HOLIDAY EFFECT AND STOCK MARKET RETURNS OF COMMERCIAL BANKS LISTED AT NAIROBI SECURITIES EXCHANGE, KENYA

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ABSTRACT

This study's main objective is to ascertain the holiday effect and stock market returns of commercial banks listed at Nairobi Securities Exchange. The specific objective is to determine the existence of the Pre-holiday effect, post-holiday effect, disparities between national and international holiday returns, and disparities between the pre-and post-holiday returns of financial firms listed at Nairobi Securities Exchange. The study was analyzed as an event study with a focus on 8 holidays namely: New Year's, Easter Holiday, Labor Day, Madaraka Day, Mashujaa Day, Jamhuri Day, Christmas holiday, and Eid-all-Fitr holiday using the 10 financial companies listed at the NSE over five years (2017-2021). The average returns for normal days for the period 2017-2021 was found to be 0.004301. Based on the findings, it is concluded that there exists a pre- and post-holiday effect as the mean returns are lower than the normal holiday returns. Since the mean returns for pre- and post-holiday are different, we conclude that there exists a discrepancy between the pre- and post-holiday returns. The returns for the national holidays were significantly higher than the international holidays confirming that the national holidays were most affected by the holiday compared to the international holidays.

INTRODUCTION

Background of the Study

Based on the efficient market hypothesis (EMH), Fama (1970) posits that securities display all available statistics and therefore contradict the probability of buyers to obtain extraordinary returns by taking advantage of any mispricing of the asset. Although empirical evidence shows that speculation began to show errors and styles that could not be defined by the theories of the time. One of the first errors noted in the financial markets was calendar anomalies, including the effect of holidays (Chia, Lim, Ong & Teh, 2015). Holiday anomalies occur both a day earlier than the holiday and a day later after the holiday in what was reported as the pre-holiday anomaly and the post-holiday anomaly, respectively.

Fields (1934) first described the concept of the holiday anomaly after observing an unbalanced regression to the day before the holiday. This paved the way for other researchers, including Marrett and Worthington (2009), who found evidence of the effect of public holidays on stock market returns.

Global Perspective of Holiday Effect and Stock Market Returns

According to Yingqin (2019), from early 2000 to late 2014, an experimental analysis to test the impact of holidays in 7 Asian markets including mainland China, Hong Kong, Taiwan, Singapore, Malaysia, Japan, and South Korea.Regression The analysis presented a note that the holiday effect of holidays leading up to Chinese New Year is strong in mainland China, Hong Kong, Taiwan, Malaysia, Japan, South Korea and Singapore.

A Warner (2020) study of the impact of the Chinese New Year on the market found that trading volumes dropped significantly a few weeks before the market closed, before bottoming out on the first trading day after the break. bottom. The data shows a slowdown in trading seen in the trading days before the exchange closed, which would take about seven trading days to recover after the exchange reopened.

According to a study conducted in India by Cristi, Iqbal, Birau, and Pinto (2020), the current study using daily price-to-earnings data from Ruby Mills and Mafatlal Industries found that the Indian stock market during the period It is suggested that they tested the effect of Between 2010 and 2019. Cristi et al. (2020) stated that for Ruby Mills, the average yield before the holidays was higher than the yield on the rest of the days, which is statistically significant. Mafatlal Industries reported higher earnings before the holiday period during the study period, but they were not significant. They also found that the average post-holiday return was higher than the average return for the rest of the day for both selected stocks, but testing confirmed that this was not statistically significant.

The results of the study ruled out the existence of post-holiday effects for both selected stocks. It turns out that the rate of return is high. Finally, the conclusions were that the study failed to identify significant post-holiday effects, whereas pre-holiday effects were only detectable by Ruby Mills during the study period. Additionally, the research can be extended to other textile stocks traded on the Bombay Stock Exchange.

Regional Perspective of Holiday Effect and Stock Market Returns

A study by Batsirai, Gisele, and Choga (2021) on the impact of calendar anomalies on South African stocks shows that calendar anomalies in stock markets play an important role in explaining stock return dynamics. The purpose of their study was to determine whether weekday, month end, and January seasonality exists in the South African stock market. The Johannesburg Stock Exchange index data includes the top 40, all stocks, materials, industrials, consumer goods, healthcare, consumer services, telecommunications, financials and technology, covering the period 1995-2018 in a pooled panel with a robust Arellano standard error model.

The existence of calendar anomalies in the South African stock market disproves the efficient market hypothesis. The study advises investors to trade the day after the holiday because the return on investment is higher.

Another study by Fafali, Andoh and Kuttu (2019) on the impact of public holidays on the stock market in Ghana found that public holidays in Ghana, defined as public holidays that are celebrated and recognized only in Ghana, include pre-banking and post-banking - public holidays. Indicates that there is a holiday effect. In contrast, public holidays outside Ghana are celebrated both nationally and internationally, and only pre-holiday effects have been documented. Overall, the results indicate that the only non-Ghana-specific post-holiday return is insignificant at 5%. The highest average return was recorded on the Ghana-specific day before the public holiday, followed by the non-Ghana-specific day before the public holiday and the Ghana-specific day after the public holiday with the lowest average return. This shows that investors can take advantage of Ghana's unique pre-holiday to factor in the impact of the holiday season. In general, investors are usually attracted to higher risks with higher returns. However, the results of this study suggest that the significant anomalous returns observed before and after the holidays may have contributed to existing investors in the Ghana Stock Exchange taking on higher risk due to the risk measures taken during the regular holidays.

Local Perspective of Holiday Effect and Stock Market Returns

A study by Omar (2015) confirmed the existence of a post-holiday effect on NSE, with a higher proportion of post-holiday positive returns in non-parametric tests. The results of the multiple regression analysis confirm a statistically significant negative relationship between post-holiday presence and anomalous returns. This finding suggests that market yields tend to normalize after the holidays.

Another study by Nderitu (2020) confirmed the presence of post-holiday effects in NSE, with a higher proportion of post-holiday positive returns in non-parametric tests. The results of the multiple regression analysis confirm a statistically significant negative relationship between post-holiday presence and pre-holiday returns. This finding suggests that market yields tend to normalize after the holidays. The nonparametric test also confirms that the proportion of positive returns after holidays is large, confirming the existence of a post-holiday effect on the NSE. The results of the multiple regression analysis confirm a statistically significant negative relationship between post-holiday presence and anomalous returns. This finding suggests that market yields tend to normalize after the holidays.

Commercial Banks listed at Nairobi Securities Exchange

Machiraju (2008) defines commercial banks as financial institutions providing mainstream financial products. Commercial banks facilitate domestic and foreign trade through bill discounting. Kenya has 38 commercial banks (CBK, 2022). 10 of the 38 licensed banks in Kenya are listed on the stock exchange. These include ABSA Bank Kenya Plc, Stanbic Holdings Ltd, I & M Holdings Plc, Equity Group, Diamond Trust Bank Kenya Ltd, KCB Group Plc, HF Group Plc, NCBA Group Plc, Standard Chartered Bank Kenya Ltd, Holdings Plc, The Co - operational Bank Kenya Corporation

Statement of the Problem

While the NSE has taken various steps to improve returns on its securities, inefficiencies are common and investors and other market participants are likely to benefit from market inefficiencies (Kuria & Riro, 2013).

Previous studies conducted both in developed and developing economies have continued to give conflicting results on the existence of seasonal anomalies in the stock markets. Atala (2015) studied the effect of holidays on Muslim holidays, since other holidays affect the stock returns differently, the results of this study cannot be used as a representative of all public holidays. Rasugu (2005) Confirmed that there exists no holiday effect on NSE. Rasugu's Study was done close to two decades ago and there has been changes in the economy and NSE together with the covid pandemic, so the effect of holidays needs to be restudied again. It is still inconclusive whether the holiday effect exists. According to the random walk theory, stock price is random, and cannot be predicted using past stock movements. According to the efficient Market Hypothesis, the holiday information should have already been included in the stock price, it is expected that the stock price will not change even when the holiday approaches. This is because the days before the holiday are less liquid and there is less cash and therefore people can sell their stocks to make more money before the holiday. Investors tend to cut shares before the holidays because of their negative attitude towards new information. Investors tend to sell stock to increase supply before the holidays. The investors gain a predictive power and use a trading strategy of buying stocks before the holidays when everyone is selling stocks and selling stocks after the holidays when everyone is buying stocks (Rasugu, 2005). According to Hemed (2015) research done on stock market anomalies at the NSE have continued to demonstrate a volatility of the stock hence the need to retest. According to the global economy (2021) The average market returns for Kenya was 18.41%-2021, -5.91%-2020, -9.52%-2019,13.2%-2018,5.61%-2017, -10.64%-2016 &3.62%-2015. This demonstrates a volatility of stocks with no pattern which could be a risk to investors.

The study focused on Holiday anomaly because it is the most predominant market anomaly (Batsirai, Gisele& Choga ,2021). Previous studies conducted both in developed and developing economies have continued to show that Investors can make abnormal returns if they use a trading strategy.

Studies have continued to show that investors make abnormally negative returns after a holiday which is against the EMH, this is according to Hemed (2015), Nderitu (2020) and Omar (2015).
Based on the previous studies, several questions remain unanswered, what is the impact of holidays on stock market returns of Commercial Banks listed at the NSE? Is there any discrepancy between holiday returns from state holidays and international holidays? The study sought to answer these questions.

Objectives of the study

The study objectives are classified into general and specific objectives.

General Objective

The main purpose of this study is to ascertain the holiday effect and stock market returns of commercial banks listed at Nairobi Securities Exchange, Kenya.

