant drops in the trading volume and changes in daily stock returns associated with religious experiences on these holy days, the more sacred days of Ramadan yield a positive impact on returns while Ashoura days yield a negative one which he attributed to a positive mood during Ramadan and a negative mood during ashoura.

1.1.4 Companies Listed at the NSE

The Stock market in Kenya is one of the most highly developed stock markets among the Eastern and Central African countries (Nyasha and Odhiambo 2014) The primary role of a stock market is to provide a market where financial instruments can be traded in a regulated environment without constraint (Masila and Onsongo 2014).

The main indices in the NSE are: the NSE 20 share index, Nairobi all share index (NASI) and AIG (American International Group) 27 share index (NSE website) The NSE 20 share index is equal-weighed geometric mean of 20 large ordinary stocks traded on the Nairobi Stock Exchange. Companies with stocks listed in the NSE 20 share index include the following: Mumias, Express, Rea vipingo, Sasini, CMC, Kenya Airways, Safaricom, Nation Media Group, Barclays, Equity, KCB, Stan chart, Bamburi, BAT (K), Kengen, Centum, EABL, EA cables, KPLC and Athi River mining company. This index primarily focuses on price changes amongst these 20 companies.

1.2 Statement of the problem

Efficient market hypothesis is one of the important paradigms of traditional finance theories (Latif, et al 2011). It asserts that financial markets are efficient, hence financial assets are correctly priced and implying that one cannot consistently achieve returns in excess of the average market returns given the information available at the time the investment is made. (Keitany and Lumumba 2012). However this has come under attack as various studies have document departures from the EMH implying that markets are not efficient at least not in the weak form denoting departures from underlying theory. These departures are called market anomalies (Schwert 2003). On the Portuguese stock market (Silva 2010) found significant regularities which were the Pre-holiday effect (where average returns are twelve times higher the other days' returns) and a Turn-of the-month effect. In Thailand, (Tangjitprom 2011) found that the calendar anomalies exist in Thai stock market. According to their results the return is abnormally high during December and January, The return during the turn-of-month period, which can be defined as the last trading day and the first four trading days of the following months, is also abnormally high. Finally, the return is also abnormally high on Fridays but abnormally low on Mondays. Various anomalies have also been documented at the NSE which include holiday effect (Ndonga 2014) and day of the week effect, weekend effect and monthly effect. (Kuria and Riro 2013). (Aduda and Muimi 2011) contend that investors overreact to both good and bad news which is a possible explanation to market anomalies and asset mis-pricing. This is evidence that markets are far from being efficient and there is need to carry out more studies.

The effect of Muslim holidays on stock exchange in Kenya is one area that has not been much explored by researchers. It is true that a number of significant studies have been done on the

holiday effect at the NSE (Rasugu 2005) and (Osman 2007). These studies however have not considered the Muslim holiday's effect. Osman (2007) only includedEid-Ul-Fitar which is the end of ramadan but did not study the effect of other muslim holidays. Nyariki (2014) on the other hand only loooked at the month of ramadan but did not consider other muslim holidays. In addition, the studies done on the international scene such as Pakistan, (Hasain 1998) Saudi Arabia, (Seyyed, Abraham and Al-Hajji 2005) and Karachi (Mustafa 2011) have largely concentrated on the Ramadan effect.

The uptake of Islamic banking is projected to grow exponentially in sub-Saharan Africa (Ndungu 2011). Gelbard, Hussain, Maino, Mu, and Yehoue (2014) posit that Islamic banking emerged in Kenya with Barclays launching Islamic banking products in December 2005. The sector later expanded with the introduction of two Islamic banks, First Community Bank in 2007 and Gulf African Bank (GAB) in 2008. According to Ali and Ahmad (2004) Islamic finance has grown beyond banking since 1990s and expanded to the realm of capital markets, now Islamic financial industry comprises of Islamic banks, investment funds, asset management companies, house financing companies, and insurance companies. With the growth of islamic banking it would be interesting to find out if the effect is felt at the stock exchange for if this were the case then their would be a considerable effect of the muslim holidays on the companies listed at the NSE. This young and growing sector needs to be researched further.

Studies done at the NSE have shown mixed results as far as market anomalies are concerned. Ndungu (2014) documents a month of the year effect, Wachira (2013) finds a January effect Mulumbi (2010) found a Turn-of-the-month effect, Sifuna (2012) finds a day of the week effect

while Mughendi (2014)'s results show the existence of small firm effect. However Migiro (2010) does not find a turn of the month effect same to Kipyegon (2014) whose research found the turn of the month effect non-existent on the NSE. According to Nyaga (2014) a price earnings effect did not exist on the Nairobi Securities Exchange. These findings show that there is need to continue carrying out investigations on stock market anomalies as far as the NSE is concerned. The research question therefore; is there a Muslim holiday's effect on stock returns of companies listed at the NSE?

1.3 Objective of the Study

Consists of the general and specific objectives

1.3.1 General Objective

The general objective is to explore Muslim holidays (Mawlid, Muharam, start of Ramadan, end of Ramadan also known as Eid al Fitr and Eid al Adha) impact on stock returns.

1.3.2 Specific Objectives

The specific objective of this study is to carry out the following investigations:

a. To establish if there is a significant change in stock returns arising from the Muslims holiday effect not based on new market information.

b. To examine existence of pre and post Muslim holiday anomalies in NSE 20 share index by using data from 2013 to 2014

c. To find the impact of the Muslim holiday anomalies on stock returns.

1.4 Value of the Study.

This study intends to investigate the effect of Muslim holidays on stock returns at the NSE. The study will be useful to the following stakeholders;

To policy makers; the policy makers include the capital market authority and the various capital market regulation authorities. This study will help in the implementation of policies and regulations to be able to control and stabilize the performance of stock market in the area of improving its efficiency that is if an anomaly is discovered. This will also help to attract, restore and maintain investor confidence in the capital market of the country.

To investors; the study will assist investors and stock traders in their decision making so as to increase the value of their wealth. If any anomaly is discovered they will take advantage of it to make profitable trading.

The Academics; There is very little literature in relation to effect of Muslim holidays especially in the developing countries. Islamic finance being an infant sector in our economy, this research will go a long way into shading more light in this field and form the basis for further research on this subject. It will also help the academics to use this study as an exploration into this area of study and help better understand the topic and questions related to this area of research. The findings of this study will also add to the stock of knowledge in the pursuit of understanding the efficiency of the securities markets, thus adding to the ever growing literature on market efficiency.

To the government; the performance of stock markets is one of the signals of economic performance. The efficiency and inefficiency of markets is an indicator of economic and financial millage of any economy this study will therefore assist in analyzing a country's

economic performance. The Kenyan government as a regulator of stock markets through the CMA is able to monitor the performance of stock market in this regard, hence will attract both local and foreign investors and create a conducive environment for investment in the stock exchange and also for taxation purposes.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This section of the study presents the theoretical and empirical review. A literature review surveys books, scholarly articles, and any other sources relevant to a particular issue, area of research, or theory, and by so doing, provides a description, summary, and critical evaluation of these works in relation to the research problem being investigated.

2.2 Theoretical Literature Review

In theoretical literature review, the research discusses theories related and that guide the study.The purpose is to examine the corpus of theory that has accumulated in regard to an issue, concept, theory, phenomena. The theoretical literature review helps to establish what theories already exist, the relationships between them, to what degree the existing theories have been investigated, and to develop new hypotheses to be tested.

2.2.1 The Random Walk Theory

The theory first set down by the mathematician Louis Bachelier 1900 received a modern interpretation by the economist Burton Malkiel (Jarrett 2008/2009). The theory of random walks implies that a series of stock price changes has no memory-the past history of the series cannot be used to predict the future in any meaningful way (Fama 1965). In statistical terms, this hypothesis states that successive price changes are independent. Consequently there must be no serial correlation between the prices at different times (Fama 1970).

The logic of the random walk idea is that if the flow of information is unimpeded and information is immediately reflected in stock prices, then tomorrow's price change will reflect only tomorrow's news and will be independent of the price changes today. But news is by definition unpredictable, and, thus, resulting price changes must be unpredictable and random. As a result, prices fully reflect all known information, and even uninformed investors buying a diversified portfolio at the tableau of prices given by the market will obtain a rate of return as generous as that achieved by the experts (Malkiel 2003).

Empirical research studies have been done on various emerging markets to test if indeed stock prices follow a random walk model. In particular a good number of studies done on emerging markets reject the hypothesis that stock prices follow a random walk that is prices are to some extent predictable and market inefficiencies exist. Such studies include; Hong Kong (Jarreth 2008), china (Ali, Darrat and Zhong 2008), Korea (Jarrett (2008/2009) and Kenya (Muthama and Mutothya 2013). The random walk model also had no theory backing it (Fama 1970).

2.2.2 The Efficient Market Hypothesis.

The term 'efficient market' was first introduced into the economics literature by Eugene Fama (Halari 2013). According to (Fama 1970) a market in which prices always 'fully reflects' available information is efficient. Malkiel (2003) argues that the term efficiency in efficient financial markets means that they do not allow investors to earn above-average returns without accepting above-average risks. (Jensen 1978) adds that The Efficient Market Hypothesis is in essence an extension of the zero profitcompetitive equilibrium condition from the certainty world of classical price theory to thedynamic behavior of prices in speculative markets under conditions of uncertainty.

The key reason for the existence of an efficient market is the intense competition among investors to profit from any new information (Clarke, Jandik and Mandelker 2009). The accepted view was that when information arises, the news spreads very quickly and is incorporated into the prices of securities without delay. Thus, neither technical analysis, which is the study of past stock prices in an attempt to predict future prices, nor even fundamental analysis, which is the analysis of financial information such as company earnings, asset values, etc., to help investors select "undervalued" stocks, would enable an investor to achieve returns greater than those that could be obtained by holding a randomly selected portfolio of individual stocks with comparable risk (Malkiel 2003).

The intellectual dominance of the efficient-market revolution has more been challenged by economists who stress psychological and behavioral elements of stock-price determination and by econometricians who argue that stock returns are, to a considerable extent, predictable (Malkiel 2003).

2.2.3 Prospect Theory

The prospect theory is a psychologically realistic alternative to the expected utility theory (Kahneman and Tversky 1979). Prospect theory provides an augmentation to neoclassical economic utility models, and is a descriptive approach to human behavior that explains how people actually make decisions rather address how people theoretically should make decisions (Lim and Amanda 2015).Abdellaoui, Bleichrodt and Paraschiv (2007) posit that one important reason why people deviate from expected utility is loss aversion: people interpret outcomes as gains and losses relative to a reference point and are more sensitive to losses than to absolutely commensurate gains. Put simply a gain of shs. 1,000 increase the utility by less than a loss of shs.

1,000 reduce it or losing $100 hurts more than gaining $100 yields pleasure (Aduda and Muimi 2011).

Because of loss aversion, the manner in which an outcome is described/framed-either in the vocabulary of gains or in the vocabulary of losses - has an important bearing on decision making. The psychological principles that govern the perception of decision problems and the evaluation of probabilities and outcomes produce predictable shifts of preference when the same problem is framed in different ways (Kahneman and Tversky 1981). In particular, people underweight outcomes that are merely probable in comparison with outcomes that are obtained with certainty. This tendency, called the certainty effect, contributes to risk aversion in choices involving sure gains and to risk seeking in choices involving sure losses(Kahneman and Tversky 1979).

2.3 Determinants of Muslim Holidays Effect on Stock Returns

Determinants of stock market returns on emerging economies have indicated that there exists a host of factors that influence stock returns. Behavioral finance theory and stock market anomalies are among them.

2.3.1 Behavioral Finance Theory.

Behavioral finance argues that some features of asset prices are most plausibly interpreted as deviations from fundamental value, and that these deviations are brought about by the presence of traders who are not fully rational (Berberis and Thaler 2003). By the start of the twenty-first century, the acceptance of the efficient market hypothesis had become far less universal. Mounting anomalous evidence evoked a multidisciplinary approach to asset pricing incorporating, among others, psychological and behavioral theories (Lishenga 2011). According to Al-Hajieh, et al (2011), Behavioral finance theory suggests that increased uncertainty can lead

to greater dependence on behavioral heuristics, including optimism bias and outcome bias in financial decisions. Shefrin and Statman (2011) add that psychology includes aspirations, cognition, emotions, culture, and perceptions of fairness.