Specific Objectives

The specific objectives of this study are:

i. To determine the pre-holiday effect and stock market returns of commercial banks listed at Nairobi Securities Exchange, Kenya.
ii. To examine the post-holiday effect and stock market returns of commercial banks listed at Nairobi Securities Exchange, Kenya.
iii. To establish disparities between the pre-holiday and post-holiday returns and stock market returns of commercial banks listed at Nairobi Securities Exchange, Kenya.
iv. To find out the disparities between the national and international holiday returns and stock market returns of commercial banks listed at Nairobi Securities Exchange, Kenya.

Significance *of* the Study

The study findings will be useful to the following segments:

Investment Bankers and Advisors

The results help investment advisors develop financial literacy about the impact of holidays on investment returns. Knowledge of market efficiencies and possible return outcomes influences investor decisions, so investment advisors help explain to clients the most sensible way to invest and earn returns.

Individual and Institutional Investors

The results of this study reveal whether the Nairobi Stock Exchange is experiencing a holiday effect. Confirming this conclusion helps investors focus on high-yield securities. For fund managers serving large portfolios for their clients, the findings of this study will help them make informed decisions to make more objective investment decisions on behalf of their clients.

Policy Makers

For policy makers through relevant capital market regulators, the research findings will help formulate and implement policies and regulations to enable them to control and stabilize stock market performance, which is a signal of economic stability in the country.

Researchers and Academicians

This study adds to the inadequate local literature on holiday effects and complements the theory that its results confirm the presence or absence of the anomaly and provide its possible explanation. Through this research, scholars generate more topics for further investigation of market anomalies.

Regulatory Agency -Capital Market Authority

The CMA is the regulatory body primarily responsible for monitoring, authorizing, and supervising the activities of market intermediaries, including stock exchanges, central depositaries, payment systems and others licensed under the Capital Markets Act. This insight helps formulate policies that are important for investor protection.

Scope of the Study

The study focused on daily financial market returns for commercial banks in the last five years (2017 to 2021) at the Nairobi Securities exchange. This period was chosen because it coincides with the covid 19 pandemic.

The study looked at returns associated with the gazette national and international holidays in Kenya namely New Year's, Easter Holiday, Labor Day, Madaraka Day, Mashujaa Day, Jamhuri Day, Christmas holiday, and Eid-all-Fitr.

The study focused on commercial banks because previous studies have looked at market returns as a whole and not specific sectors. The data was collected from the NSE website.
The study focused on Holiday anomaly because it is the most predominant market anomaly (Batsirai, Gisele& Choga ,2021).

The study focused on Holiday anomaly because it is the most predominant market anomaly. It is also one of the most studied market anomalies because it has been observed in many different markets and is a well-known phenomenon among traders and investors. It has also been observed consistently over time, meaning that it occurs regularly and predictably around holidays and other significant calendar events. This makes it a more reliable anomaly to study compared to other market anomalies that may be more sporadic or difficult to identify. (Batsirai, Gisele& Choga ,2021). Based on the previous studies, several questions remain unanswered, what is the impact of holidays on stock market returns of Commercial Banks listed at the NSE? Is there any discrepancy between holiday returns from state holidays and international holidays? The study sought to answer these questions.

Limitations of the study

The researcher experienced several limitations. This, however, did not affect the findings of the study.

First, this study was limited to five years. It is not clear whether a study of a longer period would produce different results or is the same study would provide different results in a few years. The motivation of the five years was the researcher wanted to check the market anomaly at a period that coincides with the Covid 2019 pandemic.

Secondly, Since the NSE has other sectors, it is not conclusive on whether this study results would be applicable to the other sectors such as Insurance, Energy, Telecommunication, Agriculture, Manufacturing, Automobile, Exchange Traded fund, Real Estate and Construction, Investments, and Commercial& services.

LITERATURE REVIEW

This chapter presents theories on which the research was based together with previous research in holiday effect and stock market returns. The chapter will also discuss the conceptual framework showing how the independent and dependent variables are related, together with a summary of each literature.

Research was guided by three theories EMH random walk theory and behavioral Finance. A discussion of each theory was discussed in this chapter.

Theoretical Review

A theoretical review provides an overview to understand the theoretically expected relationships between the variables under study. The theories to be used in this study are the efficient market hypothesis and the random walk theory.

Efficient Market Hypothesis

Fama (1970) takes the view that an investor cannot buy an undervalued stock or an overvalued stock in a sales contract because the market value of a stock is related to its fair value. Market timing and expert selection of stocks do not outperform the broader market, so investors can only profit by buying risky savings.

This means that if a market is efficient, as the efficient market hypothesis puts forward, it should show no anomalies, especially holiday anomalies. The lack of holiday effects goes a long way toward saying that markets are efficient (Atala, 2015). In this study, EMH's proposals form the basis for judging the efficiency of commercial banks listed on the NSE. Limitations of EMH include overconfidence, overreaction, representative bias, and information bias. Where EMH applies, there should be no pre- and post-holiday effect and no discrepancy between the various types of holidays.

Random Walk Theory

Prices in an efficient market follow a random walk with no trend and have a normal distribution, and price movements do not follow any pattern (Malkiel, 1973). The random walk theory suggests

that stock prices cannot be predicted based on past stock prices. Therefore, since information on public holidays should be included in stock prices, it is expected that stock prices will not fluctuate due to holidays.

Kendall (1953) pointed out that stock prices follow a random walk, making it difficult to make profitable trading strategies that take advantage of observed stock market trends. His study posits that Pre/Post holiday stock returns should not be higher than returns on other trading days, so there are no pre- and post-holiday effects. Therefore, it is important to see if there are identifiable trends in stock returns that investors can use to generate unusual returns. A major criticism of the random walk theory is that the stock market is made up of many investors, and each investor spends a different amount of time in the market. Therefore, short-term trends in security prices may emerge. If the Random walk theory holds, the returns should not differ as the holiday approaches, after the holiday and in any type of holiday.

Behavioral Finance

The origins of behavioral finance go back to the work of Kahneman and Tversky (1992), through which they established the concepts of prospect theory. Behavioral finance deals with the sociological and psychological issues that affect investors' decision-making processes. This includes the emotional processes involved and the extent to which they influence the decision-making process (Aguila, 2009). Behavioral finance is divided into four themes according to Ricciardi and Simon (2000). These themes are financial cognitive dissonance, overconfidence, prospect theory and regret theory. However, what best describes Holiday Anomaly is Prospect Theory. In fact, prospect theory suggests that people don't always act rationally. The decisions people make are based on psychological factors that affect people in a given situation.

Thus, the theory of behavioral finance provides an explanation for the anomalies affecting the stock market because it focuses on the emotional processes that influence the decision-making process (Ricciardi and Simon, 2000). These human emotions include lust, panic, fear, joy, lust, anxiety, and pleasure.

According to Mehran, Meisami, and Busenbark (2012) A person's daily attitudes, attitudes, emotions, and experiences are influenced by the holidays they observe. Investor behavior is governed by emotions, which in turn can determine stock market returns and liquidity. Investors may experience positive sentiment ahead of the holidays, which affects their trading habits, leading to changes in stock market returns (Shankar & Kallarackal, 2016). Therefore, sentiment plays an important role in financial markets. Thus, behavioral finance theory explains why exhibits anomalies in stock market returns, especially holiday anomalies. This theory was in support of the last objective which is to determine the discrepancy between the national and international holiday returns and stock market returns of commercial banks listed at Nairobi Securities Exchange, Kenya.

Conceptual Framework

The conceptional framework will show the expected relationship between the variables of this research study. The independent variables are the pre-holiday effect, post-holiday effect, the disparities between pre-holiday and post-Holiday returns, and Disparities between the International and national returns. Stock market returns for commercial banks is the dependent variable.

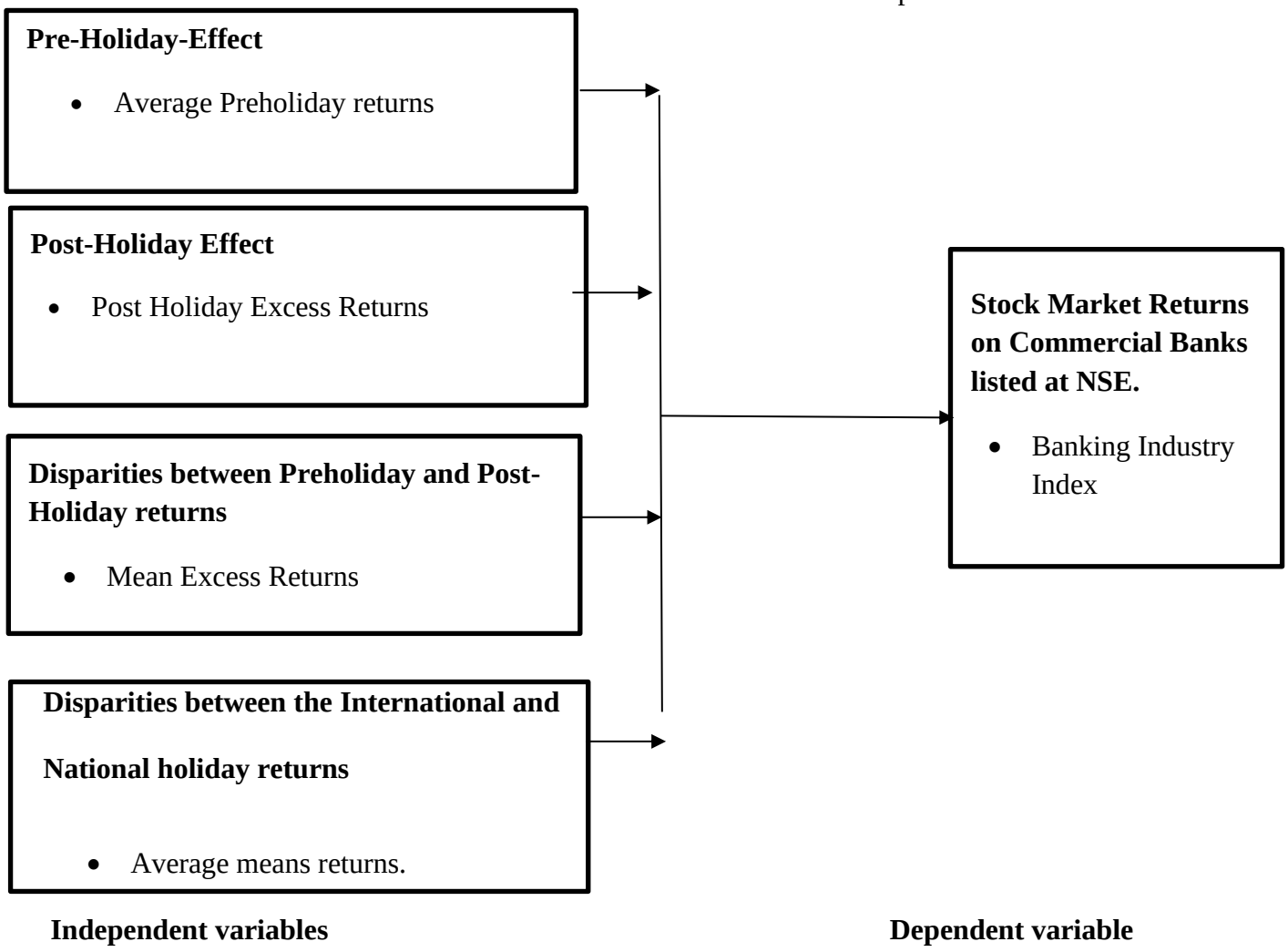


Figure 2.1: The Conceptual Model
Source: Researcher (2023)

Empirical Review of literature

This section considers previous reviews by other scholars on the study's independent variables; Pre-Holiday-Effect, Post-Holiday-Effect, and Disparities between Preholiday and Post-Holiday returns, and the disparities between the International and National holiday returns.

Pre-Holiday-Effect and Stock Market Returns

Pre-holiday effect as explained by Lucey (2005) is that the typical index exhibits a positive pre-holiday return, and the return is not being eroded by an equal or greater post-holiday decline. Those returns are also locally derived and are not derived internationally. In Ireland, Lucey (2005)

documents that on days before unique Irish holidays, there are statistically significant negative returns in several stock indices which indicates that holiday effects originate locally. The positive preholiday effect characterized by sufficiently positive returns that numerically swamp the negative local influence is established.

A study by Omar (2015) confirms the post-holiday effect for NSE, as it shows a higher positive return after the holiday season. The results also confirm that there is a statistically significant negative relationship between the existence of holidays and abnormal returns. The implication of this is that the market returns tend to revert to normal after the holidays. Rasugu (2005) showed no effect of holidays on NSE. The study was conducted almost two decades ago and changes in the economy, NSE and Covid pandemic forces us to revisit the impact of holidays. Considering the empirical evidence for the holiday effect, it is still inconclusive whether this stock market anomaly is present in his NSE. This study examines whether holiday effects are associated with his NSE stock returns. According to Dodd and Gakhovich (2011), the holiday effect is realized when unusual stock returns occur on holidays. Lakonishok and Smidt (1988) examined earnings one day before and one day after holidays in the United States and found significant anomalous earnings before the holidays. However, after-holiday returns he was insignificant until 1952, and positive and significant from 1952 to 1986. Ariel (1990) studied the market returns and found adverse pre-holiday effects. In the period leading up to the holidays, stocks rose, and positive returns became much more frequent, especially in the final hour. A study by Ariel (1990) documented high returns on trading days before the holidays. According to Bhana (1994), pre-holiday returns on the Johannesburg Stock Exchange (JSE) were high.

Post-Holiday-Effect and Stock Market Returns

Kim and Park (1994) confirmed the effect of holidays by confirming higher returns on trading days before holidays in all three major US stock markets. The study shows that although holidays and institutional arrangements differ, the effects of holidays can also be seen in the stock markets of the UK and Japan. At the same time, the impact of public holidays on stock markets in other countries does not depend on the impact of holidays on US stock markets.

According to Nderitu (2020), this study confirms the existence of pre-holiday effects in NSE. This means that investors tend to see extraordinary returns when trading on the stock exchanges before the holidays. Pre-holiday returns were positively impacted by pre-holiday presence. Rasugu (2005) showed no effect of holidays on NSE. The survey he conducted 18 years ago, due to the changes in the NSE's economy due to the coronavirus pandemic, the impact of holidays should be revisited. Considering the empirical evidence, it is still uncertain whether the holiday effect exists in the NSE. This study will examine if the holiday effects are associated with stock returns in of listed commercial banks in Kenya.

According to Fama(1970), stock prices follow a random trendless walk and past information, and patterns cannot be used to foresee future price movements. Dodd and Gachowicz (2011) posits that there should not exist abnormal returns on holidays. This is because these holidays are predetermined and do not contain information related to stock prices. However, Ang and Bekaert

(2007) noted that there is growing evidence against EMH, and numerous studies document predictability of return, including predictability after holidays. All of this constitutes a vast body of literature that has been developed to challenge the notion of market efficiency.

Disparities between Preholiday and Post-Holiday returns and Stock Market Returns

Al-Loughani (2005) examined the effect of holidays on the Kuwait Stock Exchange (KSE) for the period 1984-2000. We compared the price/earnings ratio on the trading day immediately preceding the holiday (pre-holiday) and the rest of the trading day (regular trading day). Post-holiday returns were higher than pre-holiday and other normal trading days, according to the findings. The reason for this observation is that investors typically sell before the holidays and investors rebuild their investment portfolios immediately after the holidays.

A Warner (2020) study of the impact of the Chinese New Year on the market found that trading volumes dropped significantly one to two weeks before the market closed, before bottoming out on the first trading day after the break. bottom. The data show a slowdown in trading seen in the trading days leading up to the exchange's closure, which will take about seven trading days to recover after reopening.

According to a study conducted in India by Cristi, Iqbal, Birau, and Pinto (2020), the current study, using daily price-to-earnings data from Ruby Mills and Mafatlal Industries, found that the Indian stock market during the period It is suggested that they tested the effect of Between 2010 and 2019. Cristi et al. (2020) stated that for Ruby Mills, the average yield before the holidays was higher than the average yield on the rest of the days, which was statistically significant. Mafatlal Industries reported higher earnings before the holiday period during the study period, but they were not significant. We also found that the average post-holiday return was higher than the average return for the rest of the day for both selected stocks, but testing confirmed that this was not statistically significant. The results of the study ruled out the existence of post-holiday effects for both selected strains. The previous impact was only detectable in Ruby Mills during the study period. In addition, the study can be extended to other textile stocks traded on the Bombay Stock Exchange.

Disparities between the International and National holiday returns and Stock market returns

Holidays in Kenya are mainly of two types, National holidays (Jamuhuri, Madaraka & Mashujaa) and international holidays(New Year, Easter, Labor Day, Christmas & Eid). Atala (2015) studied the holiday effect on Muslim holidays which is an international holiday. From these results four out of the ten holidays studied show no effect while six of the holidays Show some effect. Several studies. Studies on public holidays have been done to check for the existence of the holiday effect. Another study by Nderitu (2020) on both National and international holidays shows that the proportion of positive returns on post-holidays is greater in the nonparametric test thereby confirming the existence of post-holiday effects at the NSE. The study will incorporate both the public and faith-based holiday to establish if there is a significant difference in stock returns of commercial banks listed at NSE.

Critique of the existing literature relevant to the study

The overall purpose of this study is to determine the Holiday effect and stock market returns of commercial banks listed at the Nairobi Securities Exchange, Kenya. From the literature reviewed, most researchers used secondary and quantitative data. Studies conducted in Kenya did not analyze per sector. This study will look at the banking sector to determine whether a holiday anomaly exists or not.

Based on the previous studies, several questions remain unanswered, what is the impact of holidays on stock market returns of Commercial Banks listed at the NSE? Is there any discrepancy between holiday returns from state holidays and international holidays? The study sought to answer these questions.

Summary of the literature

Previous studies conducted both in developed and developing economies have continued to give conflicting results on the existence of seasonal anomalies in the stock markets.

Atala (2015) studied the effect of holidays on Muslim holidays, since other holidays affect the stock returns differently, the results of this study cannot be used as a representative of all public holidays. Rasugu (2005) Confirmed that there exists no holiday effect on NSE. Rasugu's Study was done close to two decades ago and there have been changes in the economy and NSE together with the covid pandemic, so the effect of holidays needs to be restudied again. It is still inconclusive whether the holiday effect exists.

According to Hemed (2015) research done on stock market anomalies at the NSE have continued to demonstrate a volatility of the stock hence the need to retest. According to the global economy (2021).

Al-Loughani (2005) examined the effect of holidays on the Kuwait Stock Exchange (KSE) for the period 1984-2000.A Warner (2020) study of the impact of the Chinese New Year on the market found that trading volumes dropped significantly one to two weeks before the market closed, before bottoming out on the first trading day after the break.

Research Gaps

These studies did not investigate how the different types of holidays affect the stock market returns i.e., international, and national holidays, according to the behavioral Finance, Different investors might have different perceptions towards holidays hence the reason for different trading patterns observed around a holiday. Further, past research has seemed to exclude Muslim faith-based holidays despite them being gazetted and celebrated in Kenya for the past years. There is therefore a research gap on how these different holidays affect the stock market return. Past Studies have also looked at the whole stock market and thus not segregated the studies to industry specific to check

whether different industries have different results. This study, therefore, will attempt to fill in the missing link in knowledge concerning the holiday effect and stock market returns on commercial banks listed at the NSE, Kenya. Based on the previous studies, several questions remain unanswered, what is the impact of holidays on stock market returns of Commercial Banks listed at the NSE? Is there any discrepancy between holiday returns from state holidays and international holidays? The study sought to answer these questions.