Malkiel (2003) argues that as long as stock markets exist, the collective judgment of investors will sometimes make mistakes. Undoubtedly, some market participants are demonstrably less than rational. As a result, pricing irregularities and predictable patterns in stock returns can appear over time and even persist for short periods. Moreover, the market cannot be perfectly efficient or there would be no incentive for professionals to uncover the information that gets so quickly reflected in market prices.

2.3.2 Stock Market Anomalies/Irregularities

Despite early evidence that the stock market is rational hence efficient, there have been scores of studies that have documented long-term historical anomalies in the stock market that seem to contradict the Efficient Market Hypothesis (Muimi and Aduda 2011). According to Jilek (2012), Anomalies in stock returns are abnormalities in behavior of stocks on the markets. Anomalies are not only connected with price but also with stock volume traded in the markets. Schwert (2003) contends that anomalies indicate either market inefficiency (profit opportunities) or inadequacies in the underlying asset-pricing model. Basu (1977) and Jensen (1978) independently test the efficient market hypothesis and both find that there were inadequacies.

A lot of researchers devote their career to analysis of possible causes of the anomalies. Nevertheless, nobody has found the answer, why the returns are higher in some days and months than in other ones. Hence, most researchers agree that psychological effects play the key role (Jilek 2012). As a result markets are far from being efficient or rational as they are characterized

by traders whose decision making is influenced by their moods and feelings as opposed to the information available in the market (Berberis and Thaler 2003).

2.4 Empirical Literature Review

In empirical literature review, the study discusses works of other authors both international and local in relation to market anomalies.

2.4.1 International Empirical Literature Review on Market Anomalies.

Calendar anomalies on the stock market include January effect, turn of the month effect, Monday effect, day of the week effect, weekend effect and holiday effect. A lot of research has been done and documented regarding calendar anomalies.

Hansen and Lunde (2003) studied stock indices from Denmark, France, Germany, Hong Kong, Italy, Japan, Norway, Sweden, UK and USA. Their findings were that calendar effects are significant in most series, and it is primarily end-of-the-year effects that exhibit the largest anomalies. They also deduced that in recent years it seems that the calendar effects have diminished except in small cap stock indices. In Thailand, Tangjitprom (2011) found that the calendar anomalies exist in Thai stock market just like Hansen and Lunde (2003). According to their results the return is abnormally high during December and January; the return during the turn-of-month period is also abnormally high. Finally, the return is also abnormally high on Fridays but abnormally low on Mondays.

Marrett and Worthington (2008) carried out a study on the day-of-the-week effect in Australian daily stock returns at the market and industry levels and for small capitalization stocks from Monday 9 September 1996 to Friday 10 November 2006. A regression-based approach is employed. The results indicate that while the Australian market overall provides no evidence of

daily seasonality, there is evidence of a small cap day-of-the-week effect with systematically higher returns on Thursdays and Fridays.

Marrett and Worthington (2007) used a regression based approach to examine the presence of the holiday effect in Australian market and industry returns over the period 1996 to 2006. Evidence is found of a holiday effect at the market level with pre-holiday returns typically five times higher than other days. In Balbina and Martins (2002) the average returns on days before and after public holidays are compared with the other days on the Portuguese stock market. The results show that, for the 1988-2001 periods, average returns on days after public holidays are lower than on days before public holidays, which tends to support the hypothesis of the close-of-business effect. Dodd and Gakhovich (2011) investigated the holiday effect in 14 emerging Central and Eastern European (CEE) markets. They show that the holiday effect is present in the CEE region, with a number of countries showing abnormal pre-holiday returns. The pre-holiday effect is most pronounced in the earlier years of financial market operations, and its importance is declining over time. This suggests an improvement in market efficiency in the CEE markets since the opening of stock exchanges. New Year and Christmas produce the highest returns. Liquidity before holidays goes down.

Research that has been done on the impact of Muslim holidays on the stock exchange were mostly done in the Muslims dominated cultures, few have been done in Kenya. One of the earliest researches on the Ramadan effect was carried out by Hasain (1998) on the Pakistan equity market and the findings were that stock returns decline in the month of Ramadan, the reduction, in general, is not significant. Hence, it could be concluded that the Ramadan does not significantly affect the average return in the market. On the other hand, there is strong evidence of a significant decline in the volatility of stock returns in this month. Some years later Seyyed,

Abraham, and Al-Hajji (2005) investigated the Ramadan effect in Saudi Arabian stock market. They analyzed several sector indices in the market and showed that volatility and trading activity disappeared significantly during Ramadan consistent with (Hasain 1998).

Bialkowsiki et al (2010) investigated stock returns during Ramadan for 14 predominantly Muslim countries over the years 1989-2007. The results show that stock returns during Ramadan are almost nine times higher and less volatile than during the rest of the year. No discernible difference in trading volume is recorded. Consistent with Seyyed et al (2005) and Hasain (1998), but also found significantly higher stock returns. Al-Ississ (2010) looked at 17 Muslim financial markets finding a positive effect on stock returns over Ramadan, consistent with Bialkowski et al (2010), but a negative effect over the Muslim holy day of Ashoura. Mustafa (2011) carried out a study on the Islamic calendar effect on the Karachi stock exchange from December 1991 to December 2010 and after employing five models the results were that a Ramadan effects are found common in all models whereas Muharram effect is found in all models except one. This showed that there was a Ramadan effect in Karachi Stock market. However, it was noted that Karachi stock market is relatively a high risky market during the month of Ramadan which is against the findings of Husain (1998). Shah and Ahmed (2014) examined the effect of Ramadan on Karachi Stock Exchange by including a Dummy variable in regression model. In the light of observation it was concluded that Ramadan effect was not significant in Karachi Stock Exchange.

2.4.2 Local Empirical Literature Review on Market Anomalies.

With regard to the Kenyan case, Rasugu (2005) evaluated the impact of the holiday effect on the NSE during the period 1st January 1998 to 1st December 2002. Results show that on a trading day prior to public holidays mean returns are 1.6 times returns of other days. However, the

results are not significant. A comparison of pre-holiday and post-holiday mean returns produces similar results. Individual mean returns on six days surrounding holidays also show that pre-holiday days have lower mean returns. The results therefore do not support the existence of the holiday effect in the NSE. In agreement with these findings, Osman (2007) in the quest to determine whether there are holiday effects on stock returns at the NSE, Used AIG index returns from 1st January 1998 to 31st December 2006 and on the basis of the regression results of the AIG Index returns, none of the coefficients of the regression equation registered significance. As a result the conclusions were that there were no holiday effects at the NSE. Ndonga (2014) however disagrees with Rasugu (2005) and Osman (2007) as his findings concluded that Holiday Effect is exhibited at the Nairobi Securities Exchange and is accompanied by stock return volatility with high return volatility experienced on post-holiday returns. Pre-holiday returns showed lower volatility than the normal days return.

Kulavi (2013) carried out a study to establish whether there is existence of the day of the week at the Nairobi Securities Exchange. It was noted that Nairobi Securities exchanges depicts existence of pattern across the day of the week where Monday is characterized by the highest volatility, Thursday is characterized by the lowest volatility. Lowest volatility coincides with the highest trading volume and also the highest return while the highest volatility coincides with the lowest trading volume and thus low return. In Oyori (2012) It was evident that daily seasonal are not constant in direction and magnitude through different time periods. From the findings, the Monday effect was detected for the various sectors in the NSE 20-share index. It can be tentatively concluded from this study that the day-of-the-week effect exist on the NSE stock market sectors.

Waithaka (2013) carried out a study on turn of the month effect at the NSE and concluded that there exists a turn of the month effect at the Nairobi Stock Exchange. Migiro (2010) however found that there does not exist turn of the month effect at the NSE. This is in agreement with Daniel (2003) whose study failed to detect a turn of the month and January effect at the NSE.

On the Ramadan effect Nyariki (2014), found that even though returns tended to be lower during the Ramadan months, the difference was not statistically significant thus there was no Ramadan Effect in existence at the Nairobi Securities Exchange in the period between 2001 and 2013.

2.4.3. Summary

This chapter examined both theoretical and empirical literature review. The efficient market hypothesis and the random walk theory say that information arrives in the market randomly and stock prices change in response to the random arrival of information and hence they cannot be predicted. In the recent past however studies done indicate that stock prices can actually be predicted as people react according to their moods and behaviors. The prospect theory was also considered. According to prospect theory investors are risk averse in relation to gains and risk seeking in relation to losses and their decision is made according to how a situation is framed around a reference point. Empirical literature review reveals that studies have been done and most of them outside Africa and they indicate a Ramadan effect. Studies on other market anomalies have also been done and most of them indicate that our markets are far from being efficient. A good number of the studies also pointed out that these anomalies are diminishing or disappearing probably as people discover and take advantage of them. The studies that have been done on the Nairobi stock exchange have given mixed results on existence of market anomaly.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter discusses the research design and data collection methods that will be used by the study. It discusses the research design, study population, sample and sampling techniques, data collection and analysis.

3.2 Research Design

This is a descriptive research study. Descriptive research is undertaken in order to ascertain and be able to describe the characteristics of the variables of interest in a situation. The goal of a descriptive study is to offer the researcher a profile or to describe relevant aspects of the phenomenon of interest from an individual, organizational, industry oriented or other perspectives.Descriptive studies that present data in a meaningful form thus help the researcher to: Understand the characteristics of a group in a given situation; think systematically about aspects in a given situation and offer ideas for further probe and research. Thus the study will only look at what the effect of Muslim holidays are on stock returns but will not consider the how and why of these effects. The study covers a period of two years from 1st January 2013 to 31st December 2014.

3.3 Population

Population refers to the entire group of people, events, or things of interest that the researcher wishes to investigate. Population forms a basis from which the sample or subjects for the study is

drawn (Gweyi 2014). The population in this study is a census of all the companies quoted at the NSE as at 31st December 2014 since the firms were not many.

3.4 Sample and Sampling Techniques.

A Sample is defined as a selection of a subset of individuals from within a statistical population to estimate characteristics of the whole population. The sample chosen therefore needs to be representative of the population. We use the companies that were listed at the NSE. The daily closing NSE 20- share index will be used in this study .The sample will include daily observations from the sample period of 1st January 2013 to 31st December 2014.

3.5 Data Collection

The study will make use of secondary data. The data to be collected from the NSE will include daily closing prices of NSE 20 share index for a period of two years. This will be collected from their office through their authorized staff. This form of data collection is appropriate since the study will compare past stock prices to test for any anomaly. The dates for the Muslim holidays over the years of study will be collected from www.timeanddate.com. Though the Muslim calendar does not coincide with the Gregorian calendar then approximations for the dates will be done where possible and Islamic holidays shall first be converted to Gregorian calendar before being analyzed.