RESEARCH METHODOLOGY

This chapter will cover the research design that was used, data collection procedure, Data analysis and presentation, and Test of significance. The chapter will also discuss the Model specification to model the dependent and independent variable. To determine the feasibility of the study model, several diagnostic tests were done, a test for Multicollinearity, which included a normality test, a test for homogeneity of variances (Homoscedasticity), and the autocorrelation test.

Research Design

The study was modeled as an event study and will adopt a descriptive study design which was used for the purpose of describing the study variables. This study design is well suited for studies that are interested in understanding the nature of relationships between study variables and an event period (Cooper & Schindler, 2008). In descriptive research designs, things are reported as they are and events are usually described from the data collected (Hemed, 2015). The study uses data from NSE websites for commercial banks listed for the period 2017-2021.

Population

The unit of analysis and observation was the 10 commercial banks listed at the NSE, Kenya (See appendix I) actively trading between 2017 and 2021. A census was done of all commercial banks because of the small population thus no sampling required.

Data Collection Procedure

The study will use secondary data to achieve its objective. The collection of data was accomplished using the secondary data collection instrument specified in Appendix II. The event period will consist of eleven days (5 days before a holiday, on the day of a holiday, and 5 days after a holiday). The data will focus on the last five years from 2017 to 2021.

Data analysis and presentation

The data was collected from the NSE website, data for the event period was collected and separated into pre-holiday, post-holiday, national and international for further analysis. The data was summarized using graphs and tables for the researcher to draw inferences. Descriptive and inferential statistics were conducted on the data. The event period in this case was the particular holiday, and the event day represents the day of the holiday, symbolized as t=0. The event window was broken 5 days before the event date and 5 days after the event date, or 11 days as (+5, -5) days.

The estimated duration of the investigation is 5 days before the event window and 5 days after the event to avoid data duplication.
To fully assess the impact of an event, McKinley (2009) points out that normal and abnormal returns need to be calculated. Actual return is the return that would have been expected had the event not occurred, and abnormal return is the asset's actual return minus the expected return in the event window. This research focuses on understanding the impact of taking time off on stock returns.

Measuring Daily Movements

The daily price change of a stock over a period is calculated by subtracting the previous stock price from the actual stock price divided by the previous stock price. Daily earnings are then calculated according to the traditional formula suggested by previous literature:

$$\text{Stock Price Movement} = \frac{\text{Actual stock price}(p_1) - \text{Previous stock price}(\mathrm{p}_0)}{\text{Previous stock price}(\mathrm{p}_0)}$$

In this study, the banking industry index was used as a benchmark to calculate the expected rate of return of commercial companies listed on the NSE. A study by Mghendi (2014), Kiano (2015), and Chia et al. (2015) found that market models are the best tools.

According to the NSE (20) share index formula, the banking industry index was calculated using the arithmetic mean of the ten commercial banks listed at the NSE, Kenya for the period 2017-2021.

Tests of Significance

A t-test statistic is used to measure the suitability of the model reported during the event period at the 5% significance level. This test assumes a normal distribution of data. A simple t-test is commonly used to test the significance of returns as suggested by (Jong, 2007).

Pilot Study

A pilot study was done before conducting the actual data collection activity. The main purpose of the pilot study was to check whether the secondary data collection instruments will provide the required results. The study collected the returns for the last five years and conducted tests to check for the validity and reliability of the secondary collection sheet and procedures. The main objective of this was to help the researcher discover any possible weakness and limitations that might be experienced during the main study. The outcomes of the study were used to make the required changes before the actual data collection.

Research Model

The model will help deduce the anticipated relationship between the expected return and actual market return. The study adopts an event time model as the data will look at the impact of the holiday and stock returns. For this study, we shall adopt a Single Factor Market Model because it has been recommended as the best tool for event studies as it is widely accepted and provides

reliable results, according to (Mghendi, 2014), (Kiano ,2015), and (Chia et al. ,2015). There were four different equations for the expected returns to answer the four objectives.

$Ri = \alpha i + \beta iRm + \varepsilon i$

Where:

where Ri is the return on stock i,

αi is the intercept term (representing the expected return of the stock if the market return is zero),

βi is the regression coefficient (representing the sensitivity of the stock's returns to changes in the market index),

Rm is the return on the market index,

εi is the error term (representing the random deviation of the stock's returns from the predicted returns based on the market index).

The following formula was used to calculate the abnormal returns.

$ARi = Ri- (\alpha i + \beta iRm)$

Where.

ARit = Abnormal return of stock i

Rit = Return of stock

Rmt = market return

α and β = constants

The assumptions under this model include, Linearity Relationship, Homoscedasticity, No correlation, and Stationarity.

Model Diagnostic tests

Several diagnostic tests including normality test, multicollinearity test, homogeneity test, Stationarity, granger causality test and autocorrelation test are performed to determine the suitability of the study model.

Normality Test

Normality tests the assumption that variable is normally distributed around the mean. Normality testing is performed using the Shapiro Wilk test, which checks how normally distributed the sample data is by calculating the kurtosis and Skewness.

If one of the variables does not have a normal distribution, it is transformed and standardized using the log transformation method. Logarithmic transformations are used as a convenient means of transforming highly skewed variables into more normalized data sets. A logarithmic transformation can also reduce data variability and bring data closer to a normal distribution. A logarithmic transformation can also help sample observations better fit the assumptions of some statistical analyzes mentioned above by Curran (2018).

Multicollinearity Test

Multicollinearity occurs when there is an exact or nearly linear relationship between two or more predictors. All multicollinearity variables are removed from the study and new measures are selected to replace them with variables exhibiting collinearity. The term multicollinearity indicates that there is an exact linear relationship between some variables in the regression model. If the independent variables are multicollinear, the predictive power overlaps or splits. Therefore, if the multicollinearity is perfect, the regression coefficient of the independent variable cannot be determined, and the standard error cannot be measured. To check for multi-collinearity, we will use the Variance Inflation Factor (VIF) for each independent variable, If the VIF value is higher than 10, it was considered to have a high correlation with other independent variables.

Heteroscedasticity Test

Heteroscedasticity tests whether the variance of the regression error depends on the independent variable. This study uses Levene's test to approach, and when the data do not agree with the assumption of homogeneity of variances, the study uses the robust standard error of the model (Burns & Burns, 2008).

Stationarity Test

The stationarity test was utilized in determining if the statistical characteristics such as variance, mean, as well as autocorrelation change with the passage of time (George & Jenkins,1976).

In time series analysis, stationarity is a crucial concept that refers to the statistical properties of a process that does not change over time. A stationary time series has a constant mean, constant variance, and an autocovariance that is independent of time. The test will use Augmented Dickey–Fuller test unit root. With this, the panel data for all the variables became stationary. This test is used to check whether a time series has a unit root or not. If the time series has a unit root, it is non-stationary, and if it does not have a unit root, it is stationary.

Granger causality Test

This is a statistical concept that tests the causal relationship between two time series. The Granger causality test is a popular method to determine whether one time series is useful in forecasting another time series (Granger, 1969)

The Granger causality test involves estimating two regression models, one with only the past values of the dependent variable and the other with both the past values of the dependent variable and the past values of the independent variable. The null hypothesis is that the independent variable does not Granger-cause the dependent variable, meaning that the past values of the independent variable do not add any significant predictive power to the regression model that includes only past values of the dependent variable.

RESULTS, FINDINGS AND DISCUSSIONS

The purpose of this study was to determine the holiday effect and stock market returns of commercial banks listed at the Nairobi Securities Exchange, Kenya. This Chapter discusses the results and findings. The study used a descriptive design, census, secondary data, Charts, quantitative data, and a Market model to analyze the relationship between the variables. The data presentation is sorted as per the specific objectives.

Descriptive Statistics

Table 1- Pre and Post Holiday Returns Analysis

Pre-Holiday Returns		*Post Holiday Returns*	
Mean	0.002709595	Mean	0.005525966
Standard Error	0.005330052	Standard Error	0.007053088
Median	6.60083E-05	Median	0.00173526
Standard Deviation	0.01191836	Standard Deviation	0.015771184
Sample Variance	0.000142047	Sample Variance	0.00024873
Kurtosis	3.575304368	Kurtosis	0.679463567
Skewness	1.710723744	Skewness	0.826018089
Range	0.031408173	Range	0.041560143
Minimum	-0.008351523	Minimum	-0.012118579
Maximum	0.02305665	Maximum	0.029441564
Sum	0.013547976	Sum	0.027629829
Count	5	Count	5

Table 2- Pre and Post Holiday Returns Analysis

National Pre Holiday-Returns		*National Post Holiday Returns*	
Mean	0.005265761	Mean	0.006492812
Standard Error	0.013331385	Standard Error	0.014426789
Median	-0.001728644	Median	0.010363398
Standard Deviation	0.029809883	Standard Deviation	0.03225928
Sample Variance	0.000888629	Sample Variance	0.001040661
Kurtosis	3.989089835	Kurtosis	1.634793177
Skewness	1.915839437	Skewness	-0.617931993
Range	0.075604714	Range	0.089178284
Minimum	-0.018533634	Minimum	-0.042336298
Maximum	0.05707108	Maximum	0.046841985
Sum	0.026328803	Sum	0.032464058
Count	5	Count	5