3.6 Data Analysis.

Data analysis will be carried out using the comparison period return approach (CPRA).The study will determine the Muslims holiday effect by testing the statistical difference of the mean daily

returns of the event period with the mean daily return of the comparison period. The comparison period for this study will comprise of 30 surrounding days before the event study and 30 surrounding days after. The Muslim holidays to be investigated are Mawlid, Muharam, beginning of Ramadan, end of Ramadan, (Eid al Fitr), and Eid al Adha. This gives a total of five holidays in a year; two years (2013 and 2014) will be studied. The study will apply a five day window specification as follows;
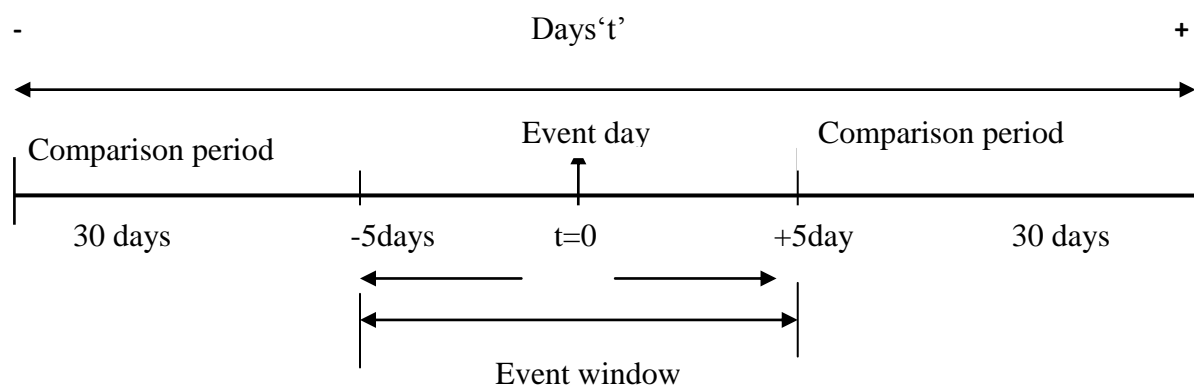
The daily returns on the stock for the event window and comparison period will be computed using the following formula;

$$R x = \frac{P x - Px\text{-}1}{Px\text{-}1}$$

R x = daily market return for day t

Px = market closing prices for day t

Px-1= market closing price for day t-1 (Previous day)

The mean daily return will also be calculated for both the event window and comparison periods.

A computer package, Statistical Package for Social Sciences (SPSS) will be used to aid in analysis of the data.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSIONS

4.1 Introduction

This chapter presents the data analysis and results of the study followed by an interpretation and a discussion of those results.

The study employs various statistical tools for extracting the presence of Muslim holiday effect at the NSE. The data was gathered exclusively from the published reports obtained from the Nairobi Securities Exchange 20-share index for the period 2013 and 2014.

4.2 Summary Statistics

The daily stock returns for both the event period and comparison period are calculated using the NSE 20 share index movements separately between the beginning and end of the respective periods for each holiday using the formula

R x = P x – Px-1

Px -1

Where, R x is the daily market return for day t, Px is the market closing prices for day t and

Px-1 is the market closing price for day t-1 (Previous day). The results are multiplied by 100 to obtain percentage mean daily returns.

4.2.1 Calculation and Analysis of Abnormal Returns

Abnormal return is defined as the difference between the actual return and the normal return. This is defined as;

$AR_{i,t}=R_{i,t}-NR_{i,t}$

Where $AR_{i,t}$ is the abnormal index returns in period t, $R_{i,t}$ is the actual or observed index return in period t and $NR_{i,t}$ is the normal or expected index return in period t.

The normal returns are computed using the mean adjusted returns as shown below;

$$NR_{i,t} = \frac{1}{30} \sum_{-35}^{-6} R_{it} + \frac{1}{30} \sum_{6}^{35} Rit$$

The daily abnormal returns are summed over the event window to derive the cumulative abnormal returns (CARs):

$$CAR_{T1-T2} = \sum_{t=T1}^{T2} AR_{it}$$

The importance of CAR is to detect any positive or negative sudden changes in the event window to help in analyzing the impact of the event on returns.

Table 4.1: Descriptive statistics for Muharram 2013

	Mean	Std deviation	Skewness	Kurtosis	Range
$NR_{i,t}$	0.068094	.50657423529	.799	1.781	2.662136262
$AR_{i,t}$	0.1064254	0.43545973866	-1.251	2.756	1.59025274

From the table above the normal returns have a mean of 0.068 and a standard deviation of the 0.51 which indicates that the market was very sensitive to any information that was coming in. the mean of the abnormal returns was 0.11 with a standard deviation of 0.44 which is relatively large indicating that the sample mean is relatively different from the population mean.

Figure 4 1: Mean daily Returns for Muharram 2013.
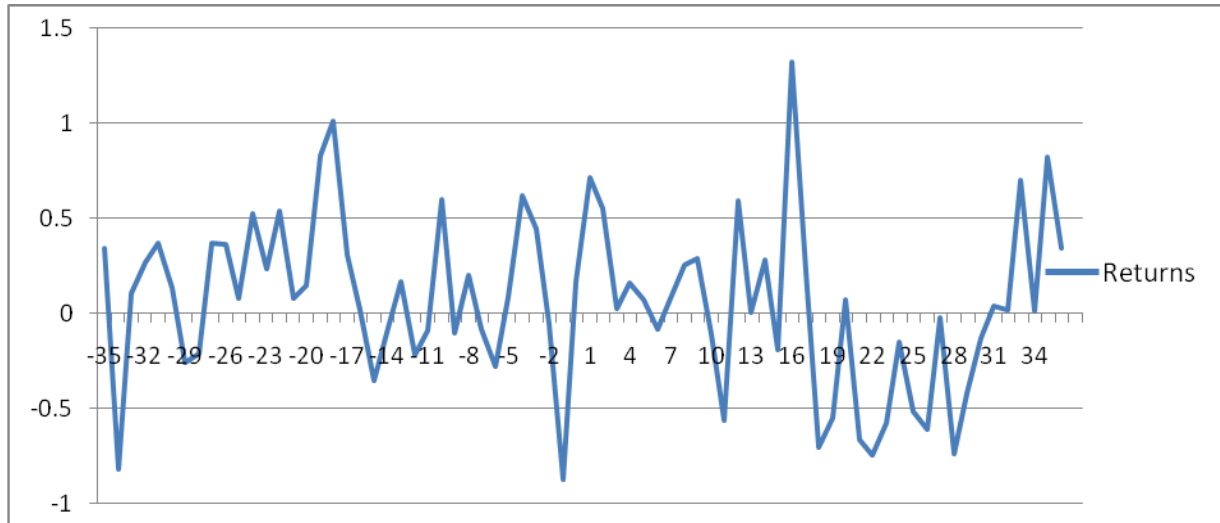
From the above figure it can be observed that in the period surrounding the event day, daily returns were fluctuating but in a straight line. There is a sudden surge in the returns on the event day and soon after the returns return to their position. The impact therefore is not so during the event period.

Figure 4.2: Cumulative Abnormal Returns for Muharram 2013
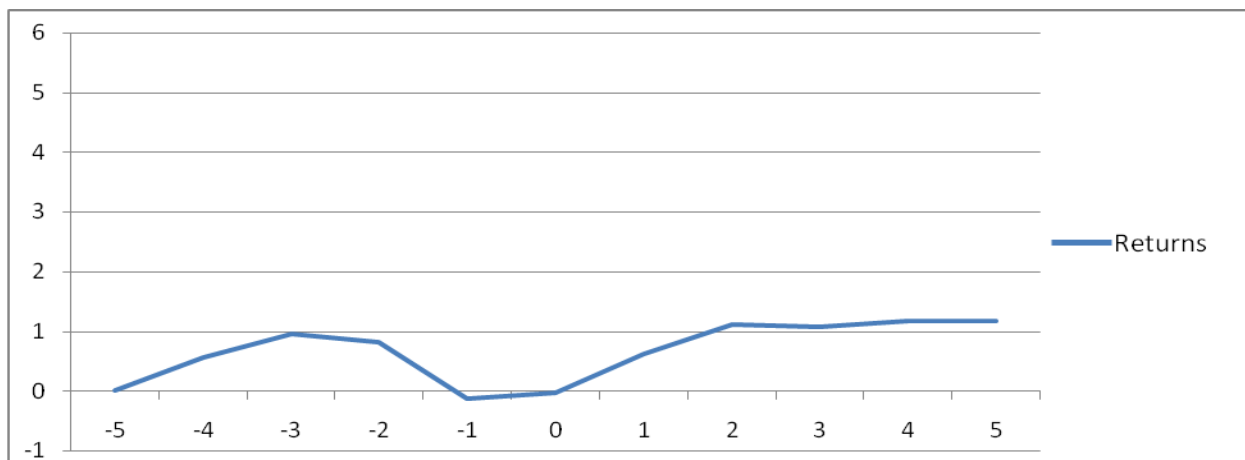
The graph of cumulative abnormal returns above indicates there were no sudden changes in stock returns apart from a small surge on the event day.

Table 4: 2.: Statistics for Mawlid al Nabi 2013

	Mean	Std deviation	Skewness	Kurtosis	Range
$NR_{i,t}$	.2741102028	1.80799100313	.131	12.326	16.11147149
$AR_{i,t}$	-.546220130	.994358987850	-.389	1.521	3.88320171

The summary statistics for Mawlid al Nabi 2013 above reveals that the mean for normal returns were 0.274 with a standard deviation of 1.80 which is large indicating sensitivity to variations in market as a result of information coming in to the market. The abnormal returns on the other hand has a mean of 0.99

Figure 4. 3: Mean daily returns for Mawlid al Nabi 2013`
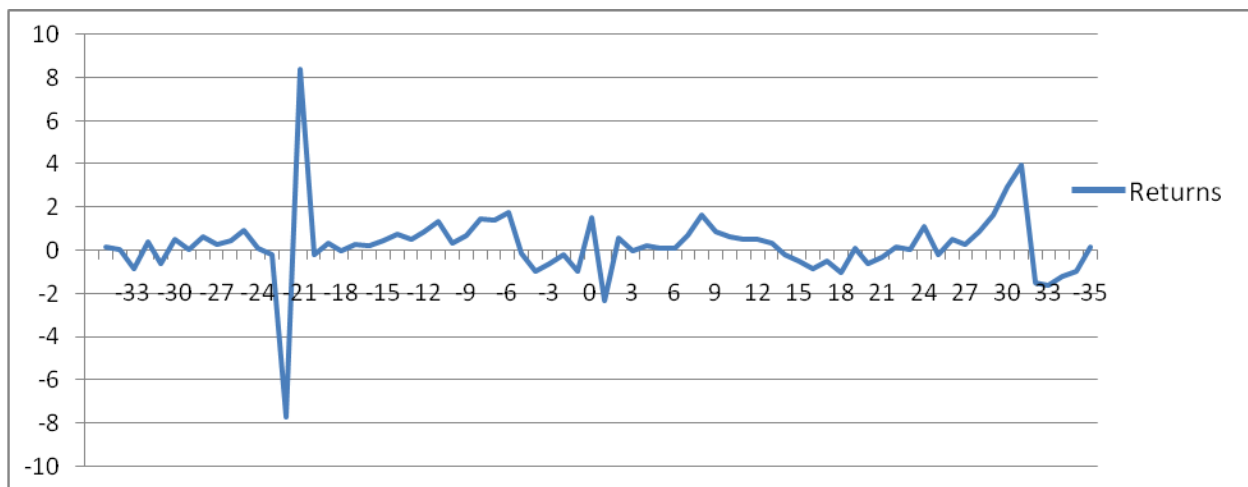
The graph above indicates that the daily returns just before the holiday was fluctuating down and just after the holiday the returns started to rise. This shows that there was a significant impact both positive and negative on the daily returns brought about by the Mawlid holiday 2013. The graph of cumulative returns reveals the results bellow.

Figure 4.4: Cumulative abnormal Returns for Mawlid al Nabi 2013
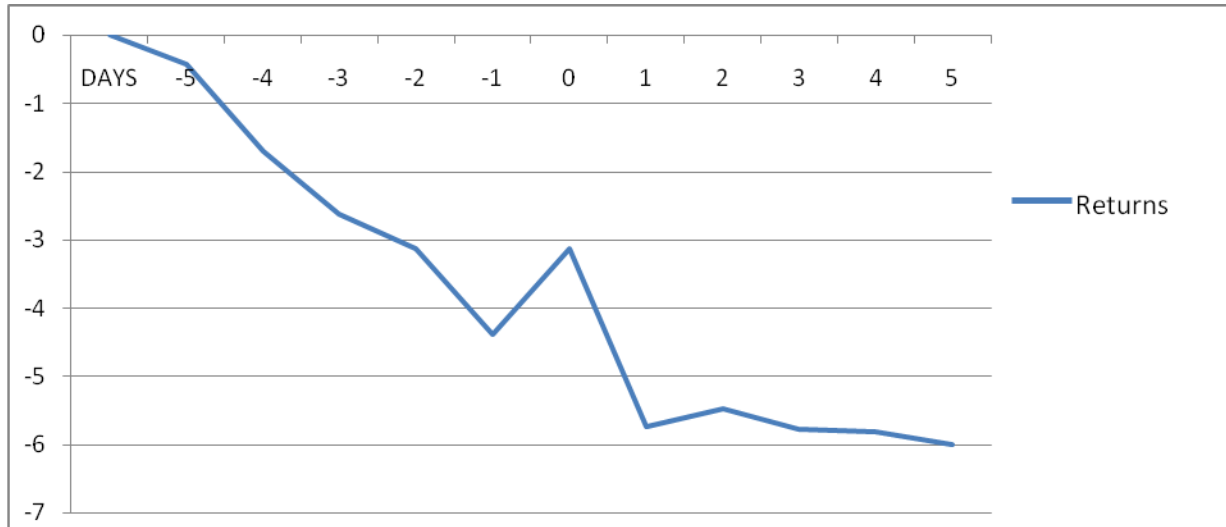
The cumulative returns graph above shows that the Mawlid holiday had a generally negative impact on returns. The returns from the above graph were decreasing. However the impact is not so big as there are no sudden big changes in the graph of cumulative abnormal returns.

 The t test to check if the mean abnormal returns were significantly different from zero reveals the following results

Table 4.3: Statistics for July 9, 2013 when Ramadan begins

	Mean	Std deviation	Skewness	Kurtosis	Range
$NR_{i,t}$	-.072459514	.71500473999	3.897	25.121	5.78135695
$AR_{i,t}$	.4767358256	.47947024222	-.089	-.694	1.56601847

From the descriptive statistics above for when Ramadan begins in 2013 reveal that the normal returns had mean of -0.0724 and a standard deviation of 0.715 which is large indicating high sensitivity in the market. Similarly the mean abnormal returns of 0.476 and a standard deviation of 0.479 indicate a high sensitivity.

Figure 4.5: Graph of mean daily returns for when Ramadan begins 2013
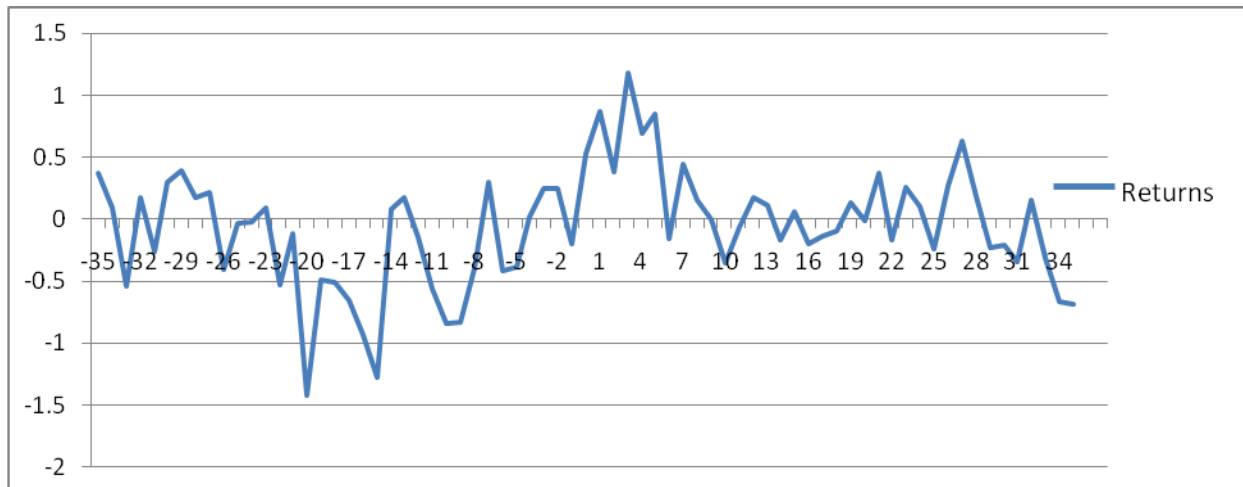
From the above graph it is observed that the returns were fluctuating upwards just before the beginning of Ramadan and shortly after Ramadan begins the returns started fluctuating down wards. The graph of cumulative returns during the event window reveals the following results;

Figure 4.6: Cumulative abnormal returns for whenRamadan begins 2013
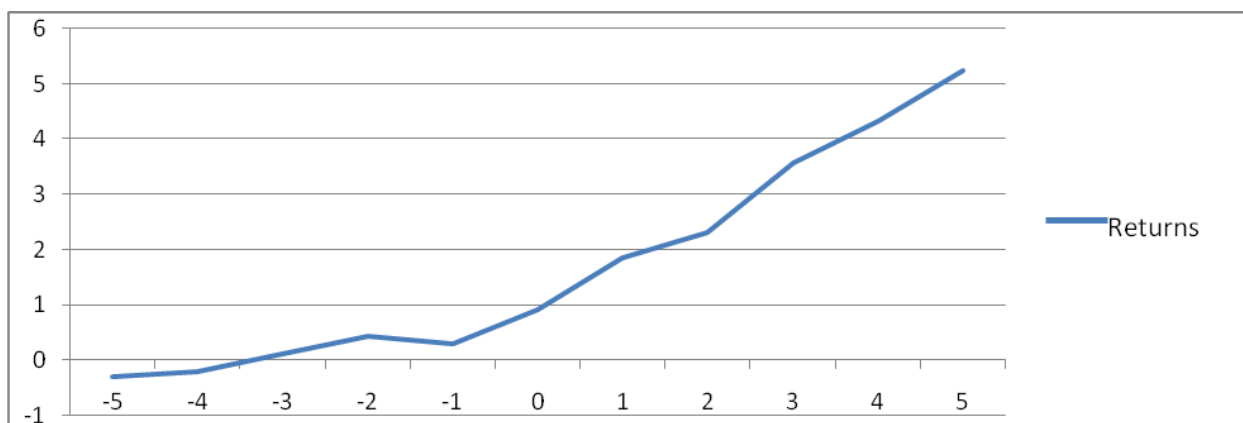
The graph of cumulative abnormal returns shows that the beginning of Ramadan 2013 did not have a very big impact positive on returns since there are no sudden breaks.

Table 4.4: Eid al-Fitr (Ramadan ends) Aug. 8, 2013

	Mean	Std deviation	Skewness	Kurtosis	Range
$NR_{i,t}$	.0021242839	.43822551510	.089	-.010	2.01657081
$AR_{i,t}$	.08250019	.263097178	.611	-.174	.860115

Descriptive statics for Eid- ul-fitr 2013 reveal that markets were very sensitive to any information coming in. this can be seen from the high standard deviation for both the normal and abnormal returns at 0.438 and 0.263 respectively relative to means of 0.002 and0.083 respectively.

Figure 4.7: Graph of Mean Daily Returns for Eid- ul-fitr 2013
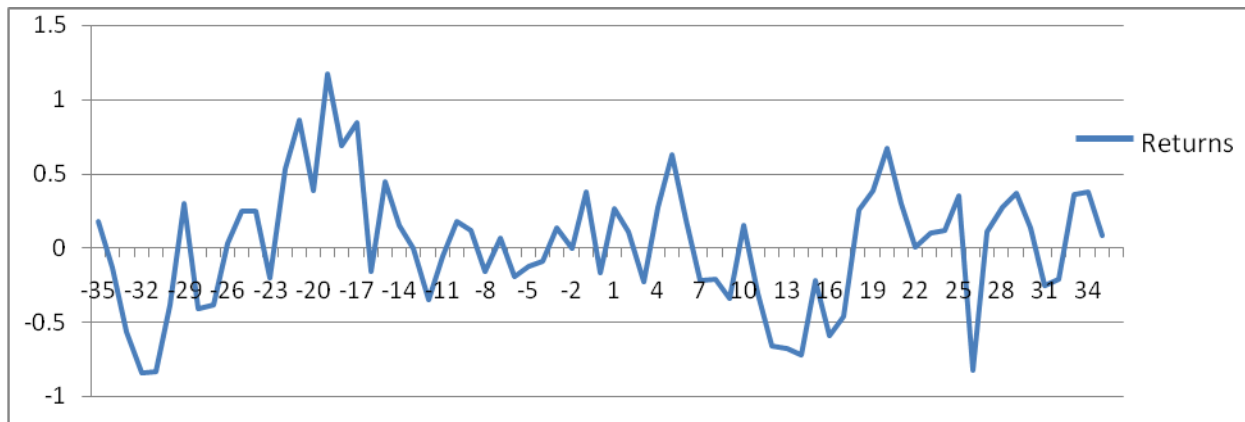
The graph above shows that the period before Ramadan the returns were increasing but at a low pace. The returns after Eid- ul-fitr 2013 went slightly up and then and they took a general downward trend . The graph of cumulative abnormal returns reveals the following trend.

Figure 4.8: Cumulative abnormal returns for Eid-ul-fitr 2013
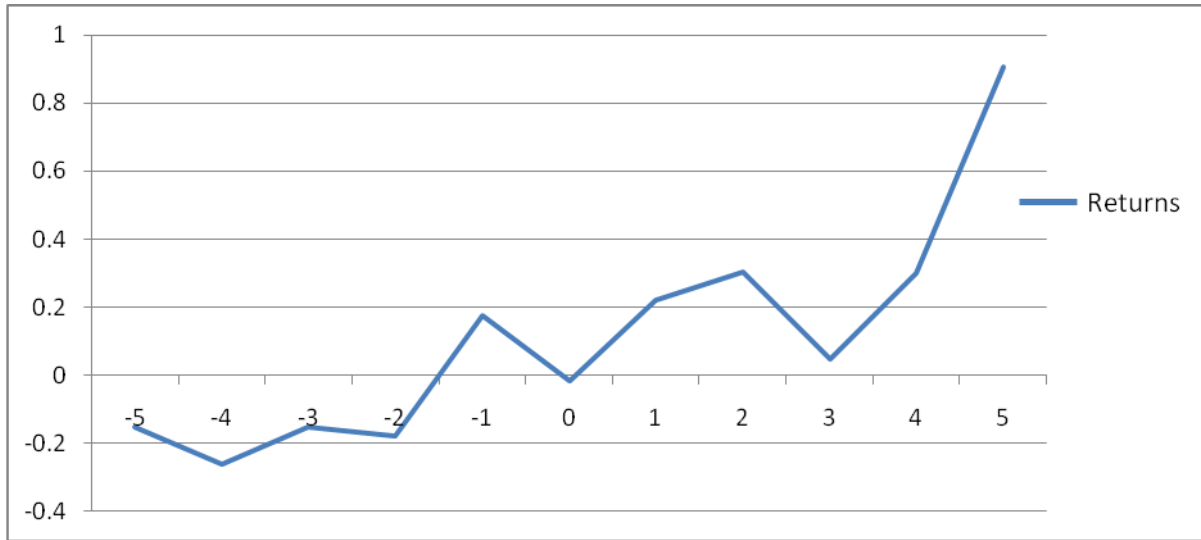
The graph shows high fluctuation in the returns both in the period before and after Eid- ul-fitr 2013. After the holiday there seem to be a considerable increase in returns. Thus this holiday impacted positively on the returns.

Table 4.5: Statistics for Eid al adha 2013

	Mean	Std deviation	Skewness	Kurtosis	Range
$NR_{i,t}$	.0447938877	.52855785076	759	3.768	3.39949989
$AR_{i,t}$	.06513439	.391462846	1.193	1.406	1.362296

Descriptive statics for Eid-al adha 2013 reveal that markets were very sensitive to any new information. The normal returns had a mean of 0.04 and a standard deviation 0.53 which is high while the abnormal returns had a mean of 0.065 and a standard deviation of 0.39 which is also relatively high. The graph of mean daily returns reveals the following;

Figure 4.9: Graph of Mean Daily Returns for Eid- al adha 2013

From the above graph the mean daily returns exhibit very high volatility in the entire event window. During the event period however there is a decreased fluctuation in stock returns. The returns just before the event window went down and slightly fluctuated upwards after the event. The graph of cumulative abnormal returns reveals the following trend.