Table 3- Pre and Post Holiday Returns Analysis

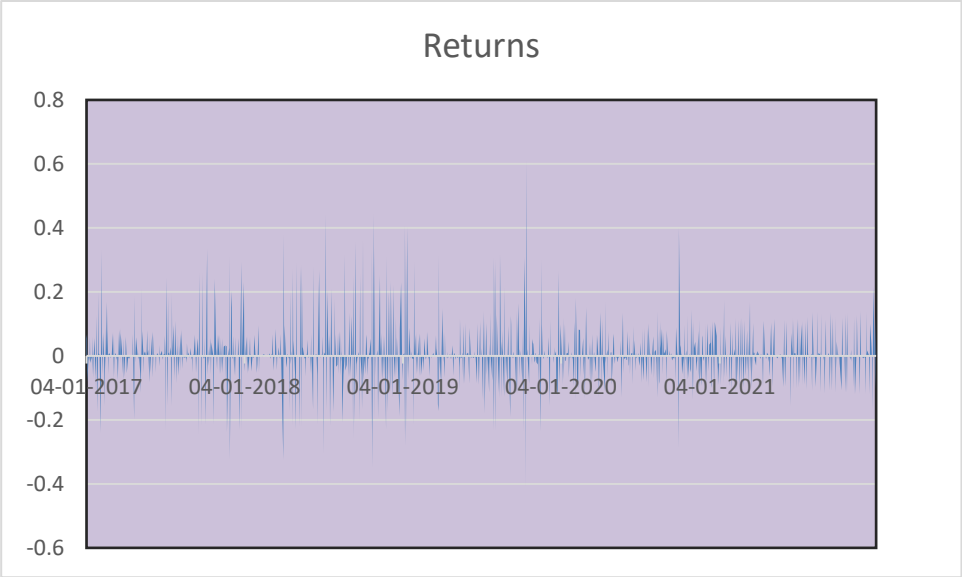
International Pre Holiday-Returns		*International Post- Holiday Returns*	
Mean	0.001175896	Mean	0.004945859
Standard Error	0.002564589	Standard Error	0.009394934
Median	0.001557567	Median	-0.004663572

Standard Deviation	0.005734594	Standard Deviation	0.021007712
Sample Variance	3.28856E-05	Sample Variance	0.000441324
Kurtosis	2.145526477	Kurtosis	3.251145222
Skewness	-0.765922445	Skewness	1.807401796
Range	0.015973167	Range	0.051156278
Minimum	-0.007721023	Minimum	-0.010267813
Maximum	0.008252144	Maximum	0.040888464
Sum	0.005879481	Sum	0.024729293
Count	5	Count	5

The average returns days for the period 2017-2021 was found to be 0.004301. This is significantly higher than the returns during pre- and post-holiday thus confirming the existence of the holiday effect. It was noted that the returns for the preholiday period was significantly higher than the post-holiday return. This confirms that there are disparities between pre- and post-holiday returns.

The returns for the international holidays were significantly lower than the national holidays confirming that the national holidays were most affected by the holiday compared to the international holidays. The national holidays in this case were Jamhuri, Madaraka and Mashujaa while the international were the Eid, New Year, Christmas, Labor Day, and Esther holiday.

Time Series Plot for Returns for 2017-2021



Holiday analysis

Below are the graphs for the respective holiday which shows the trend over time.

Christmas Holiday

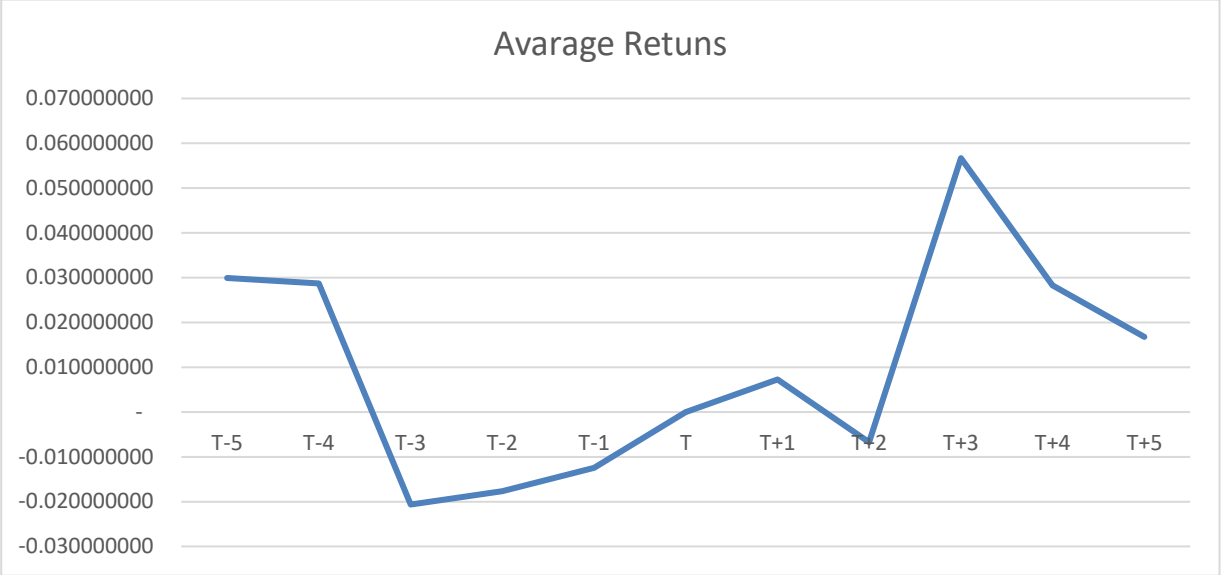


Figure 4.1
Source: Researcher (2023)

The Christmas holiday is celebrated on 25th December every year. The data showed a sharp decline 4 days before the holiday. The data recorded average negative abnormal returns between three days and one day to the holiday. The Returns increased after the holiday and declined, dropped after day two and a sharp increase from day two up to day three and finally dropped to day five.

Jamhuri Holiday

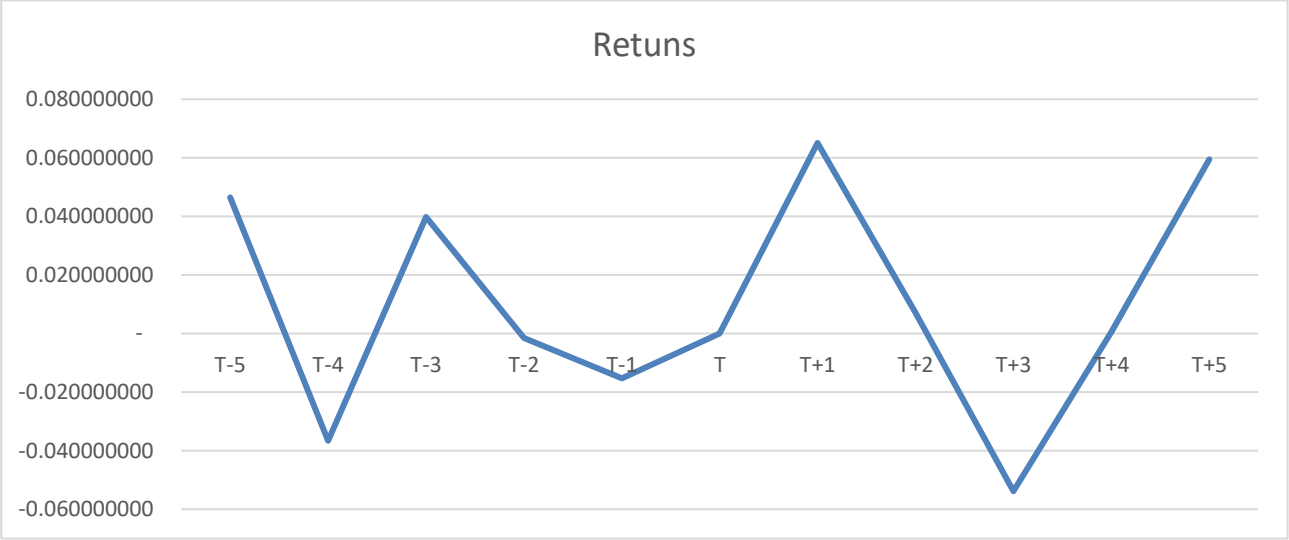


Figure 4.2
Source: Researcher (2023)

Jamhuri day holiday is celebrated every 12th of December. For Jamhuri holiday, the returns dropped five days to the holiday, increased 4 days to the holiday, dropped between two days to the holiday and started increasing again after the holiday. The returns dropped one day after the holiday and started increasing three days after the holiday all the way to the fifth day.

Mashujaa Holiday

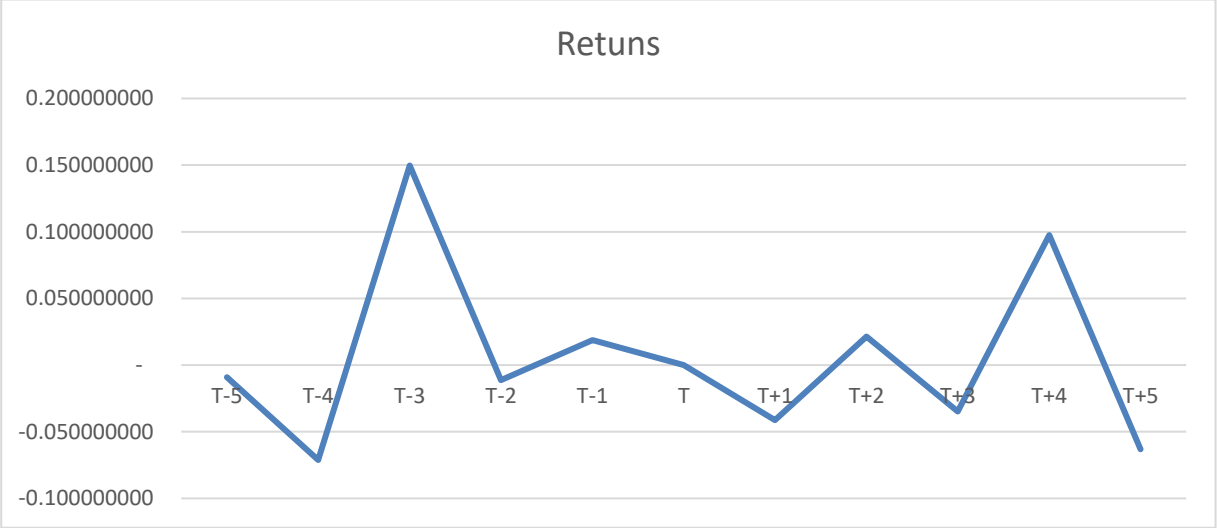


Figure 4.3
Source: Researcher (2023)

Mashujaa holiday is celebrated every 20th October. The data showed a decline 5 days to the holiday, a sharp increase 4 days to the holiday, a drop three days to the holiday and increase two days to the holiday a drop to the holiday and an increase one day after the holiday decrease at two days after the holiday and increase three days after the holiday and a drop four days all the way to the fifth day after the holiday.