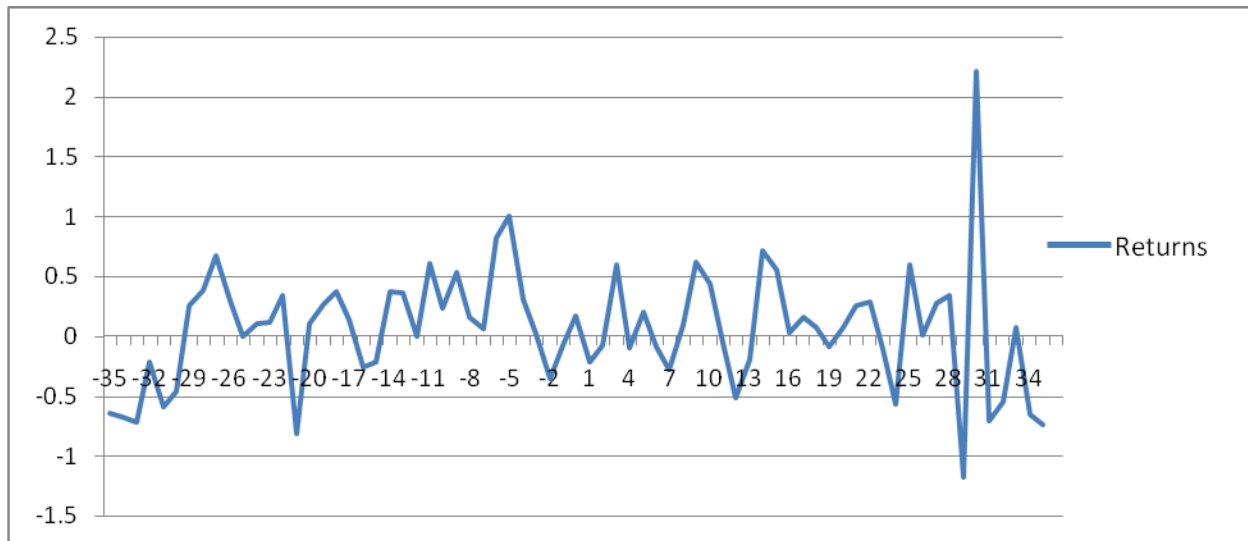**Figure 4.10: Cumulative abnormal returns for Eid- al adha 2013**
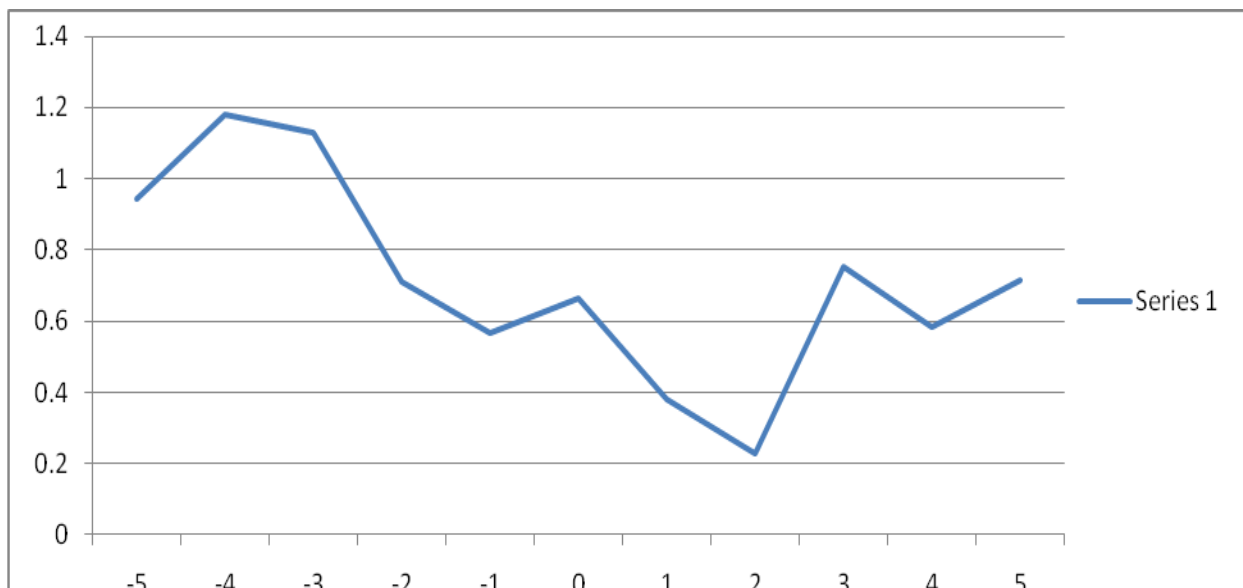
The cumulative returns for Eid- al adha 2013 from the figure above show that returns were generally on a downward trend. Eid- al adha 2013 had some impact on the returns as seen in the sudden change of direction in the returns just at the event day.

Table 4.6: Statistics for Muharram 2014

	Mean	Std deviation	Skewness	Kurtosis	Range
$NR_{i,t}$	.01655212	.6162752769	.484	.963	3.2452227
$AR_{i,t}$	-.18119142	502032624	-.640	.098	1.647369

The statistics for Muharram 2014 reveal a high sensitivity in returns to market information as seen in the high standard deviation of 0.61 for normal returns and 0.50 for abnormal returns relative to mean of 0.166 for normal returns and -0.18 for abnormal returns. The normal returns were skewed towards 0.484 while abnormal returns were skewed towards -0.64.

Figure 4.11: Graph of Mean Daily Returns for Muharram 2014.
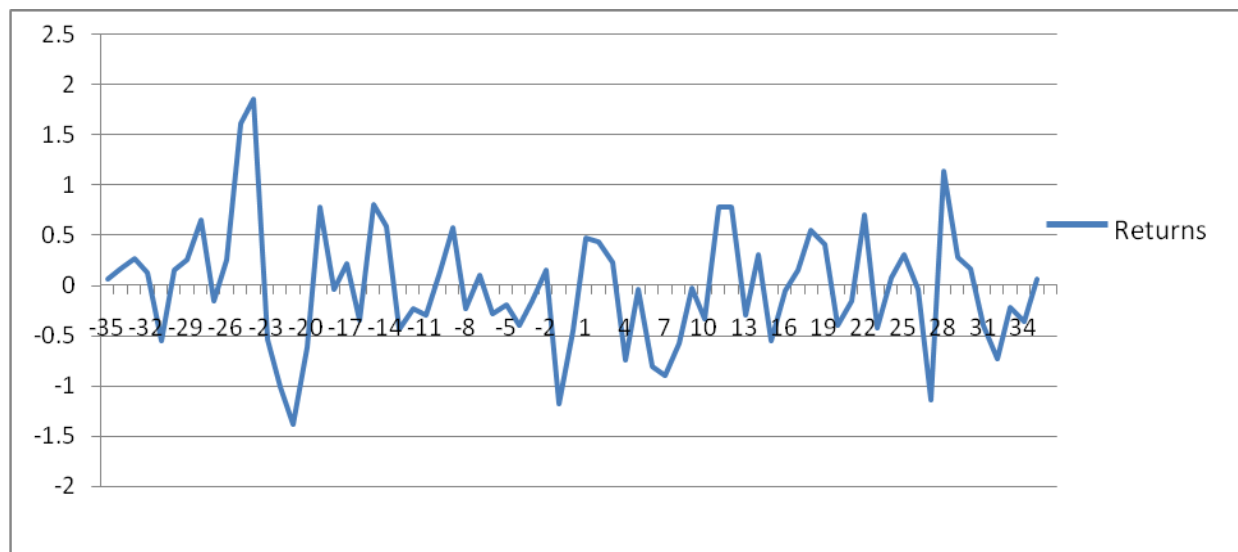
The above graph shows that there was a high fluctuation in returns during the whole event period. There is a drop in returns in the run up to the event window and reach a low of about -

1.25% on the event day followed by a sharp increase after the event day to 0.5%. The graph of cumulative abnormal returns reveals the trend below

Figure 4.12: Cumulative abnormal returns for Muharram 2014
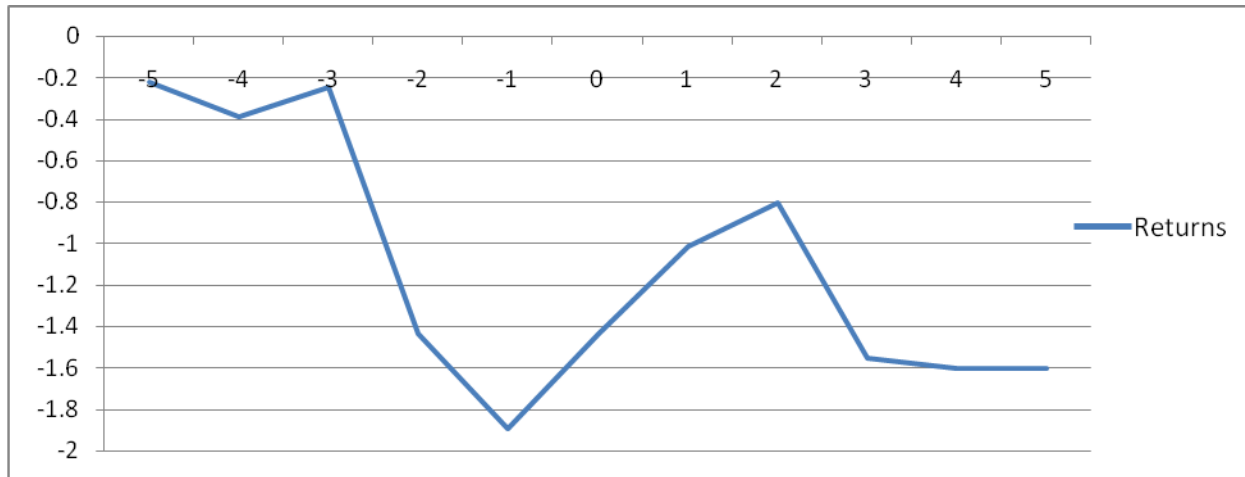
From the graph above, Muharram 2014 had some considerable impact on stock returns as seen in the sudden change of direction during the event day. The general impact on returns shows a negative trend.

Table 4.7: Statistics for Mawlid 2014

	Mean	Std deviation	Skewness	Kurtosis	Range
$NR_{i,t}$	-.07348038	.58487825	-.300	1.700	3.435926
$AR_{i,t}$	.56143311	.60442656	-.630	-.256	1.901284

The descriptive statistics for Mawlid 2014 show that the normal returns had a mean of -0.073 and a standard deviation of 0.584 which is relatively high indicating that the market statistics were very sensitive to any change in the market. The abnormal returns had a mean of 0.561 and a standard deviation of 0.604 which is also high meaning that the event window was equally sensitive to changes in the market.

Figure 4.13: Graph of Mean Daily Returns for Mawlid 2014.
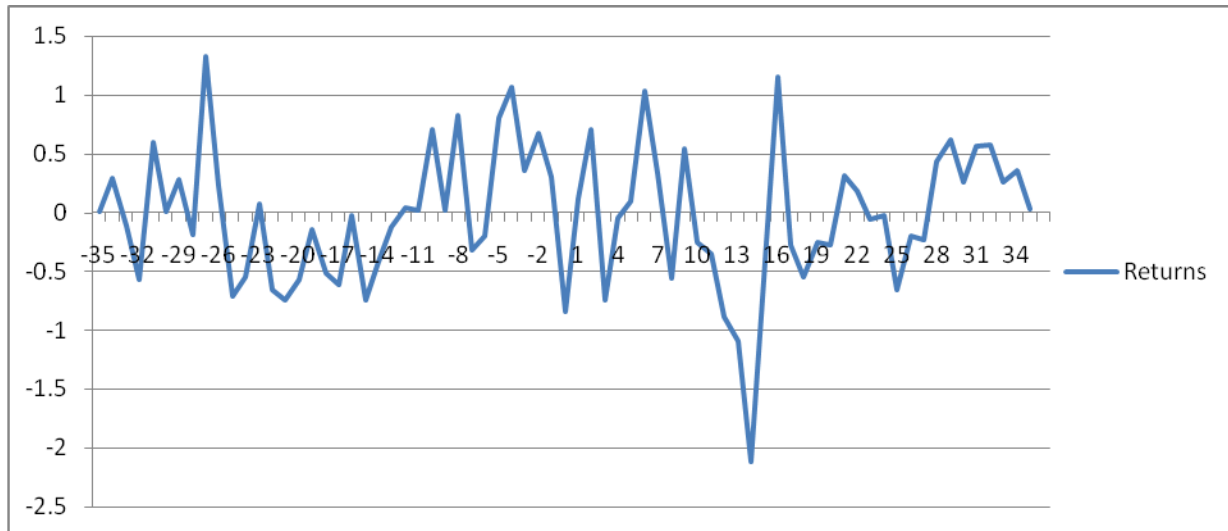
The graph above shows that returns were fluctuating upwards shortly before the event window and at the event widow the fluctuation increase but not in any general direction. They were going both down and up.

Figure 4.14: Cumulative abnormal returns for Mawlid 2014.
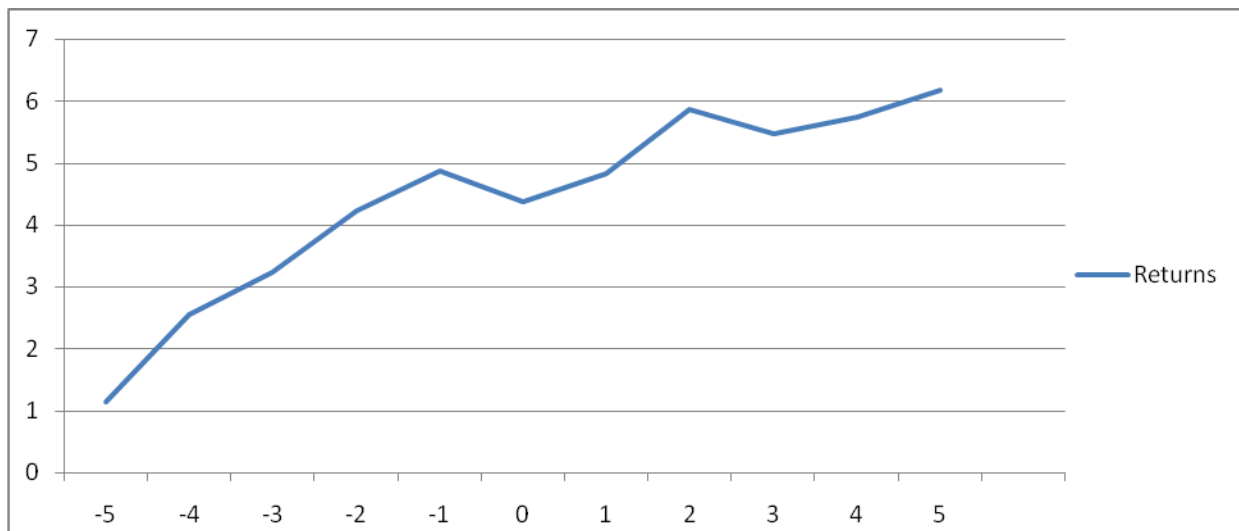
The graph of cumulative abnormal returns for Mawlid 2014 above shows that there was a general positive impact on the returns. The impact however was not as big as there are no big

leaps in the graph around the event day. A light decrease can however be observed as the general

upward trend slightly bends at the event day and continues to rise again.

Table 4.8: Statistics for when Ramadan begins June 29 2014

	Mean	Std deviation	Skewness	Kurtosis	Range
$NR_{i,t}$	.01235643	.421875283	.270	-.148	1.994300
$AR_{i,t}$	.05548968	.546555381	.352	-.251	1.833419

Market statistics for when Ramadan begins show a high sensitivity. The normal returns have a

mean of 0.01 and a standard deviation of 0.42. This is very high indicating the sensitivity of the

market to changes in the information available in the market. Similarly the abnormal returns

have a mean of 0.06 and a standard deviation of 0.55 which also indicate high market sensitivity.

Figure 4.15: Graph of mean daily returns for when Ramadan begins 2014
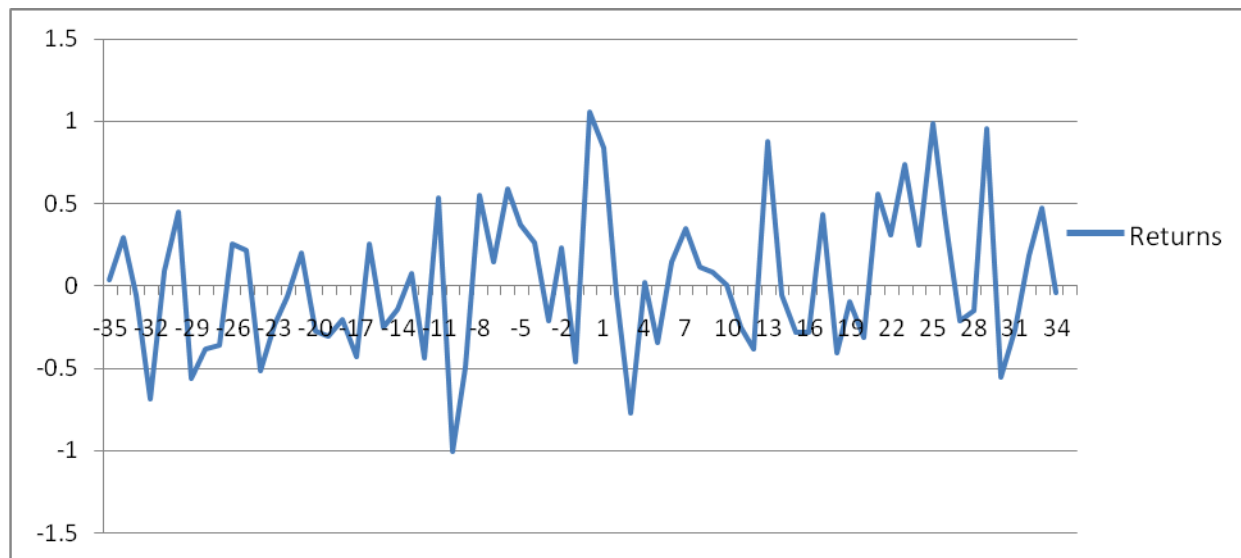
From the graph above it can be deduced that returns in the period before the event window were

fluctuating but not in any general direction. In the event window there is reduction in fluctuation

in the run up to the event and at the event day there is a big increase which is followed by a

considerable decrease in fluctuations.

Figure 4.16: Graph of cumulative abnormal returns for when Ramadan begins 2014
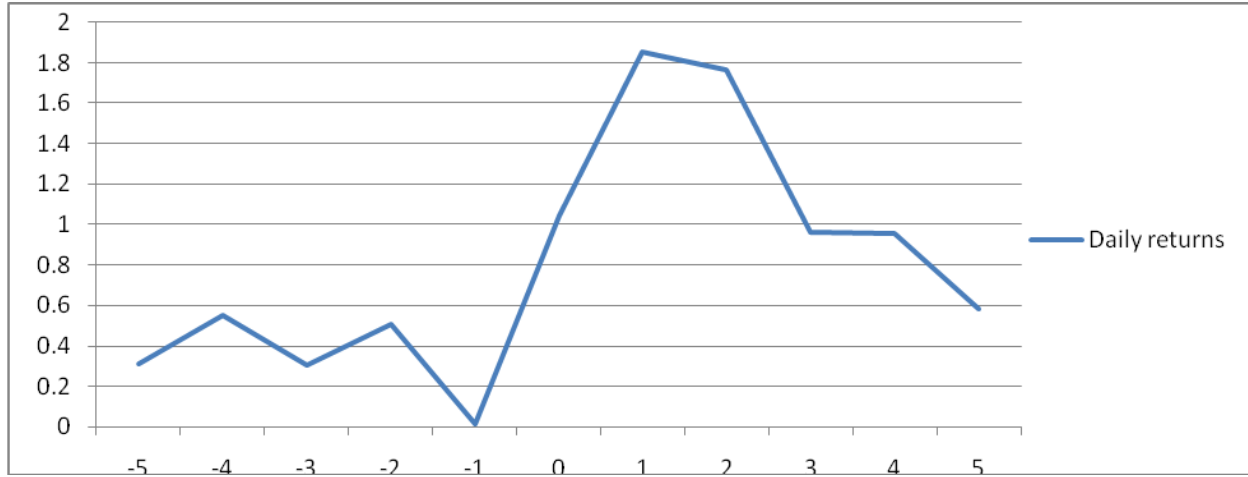
The above graph shows that the beginning of Ramadan 2014 had a very big impact on stock returns from the sudden change in returns just on the eve of the event day. The general trend in returns during the event period reveals that stock returns were fluctuating downwards at a low pace only to change direction to the positive all over a sudden followed by another sudden negative change shortly after.

Table 4.9: Statistics ForEidulFitr 2014

	Mean	Std deviation	Skewness	Kurtosis	Range
$NR_{i,t}$	.09469950	.418722612	-.050	.227	2.063766
$AR_{i,t}$	.04760109	.477343197	.322	-1.244	1.392400

Market statistics from the above table show that the normal returns had a mean of 0.09 and a standard deviation of 0.42, similarly the abnormal returns had a mean of 0.05 and a standard deviation of 0.48. These standard deviations are high indicating that markets were very sensitive to any new information that was coming into the market.

Figure 4.17: Graph of mean daily returns for Eidulfitr 2014
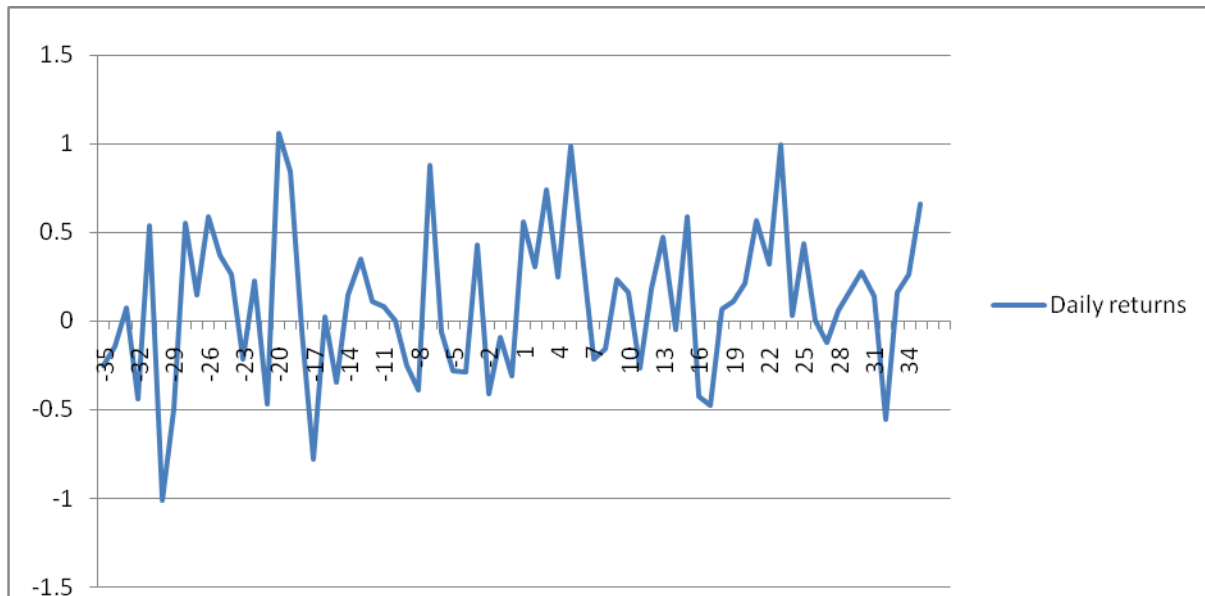
From the graph above the mean daily returns were fluctuating but not in any general direction