New Year Holiday

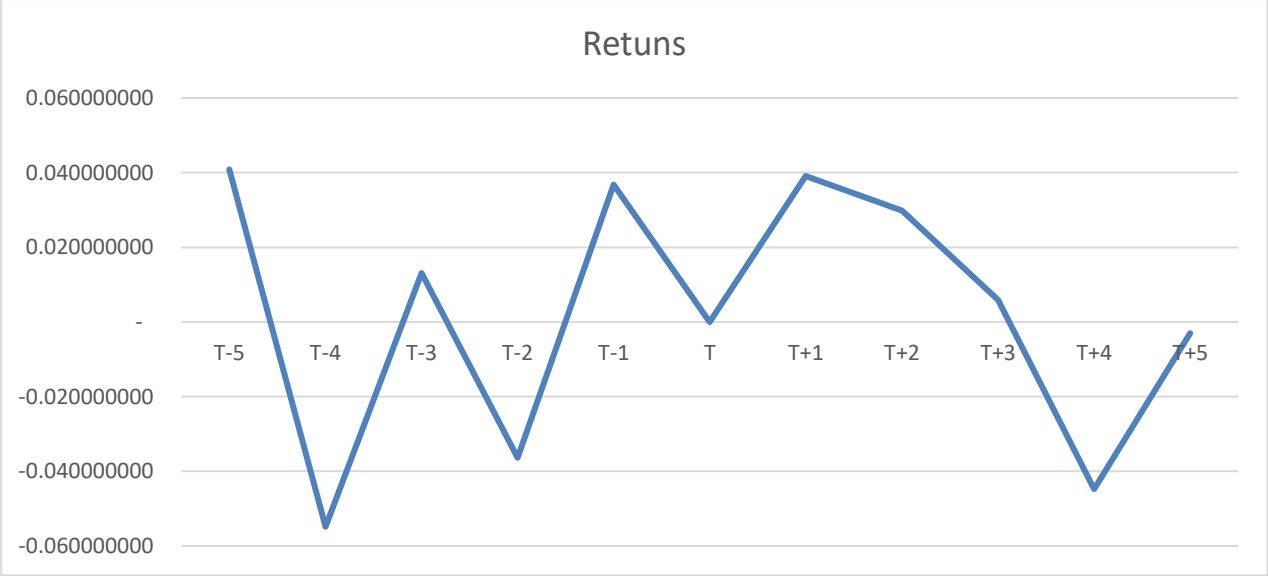


Figure 4.4
Source: Researcher (2023)

New year is celebrated every 1st of January. The data showed a decline from day five to four days before the holiday, The returns started increasing three days to the holiday, reducing two days to the holiday, and increased between two days to the holiday and dropped on the day of the holiday. The returns started increasing all the way to one day after the holiday, dropped to negative returns up to four days after the holiday and started increasing from up to day five.

Labor Holiday

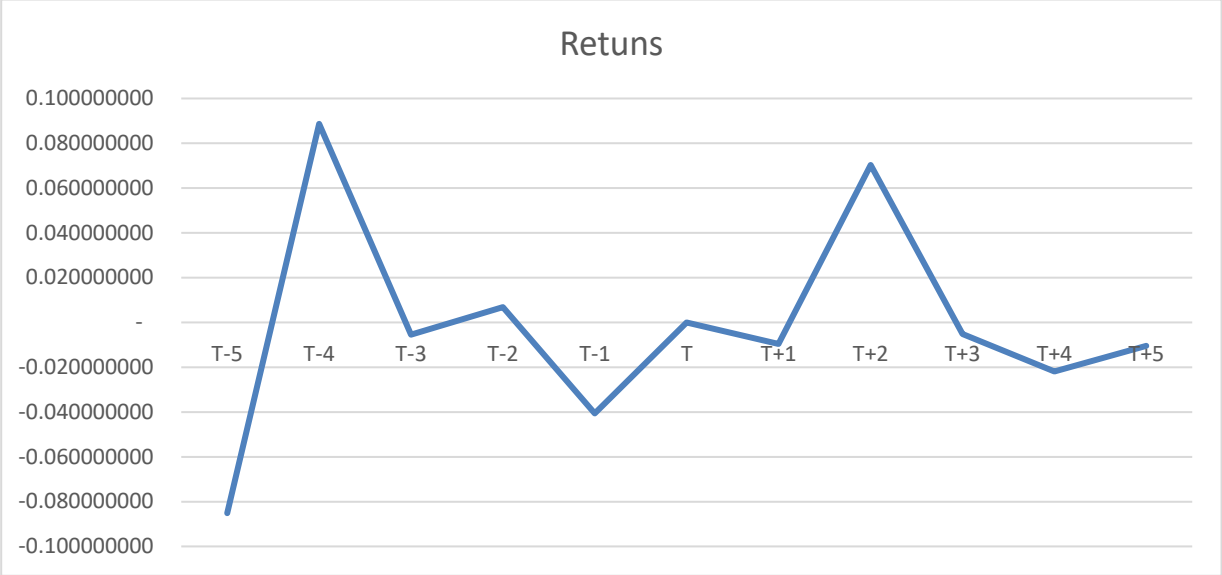


Figure 4.5
Source: Researcher (2023)

Labor holiday is celebrated every 1st of May. The data showed an increase in returns five days to four days after the holiday, started dropping and fluctuated between three days to the holiday and one day after the holiday. The returns increased one day after the holiday to day three and dropped again.

Madaraka Holiday

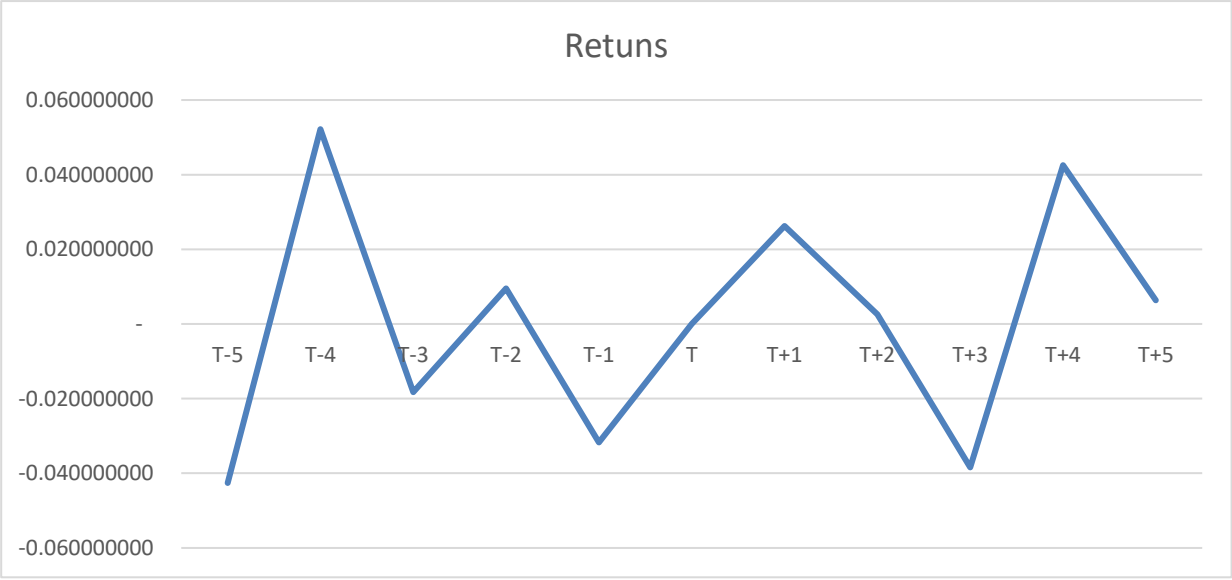


Figure 4.6
Source: Researcher (2023)

Madaraka holiday is celebrated every 1st of June. The data showed an increase in returns five days to four days after the holiday, started dropping and fluctuated between three days to the holiday and one day after the holiday. The returns increased one day after the holiday to day three and dropped again.

Eid Holiday

Figure 4.7
Source: Researcher (2023)

New year is celebrated every year in different dates. The data showed a decline from day five to four days before the holiday, The returns started increasing three days to the holiday, reducing two days to the holiday, and increased between one day to the holiday and started increasing on the day of the holiday. The returns started increasing all the way to one day after the holiday, dropped to negative returns up to four days after the holiday and started increasing from today five.