Figure 4.18: Graph of cumulative abnormal returns for Eidulfitr 2014
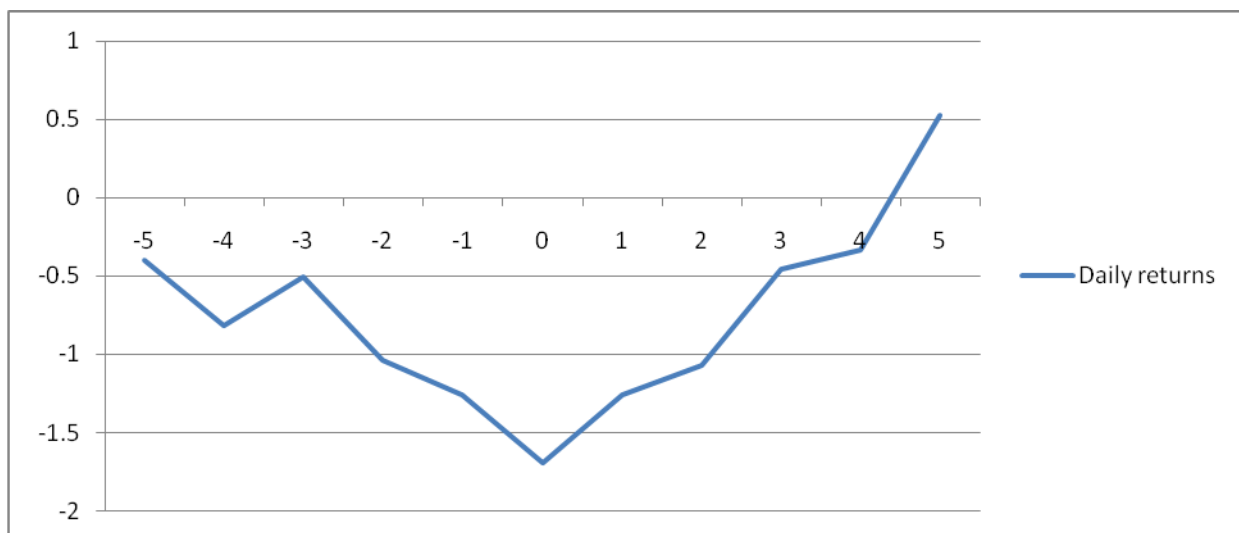
The graph of cumulative abnormal returns shows that Eidulfitr 2014 had a very big impact on stock returns. As seen above the cumulative returns were generally decreasing only to suddenly change to a positive direction at the event day and progressively increase from there to the end of the event window.

Table 4.10: Statistics for Eid al adha 2014

|	Mean	Std deviation	Skewness	Kurtosis	Range
$NR_{i,t}$	.01528610	.592797705	.412	1.376	3.245223
$AR_{i,t}$	.12830750	.467640194	.182	-1.662	1.252028

Market statistics for Eid- al-adha show a high sensitivity. The normal returns have a mean of 0.05 and a standard deviation of 0.59. This is very high indicating the sensitivity of the market to changes in the information available in the market. Similarly the abnormal returns have a mean of 0.12 and a standard deviation of 0.46 which also indicate high market sensitivity.

Figure 4.19: Graph of mean daily returns for Eid-al-Adha 2014
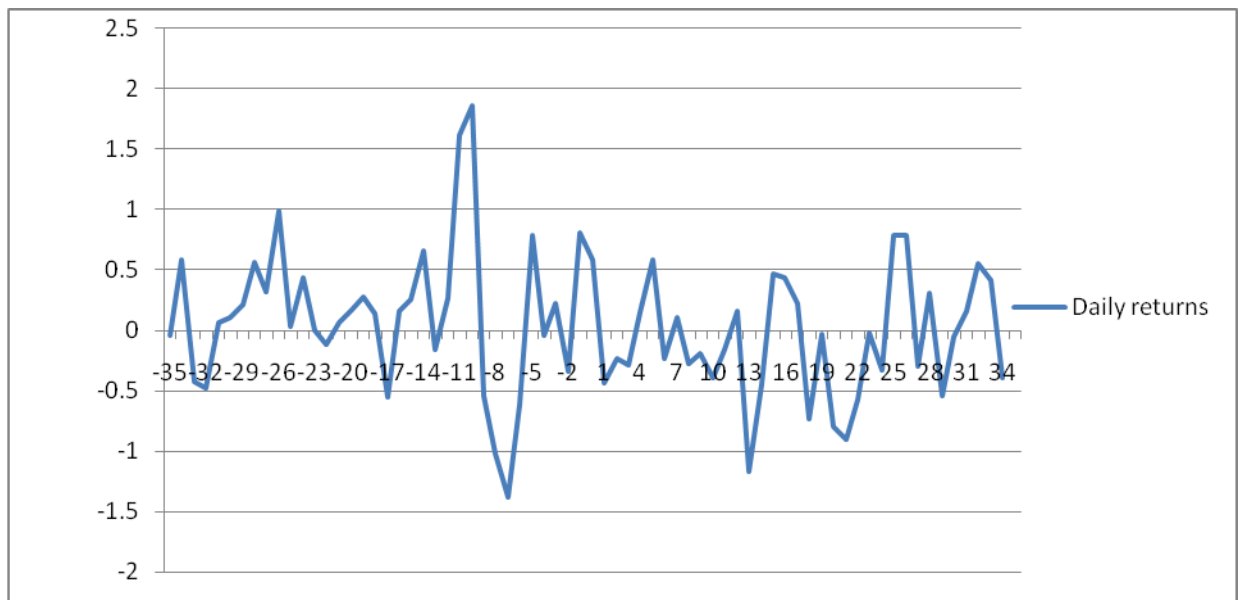
From the graph above the returns were fluctuating shortly before the event period and dropped just to the run up of the event period. There is a high fluctuation in returns at the event window in a downward direction.

Figure 4.20: Graph of cumulative abnormal returns for Eid –al-Adha 2014
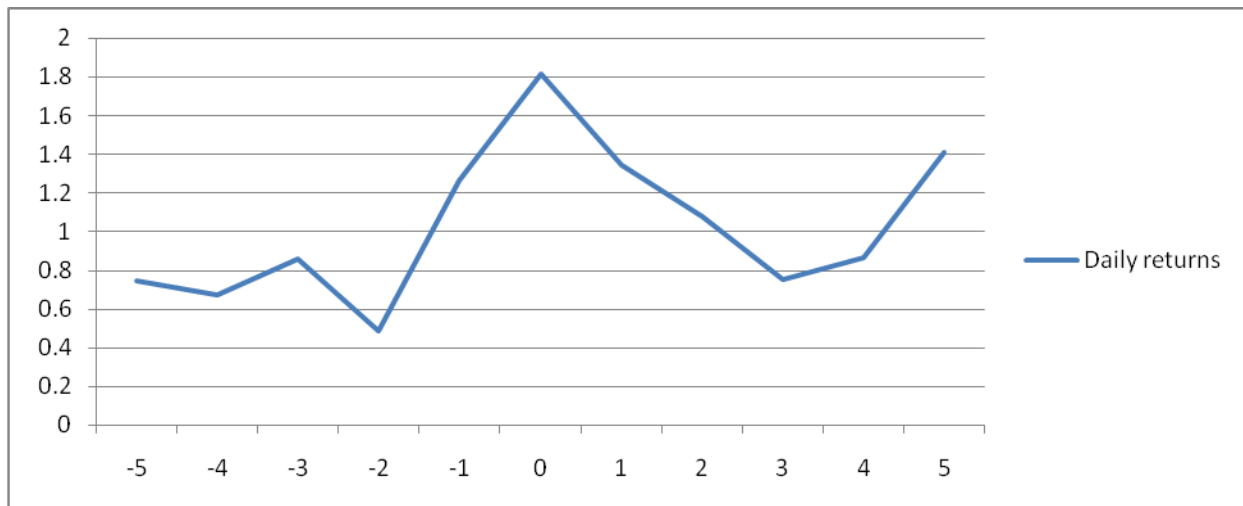
From the graph above the cumulative abnormal returns were going up and down at the beginning of the event window and shortly before the event day the returns suddenly changed to a positive direction to reach peak at the event day and suddenly change to negative direction to just before the end of the event period and started to increase again. The returns exhibit a certain pattern.

4.3 Summary and Findings

The study intended to find if there is a significant effect on stock returns as a result of Muslim holidays for the year 2013 and 2014 by employing event study methodology. The study employed the comparative period return approach.

The results from the above discussion have shown that some Muslim holidays impact significantly on stock returns while others do not. Muharram 2013 has a small impact on stock returns where returns drop pre-event day and rise again but with small margins. Mawlid al Nabi 2013, beginning of Ramadan 2013 and Mawlid al Nabi 2014 results show that these holidays did not impact greatly on the stock returns. However Eid-ulFitr 2013, eid-ul-adha 2014,

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Muhrram2014, beginning of Ramadan 2014, Eid-ul-fitr 2014 and Eid-ul-adha 2014 results show

that there was a considerable change in daily stock returns brought about by these holidays.

CHAPTER FIVE

DISCUSION, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the discussions from the finding in the previous chapter. It shall therefore be structured to present the discussions and conclusions drawn. The chapter will also highlight on the limitations of the study and finally recommendation for further studies.

5.2 Discussion

In chapter four it was found that four out of the Muslim holidays studied did not show much impact on daily stock returns while the remaining six holidays showed some impact. The study of the effect of Muslim holidays on stock returns was intended to examine if investors are rational that is if they correctly update their information as and when it becomes available in the market.

The findings above show that this is not the case, implying that investors are influenced by their moods and feelings. Muslim holidays are strict religious practices that greatly affect investor sentiments and moods. Muharram which is the Islamic New Year is celebrated quietly and may be that is why there was no impact felt for the year 2013, same case applies to Mawlid holiday for both years whose effect on stock returns is not so pronounced. The beginning and end of Ramadan are highly publicized and so these will have an impact on returns. There is no much effect of when Ramadan begins for 2013, however for 2014 it is characterized by a decrease in cumulative stock returns. This can be attributed to the fact that when Muslims start fasting, the general level of activity slows down possibly as a result of low levels of energy brought about by

the fast.Eidulfitr which symbolizes the end of Ramadan has shown significant effect on returns for both years. This holiday's result reveal an increase in cumulative abnormal returns which can be attributed to happy investor moods as they make decision to invest after they successfully complete the fast which they believe comes with a blessing. Eid-ul-Adha holiday 2013 shows a reduction in cumulative returns few days to the event day. During this holiday, Muslims spend a considerable amount of money in purchasing good clothes and preparing feasts thus the reduction in returns could be as a result of people selling their shares so that they can have money to celebrate the holiday. For 2014 however results show an increasing cumulative returns up to just after the event day when they start going down. This could be attributed to less

Cash held by people after spending on this holiday thus the buying pressure at the exchange is not created.

5.3. Conclusions

The study sought to find out if there is an effect of Muslim holidays on stock returns at the NSE. Event study methodology was employed and data for two years, 2013 and 2014, of the of the NSE 20 share index movements in prices collected. This data was analysed using spreadsheets like excel and fed into SPSS (Statistical packages for social sciences) for further analysis.

From the results four out of the ten holidays studied show no effect while six of the holidays

Show some effect.

 From the above discussion it can be deduced that a stock market anomaly exists at the NSE

5.4 Policy Recommendations

There is an anomaly at the NSE which can be taken advantage of by investors to make profitable trading. Thus Muslim holidays affect stock returns of companies listed at the NSE implying that

our stock market is far from being efficient. This calls for the relevant regulatory authorities to put measures in place and ensure that security markets are efficient.

5.5 Limitations of the study

The Islamic calendar dates are not fixed on the Gregorian calendar hence approximations were made for these dates and so this could affect the findings.

There could be an overlap of other empirical factors that affect the market which could have had confounding effects on the results. For example the Islamic new year of 2014 fell on January 5, this can be affected by the January effect. Others fell an almost end months and Fridays which could be affected by the turn of the month and weekend effect. This can have affected the findings.

The study only studied two years which may not be long enough for robust results.

5.6 Recommendations for further research

The study was only done for two year, other studies can be carried out to cover longer periods.

This study was only done on the NSE 20 share index, another study can be carried on to cover any other index such as the AIG.

This study concentrated on the effect of Muslim holidays, other studies can evaluate the effect Christian holidays separately or secular holidays alone.

This study used event study methodology, other studies can be carried out which will use other methodologies like regression analysis and see if the results are the same.

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APPENDICES

Appendix I:

Companies Listed on the Nairobi Stock Exchange

Agricultural

i) Unilever Tea Kenya Limited

ii) Kakuzi Limited

iii) Rea Vipingo Plantations Limited

iv) Sasini Tea and Coffee Limited

Commercial and Services

v) Car and General (K) Limited

vi) CMC Holdings Limited

vii) Hutchings Biemer Limited

viii) Kenya Airways Limited

ix) Marshalls (EA) Limited

x) Nation Media Group

xi) T.P.S Limited

xii) Uchumi supermarket Limited

Finance and Investment

i) Barclays Bank Limited

ii) C.F.C Bank Limited

iii) Diamond Trust Bank Kenya Limited

iv) Housing Finance Company Limited

v) I.C.D.C Investments Company Limited

vi) Jubilee Insurance Company Limited

vii) Kenya Commercial Bank Limited

viii) National Bank of Kenya Limited

ix) N. I .C Bank Limited

x) Pan Africa Insurance Holdings Limited

xi) Standard Chartered Bank Limited

Industrial and Allied

i) Athi River Mining Limited

ii) B.O. C Kenya Limited

iii) Bamburi Cement Limited

iv) British American Tobacco Kenya Limited

v) Carbacid Investment Limited

vi) Crown Berger Limited

vii) Olympia Capital Holdings Limited

viii) E.A Cables Limited

ix) E.A Portland Cement Limited

x) E.A. Breweries Limited

xi) Firestone E.A. Limited

xii) Kenya Oil Co. Limited

xiii) Mumias Sugar Company Limited

xiv) Kenya Power and Lighting Limited

xv) Total Kenya Limited

xvi) Unga Group Limited

Alternative Investment

i) A. Baumann and Company Limited

ii) City Trust Limited

iii) Eaagads Limited

iv) Express Limited

v) Wiliamson Tea Kenya Limited

vi) Kapchorua Tea Company Limited

vii) Kenya Orchards Limited

viii) Limuru Tea Company Limited

ix) Standard Group Limited

Appendix 2:

NSE Index Movements for Each Holidays Event period.

	1	2	3	4	5	6	7	8	9	10
-	4749.32	4056.41	4978.65	4713.39	4774.58	5160.32	5043.58	4963.76	4835.69	5040.56
	4710.36	4057.39	4983.54	4706.8	4742.15	5168.8	5058.16	4978.2	4828.65	5070.13
	4715.34	4022.64	4956.95	4680.33	4708.05	5182.89	5052.63	4975.39	4832.09	5048.69
	4728.03	4037.99	4965.98	4641.07	4697.75	5190.01	5024.08	4940.99	4811	5024.64
	4745.47	4012.05	4953.03	4602.4	4669.85	5161.21	5053.91	4945.33	4836.71	5028.06
	4751.82	4031.72	4967.75	4584.5	4648.21	5169.5	5054.21	4967.57	4787.94	5033.69
	4739.42	4031.7	4987.16	4598.16	4659.85	5182.98	5068.36	4939.49	4764.11	5044.4
	4729.3	4056.18	4996.07	4579.21	4677.6	5217.25	5058.83	4920.61	4790.38	5072.87
	4746.71	4067.21	5006.96	4561.74	4708.95	5209.1	5125.74	4902.62	4797.42	5089.16
	4764.12	4085.7	4986.93	4562.83	4722.89	5222.87	5137.21	4915.06	4825.52	5139.39
	4768.03	4124.06	4985.48	4574.1	4722.91	5307.52	5100.88	4925.58	4843.36	5140.92
	4793.2	4127.6	4984.33	4585.42	4727.66	5406.39	5072.87	4899.92	4856.15	5163.21
	4804.48	4119.1	4989.04	4576.21	4732.92	5377.29	5076.47	4888.36	4845.6	5163.28
	4830.38	3800.62	4962.66	4600.45	4749.32	5322.65	5042.94	4885.29	4856.6	5157.15
	4834.07	4119.1	4957.08	4640.5	4710.36	5249.07	5005.45	4895.13	4834.02	5160.32
	4841.33	4109.28	4886.64	4658.46	4715.34	5216.96	4976.77	4881.56	4885.04	5168.8
	4881.44	4122.74	4862.69	4713.64	4728.03	5257.81	4969.32	4866.71	4925.86	5182.89
	4930.79	4122.22	4838.01	4746.26	4745.47	5255.62	4943.64	4856.54	4922.99	5190.01
	4946.02	4133.02	4806.52	4786.47	4751.82	5267.54	4913.55	4835.53	4884.69	5161.21
	4947	4140.43	4761.89	4778.88	4739.42	5249.65	4912.36	4847.83	4885.71	5169.5
	4929.62	4159.25	4701.22	4800.16	4729.3	5292.42	4876.05	4835.69	4868.81	5182.98
	4925.96	4191.05	4705.19	4807.53	4746.71	5323.49	4855.5	4828.65	4876.01	5217.25
	4934.07	4212.49	4713.39	4807.41	4764.12	5300.21	4849.3	4832.09	4892.84	5209.1
	4923.47	4247.74	4706.8	4790.67	4764.12	5287.87	4851.06	4811	4898.29	5222.87
	4919.17	4305.03	4680.33	4787.78	4793.2	5272.53	4851.84	4836.71	4902.18	5307.52

4948.77	4319.73	4641.07	4796.3	4804.48	5280.46	4885.87	4787.94	4902.3	5406.39
4943.83	4349.87	4602.4	4801.63	4830.38	5311.27	4886.52	4764.11	4889.99	5377.29
4953.84	4413.97	4584.5	4793.82	4838.07	5299.12	4926.57	4790.38	4870.96	5322.65
4949.65	4474.68	4598.16	4796.97	4841.33	5304.86	4910.74	4797.42	4913.61	5249.07
4935.91	4553.25	4579.21	4787.56	4881.44	5290.09	4901.12	4825.52	4910.6	5216.96
4940.32	4545.91	4561.74	4781.4	4930.79	5279.88	4940.51	4843.36	4896.77	5257.81
4970.88	4500.09	4562.83	4777.12	4946.02	5259.18	4993.12	4856.15	4882.73	5255.62
4992.88	4471.21	4574.1	4783.4	4947	5251.09	5010.93	4845.6	4903.68	5267.54
4989.97	4461.32	4585.42	4783.12	4929.62	5259.43	5044.35	4856.6	4883.75	5249.65
4946.42	4417.17	4576.21	4801.03	4925.96	5197.67	5059.52	4834.02	4879.09	5292.42
4954.69	4485	4600.45	4792.87	4934.07	5174.41	5017.20	4885.04	4863.87	5323.49
4990.24	4379.71	4640.5	4805.34	4923.47	5198.89	5023.05	4925.86	4891.03	5300.21
5017.78	4403.38	4658.46	4810.29	4919.47	5221.44	5058.51	4922.99	4906.09	5287.87
5019.18	4402.75	4713.64	4799.06	4948.77	5233.42	5021.07	4884.69	4942.28	5272.53
5027.28	4412.61	4746.26	4812.27	4943.88	5194.89	5018.58	4885.71	4954.51	5280.46
5031.02	4416.6	4786.47	4842.59	4953.84	5193.11	5023.12	4868.81	5003.36	5311.27
5026.82	4420.79	4778.88	4851.54	4949.65	5151.46	5075.06	4876.01	5022.36	5299.12
5030.76	4450.78	4800.16	4840.69	4935.91	5105.11	5092.16	4892.84	5011.51	5304.86
5043.58	4522.53	4807.53	4830.5	4940.32	5075.93	5063.98	4898.29	5003.78	5290.09
5058.16	4561.16	4807.41	4814.12	4970.88	5074.93	5091.3	4902.18	5015.57	5279.88
5052.63	4588.42	4790.67	4821.5	4992.88	5058.41	5078.13	4902.3	5023.49	5259.18
5024.08	4611.03	4787.78	4806.48	4989.97	5098.4	5060.53	4889.99	5010.13	5251.09
5053.91	4633.48	4796.3	4774.58	4964.42	5138.46	5015.67	4870.96	5019.28	5259.43
5054.21	4648.09	4801.63	4742.15	4954.69	5123.45	4960.99	4913.61	5042.9	5197.67
5068.36	4637.54	4793.82	4708.05	4990.24	5139.37	4856.15	4910.6	5040.56	5174.41
5058.83	4614.75	4796.97	4697.75	5017.78	5111.47	4828.34	4896.77	5070.13	5198.89
5125.74	4573.88	4787.56	4669.85	5019.18	5108.84	4883.9	4882.73	5048.69	5221.44
5137.21	4551.06	4781.4	4648.21	5027.28	5117.08	4870.43	4903.68	5024.64	5233.42
5100.88	4502.75	4777.12	4659.85	5031.02	5145.28	4843.9	4883.75	5028.06	5194.89
5072.87	4505.59	4783.4	4677.6	5026.82	5166.45	4831.8	4879.09	5033.69	5193.11

5076.47	4477.89	4783.12	4708.95	5030.76	5145.98	4818.28	4863.87	5044.4	5151.46
5042.94	4463.65	4801.03	4722.89	5043.58	5137.94	4833.36	4891.03	5072.87	5105.11
5005.45	4469.19	4792.87	4722.91	5058.16	5174.02	4842.22	4906.09	5089.16	5075.93
4976.77	4469.19	4805.34	4727.66	5052.63	5152.26	4839.52	4942.28	5139.39	5074.93
4969.32	4518.59	4810.29	4732.92	5024.08	5156.33	4838.47	4954.51	5140.92	5058.41
4943.64	4510.47	4799.06	4749.32	5053.91	5172.57	4806.73	5003.36	5163.21	5098.4
4913.55	4533.82	4812.27	4710.36	5054.21	5170.57	4797.2	5022.36	5163.28	5138.46
4912.36	4546.83	4842.59	4715.34	5068.36	5111.37	4786.18	5011.51	5157.15	5123.45
4876.05	4585.07	4851.54	4728.03	5085.83	5169.88	4806.69	5003.78	5160.32	5139.37
4855.5	4658.64	4840.69	4745.47	5025.74	5184.92	4836.25	5051.57	5168.8	5111.47
4849.3	4796.33	4830.5	4751.82	5137.21	5193.96	4848.71	5023.49	5182.89	5108.84
4851.06	4985.91	4814.12	4739.42	5100.88	5173.77	4875.82	5010.13	5190.01	5117.08
4851.84	4911.45	4821.5	4729.3	5072.87	5135.97	4903.48	5019.28	5161.21	5145.28
4885.87	4831.85	4806.48	4746.12	5076.47	5124.8	4915.85	5042.9	5169.5	5166.45
4886.52	4774.04	4774.58	4764.12	5042.94	5106.67	4933.41	5040.56	5182.98	5145.98
4926.57	4727.04	4742.15	4768.03	5005.45	5091.3	4935.01	5070.13	5217.25	5137.95

Dates for Muslim Holidays

The following are the dates for the Muslim holidays for year 2013(a. h 1434) and 2014 (a.h 1432)

Year (Hegira)	Muharram (Islamic new year)	Mawlid al-Nabi (Muhammad's birthday)	Ramadan begins	Eid al-Fitr (Ramadan ends)	Eid al adha (Festival of Sacrifice)
2013 (A.H 1434)	Nov. 5, 2013	Jan. 24, 2013	July 9, 2013	Aug. 8, 2013	Oct. 15, 2013
2014 (A.H 1435)	Oct. 25, 2014	Jan. 13, 2014	Jun. 28, 2014	July 29, 2014	Oct. 4, 2014