Easter Holiday

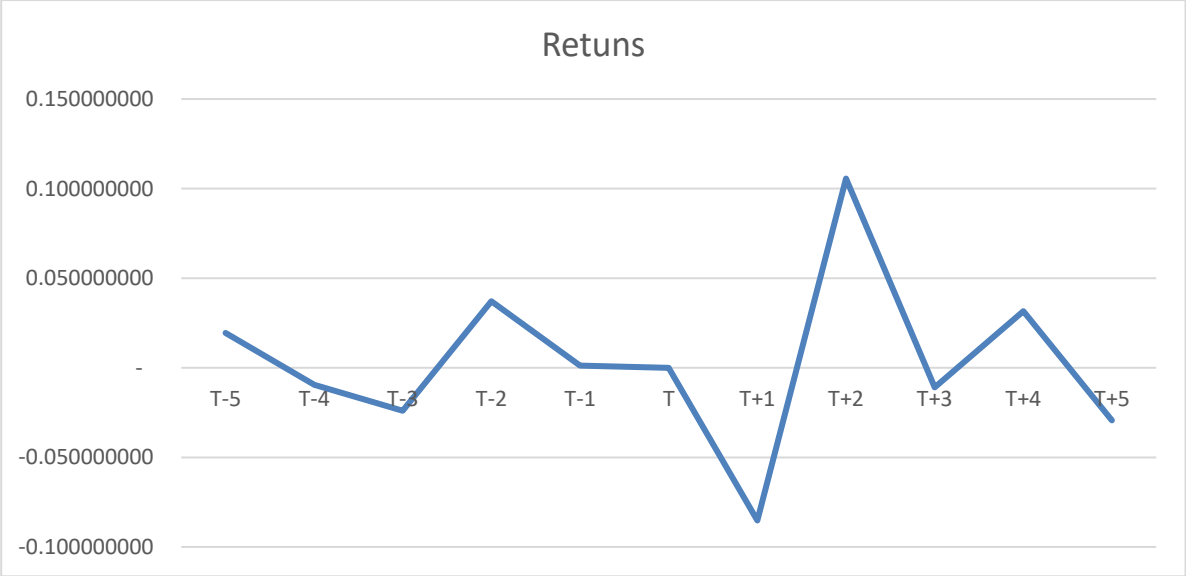


Figure 4.8
Source: Researcher (2023)

New year is celebrated every year in different dates. The data showed a decline from day five to three days before the holiday, The returns started increasing three days to the holiday, reducing two days to the holiday, and was constant between one day to the holiday on the day of the holiday. The

returns increased the day after the holiday, returns started decreasing two to three days after the holiday, increased up to four days after the holiday and started decreasing all the way to today five.

Diagnostic Tests

Several diagnostic tests including normality test, multicollinearity test, homogeneity test, Stationarity, granger causality test and autocorrelation test are performed to determine the suitability of the study model.

Normality Test

Normality tests the assumption that variable is normally distributed around the mean. Normality testing is performed using the Shapiro wilk test.

If one of the variables does not have a normal distribution, it is transformed and standardized using the log transformation method. Logarithmic transformations are used as a convenient means of transforming highly skewed variables into more normalized data sets. A logarithmic transformation can also reduce data variability and bring data closer to normal distribution. A logarithmic transformation can also help sample observations better fit the assumptions of some statistical analyzes mentioned above by Curran (2018).

Table 3-Shapiro Wilk data

	Shapiro Wilk Test
Pre-Holiday Returns	0.0965
Post Holiday Returns	0.8210
Disparity between Pre and Post Holiday returns	0.6171
Disparity between National and International holiday returns	0.5240

Since the P values are greater than 5%, we accept the null hypothesis and conclude that the data are symmetrical thus satisfying the test for normality.
regression equation has no autocorrelation.

Multicollinearity Test

Multicollinearity occurs when there is an exact or nearly linear relationship between two or more predictors. All multicollinearity variables are removed from the study and new measures are selected to replace them with variables exhibiting collinearity. The term multicollinearity indicates that there is an exact linear relationship between some variables in the regression model. If the independent variables are multicollinear, the predictive power overlaps or splits. Therefore, if the multicollinearity is perfect, the regression coefficient of the independent variable cannot be determined, and the standard error cannot be measured. To check for multi-collinearity, we will use the Variance Inflation Factor (VIF) for each independent variable, If the VIF value is higher than 10, it was considered to have a high correlation with other independent variables.

Table 4-Variance Inflation Factors

Variance Inflation Factors	
Preholiday Returns	1.544303045
Post Holiday Returns	2.431354538
Disparity between Pre and Post Holiday Returns	1.036853355
Disparity between National and International holiday returns	1.146661167

The VIF for points is calculated as 1 / (1 – R Square)

Given that each of the VIF values for the explanatory variables in our regression model is less than 5, multicollinearity is not a problem in our study.

Heteroscedasticity Test

Heteroscedasticity tests whether the variance of the regression error depends on the independent variable. This study uses Levene's test to approach, and when the data do not agree with the assumption of homogeneity of variances, the study uses the robust standard error of the model (Burns & Burns, 2008). The null hypothesis is that the variances of the groups are equal, and the alternative hypothesis is that the variances are not equal.

Table 4-Variance Inflation Factors

	Lavene Test	*P-value*
Between Groups		0.919549

Since the P value is greater than 0.05, we don't have sufficient evidence to say that the variance between the four groups is different.

Stationarity Test

The stationarity test was utilized in determining if the statistical characteristics such as variance, mean, as well as autocorrelation change with the passage of time(George & Jenkins,1976).
In time series analysis, stationarity is a crucial concept that refers to the statistical properties of a process that does not change over time. A stationary time series has a constant mean, constant variance, and an autocovariance that is independent of time. The test will use Augmented Dickey–Fuller test unit root. With this, the panel data for all the variables became stationary. This test is used to check whether a time series has a unit root or not. If the time series has a unit root, it is non-stationary, and if it does not have a unit root, it is stationary.

Table 6- Augmented Dickey–Fuller test unit root statistic

Augmented Dickey–Fuller test unit root	
Preholiday Returns	3.93964
Post Holiday Returns	4.56369
Disparity between National and International holiday returns	3.31682
Disparity between Pre and Post Holiday Returns	3.80518

Since the unit root is greater than one, the data is stationary as no unit roots exist.

Granger causality Test

This is a statistical concept that tests the causal relationship between two time series. The Granger causality test is a popular method to determine whether one time series is useful in forecasting another time series (Granger, 1969).

The Granger causality test involves estimating two regression models, one with only the past values of the dependent variable and the other with both the past values of the dependent variable and the past values of the independent variable. The null hypothesis is that the independent variable does not Granger-cause the dependent variable, meaning that the past values of the independent variable do not add any significant predictive power to the regression model that includes only past values of the dependent variable.
Post holiday returns

Table 7-Granger causality Test

Granger causality Test	P-Value
Preholiday Returns	0.866432807
Post Holiday Returns	0.772874879
Disparity between National and International holiday returns	0.79439065
Disparity between Pre and Post Holiday Returns	0.616854631

If the p-value is greater than 0.05, then there is no evidence of Granger causality between the two-time series.

Research Model

Regression analysis

The study adopted a Market model to explain the relationship between the Expected returns and Market Returns.

The equation is thus, for pre-holiday returns: -

$$E_r = 0.003009741 + 0.025012147x$$

The equation is thus, for post-holiday returns: -

$$E_r = 0.002996724 - 0.075625177x$$

Where x is is the return on the market index

The equation is thus, for disparities between pre- and post-holiday returns: -

$$E_r = 0.001183077 + 0.114040903x$$

The equation is thus, for disparities between national and international holiday returns: -

$$E_r = -0.007852444 - 0.221546787x$$

Abnormal returns were then computed using the above market models to regress the equation and below was the output.

Table 8-Reggresion Coefficients

	Coefficients	*Standard Error*	*t Stat*	*P-value*
Intercept	- 0.000033253	0.003592003	-0.009257447	0.992971743
X Variable 1	- 0.367712500	0.187746269	-1.958560895	0.107485736
X Variable 2	- 0.455344436	0.126535944	-3.598538255	0.015567224
X Variable 3	- 0.404790011	0.162350168	-2.493314406	0.054937703
X Variable 4	- 0.124816755	0.067189234	-1.857689793	0.122333474

$Y = -0.000033253 - 0.367712500x_1 - 0.455344436x_2 - 0.404790011x_3 - 0.124816755x_4$

Consequently, the above illustration of the interpreted regression model, i0.367712500-unitt in for an increase of a single unit in stock returns, it was required to effect - 0.367712500-unit changes on pre-holiday returns, - 0.455344436 unit changes on pre-holiday return- 0.404790011 unit changes on discrepancy between pre and post-holiday returns, and - 0.124816755 changes on discrepancy between national and international holiday while holding other factors (- 0.000033253) constant. The results further indicated that discrepancy between national and international holidays which returned the highest coefficient ($\beta = -0.124816755$) had the greatest effect on stock market returns of commercial banks listed at the Nairobi Securities Exchange, Kenya.

Coefficient of Determination

The study adopted a coefficient of determination to test how the independent variables predict the dependent variable. The coefficient of determination helps test the model adequacy. The coefficient of determination gives a value between zero and one. A value closer to zero shows the dependent and independent variables are less correlated. A value close to one shows the variables are more correlated. This is basically the square of the correlation coefficient.

Table 9-Reggresion Statistics

Regression Statistics	
Multiple R	0.971475976
R Square	0.943765572
Adjusted R Square	0.898778029
Standard Error	0.007676773
Observations	10

Since the R2 is 0.943765572, we conclude that 94% of the variation in stock returns is predicted by the dependent variables.

ANOVA

Table 10-ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	4	0.004945262	0.001236315	20.97837565	0.002519238
Residual	5	0.000294664	5.89328E-05		
Total	9	0.005239926			

The study established as shown that the model linking the studied holiday effect and market returns of commercial banks listed at the Nairobi securities exchange was significant ($F = 20.97837565$; $p < 0.05$). This meant the model was suitable for further analysis and interpretation.

Discussion and Interpretation of Research Findings

Based on the findings, it is noted that there exists a pre- and post-holiday effect as the mean returns are lower than the normal holiday returns. Since the mean returns for pre- and post-holiday are positive and negative respectively, we conclude that there exists a discrepancy between the pre- and post-holiday returns. The negative returns for the international holidays were significantly higher than the national holidays confirming that the national holidays were least affected by the holiday compared to the international holidays. We conclude that the international and national holidays have got different abnormal returns and international holidays experience more negative returns than national holidays.

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

This study's main objective is to ascertain the holiday effect and stock market returns of commercial banks listed at Nairobi Securities Exchange. The specific objective is to determine the existence of the Pre-holiday effect, post-holiday effect, disparities between national and international holiday returns, and disparities between the pre-and post-holiday returns of financial firms listed at Nairobi Securities Exchange. The study was analyzed as an event study with a focus on 8 holidays namely: New Year's, Easter Holiday, Labor Day, Madaraka Day, Mashujaa Day, Jamhuri Day, Christmas holiday, and Eid-all-Fitr holiday using the 10 financial companies listed at the NSE over five years (2017-2021). The Chapter will discuss the findings, conclusions, recommendations, and areas for further research.

Summary of Findings

This study's main objective was to ascertain the holiday effect and stock market returns of commercial banks listed at Nairobi Securities Exchange. The specific objectives were to determine the existence of the Pre-holiday effect, post-holiday effect, disparities between national and international holiday returns, and disparities between the pre-and post-holiday returns of financial firms listed at Nairobi Securities Exchange. The study was analyzed as an event study with a focus

on abnormal returns and cumulative abnormal returns at the NSE over 8 holidays namely: New Year's, Easter Holiday, Labor Day, Madaraka Day, Mashujaa Day, Jamhuri Day, Christmas holiday , and Eid-all-Fitr holiday using the 10 financial companies listed at the NSE over five years (2017-2021) as specified in Appendix I.

Preholiday returns and Stock Market Returns

Pre-holiday returns mean were 0.002709595 compared to the normal mean returns of normal day which is 0.004301. The implies that stock market returns dropped as the holiday approached. This is inconsistent with the EMH as the information ought to have been factored in the stock prices.

Atala (2015) studied the effect of holidays on Muslim holidays and confirmed that the returns prior to the holiday dropped, this is consistent with our findings for the existence of the pre-holiday returns. Rasugu (2005) Confirmed that there exists no holiday effect on NSE. Rasugu's Study was done close to two decades ago and there have been changes in the economy and NSE together with the covid pandemic. According to Hemed (2015) research done on stock market anomalies at the NSE have continued to demonstrate a volatility of the stock.

Al-Loughani (2005) examined the effect of holidays on the Kuwait Stock Exchange (KSE) for the period 1984-2000. We compared the price/earnings ratio on the trading day immediately preceding the holiday (pre-holiday) and the rest of the trading day (regular trading day). Post-holiday returns were higher than pre-holiday and other normal trading days, according to the findings. The reason for this observation is that investors typically sell before the holidays and investors rebuild their investment portfolios immediately after the holidays.
A Warner (2020) study of the impact of the Chinese New Year on the market found that trading volumes dropped significantly one to two weeks before the market closed, before bottoming out on the first trading day after the break. bottom. The data show a slowdown in trading seen in the trading days leading up to the exchange's closure, which will take about seven trading days to recover after reopening. This is consistent with our findings as the mean returns before the holiday have dropped compared to normal day returns.

According to a study conducted in India by Cristi, Iqbal, Birau, and Pinto (2020), the current study, using daily price-to-earnings data from Ruby Mills and Mafatlal Industries, found that the Indian stock market during the period It is suggested that they tested the effect of Between 2010 and 2019. Cristi et al. (2020) stated that for Ruby Mills, the average yield before the holidays was higher than the average yield on the rest of the days, which was statistically significant. Mafatlal Industries reported higher earnings before the holiday period during the study period, but they were not significant. We also found that the average post-holiday return was higher than the average return for the rest of the day for both selected stocks, but testing confirmed that this was not statistically significant. The results of the study ruled out the existence of post-holiday effects for both selected strains. The previous impact was only detectable in Ruby Mills during the study period. In addition, the study can be extended to other textile stocks traded on the Bombay Stock Exchange. This study is inconsistent with our finding as for our case the returns have dropped as the holiday approached.

This result answers our first research question and concludes that there is a pre-holiday effect on stock market returns of commercial banks listed at the NSE, Kenya.

Post holiday returns and Stock Market Returns

Post-holiday returns mean was 0.005525966 compared to the normal mean returns of normal day which is 0.004301. The implies that stock market returns dropped after the holiday. This is inconsistent with the EMH as the information ought to have been factored in the stock prices. According to the random walk theory, stock prices are random and independent. From this finding the NSE is inefficient. The implies that stock market returns dropped after the holiday indicating lower trading volumes. This is inconsistent with the EMH as the information ought to have been factored in the stock prices.

Atala (2015) studied the effect of holidays on Muslim holidays and confirmed that the returns prior to the holiday dropped, this is consistent with our findings for the existence of the pre-holiday returns. Rasugu (2005) Confirmed that there exists no holiday effect on NSE. Rasugu's Study was done close to two decades ago and there have been changes in the economy and NSE together with the covid pandemic. According to Hemed (2015) research done on stock market anomalies at the NSE have continued to demonstrate a volatility of the stock.

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the study can be extended to other textile stocks traded on the Bombay Stock Exchange. This study is inconsistent with our finding as for our case the returns have dropped after the holiday.

This result answers our second research question and concludes that there is a post-holiday effect on stock market returns of commercial banks listed at the NSE, Kenya.

Disparities between Pre and Post holiday returns and Stock Market Returns

It was noted that the returns for the preholiday period were significantly lower (0.002709595) than the post-holiday return (0.005525966). This confirms that there are disparities between pre- and post-holiday returns. Investors experienced lower returns before the holiday compared to the period after the holiday. The confirms that the investors can use a trading strategy to buy low and sell high thus making abnormal profits.

This is inconsistent with the random walk theory which speculates that stock prices and random and independent. This disagrees with the study done by Rasugu (2005) where he concluded that there was no disparity between pre-holiday and post-holiday return and agrees with another study by Omar (2015) showing there is a disparity between pre-holiday and post-holiday return on stock market returns. This result answers our first research question and concludes that there is a pre-holiday effect on stock market returns of commercial banks listed at the NSE, Kenya.

Al-Loughani (2005) examined the effect of holidays on the Kuwait Stock Exchange (KSE) for the period 1984-2000. They compared the price/earnings ratio on the trading day immediately preceding the holiday (pre-holiday) and the rest of the trading day (regular trading day). Post-holiday returns were higher than pre-holiday and other normal trading days, according to the findings. The reason for this observation is that investors typically sell before the holidays and investors rebuild their investment portfolios immediately after the holidays. This is consistent with our result since they also confirmed that the pre-holiday returns were different from the post-holiday returns.

This answers our third research question and confirmed that there are disparities between pre- and post-holiday returns of commercial banks listed at the NSE, Kenya.

Disparities between National and International holiday returns and Stock Market Returns

The returns for the national pre and post holidays were significantly higher than the international holidays confirming that the national holidays were least affected by the holiday compared to the international holidays. This demonstrates that there is a discrepancy between the national and international abnormal returns. The national holiday mean return was for pre- and post-holiday were 0.005265761 and 0.006492812 respectively, While the International mean return for pre- and post-holiday were 0.001175896 and 0.004945859 respectively. This demonstrates that the holiday effect was most affected by the national holidays. The national holidays in this case were the Jamhuri, Mashujaa and Madaraka while the international holidays were the Christmas, Ester, Eid, Labour

Day, and New year. This could be explained by behavioral finance that different investors have different perceptions about a holiday.

According to Kamau (2017), The study for establishing the impact of different holidays on market returns, the study established that mean returns for every of the eight holidays for the duration of the pre-vacation were notably different from each other. The effects additionally indicated that the imply go back for the 8 vacations during the put up-holiday length had been additionally substantially distinct form each different. These findings are consistent to the findings of Mehran, Meisami, and Buse bark (2012) that concluded that the Jewish holidays had different returns on the holiday anomaly present inside the US inventory market. The findings of this study contradict the findings of Cao,Bhabra, and Tang (2009) whose findings imply that there was no holiday that had extra impact on the holiday returns within the New Zealand stock. This contradiction of the effects may be attributed to the difference inside the culture of the countries beneath the investigation.

Conclusions

Based on the findings, it is concluded that there exists a pre- and post-holiday effect as the mean returns are lower than the normal holiday returns. Since the mean returns for pre- and post-holiday are positive and negative respectively, we conclude that there exists a discrepancy between the pre- and post-holiday returns. The negative returns for the international holidays were significantly higher than the national holidays confirming that the national holidays were least affected by the holiday compared to the international holidays. We conclude that the international and national holidays have got different abnormal returns and international holidays experience more negative returns than national holidays.

Recommendations

Policy Makers

From this study findings, the NSE is inefficient, the capital Markets authority as the regulator should Formulate and implement policies and regulations to enable them to control and stabilize stock market performance, which is a signal of economic stability in the country. The results show that the stock prices do not reflect all available information thus disagreeing with the efficient market hypothesis. The NSE should thus focus on improving efficiencies and ensure that share prices reflect all available private and public information. This insight will also help formulate policies that are important for investor protection to the capital market authority.

Investors

This study has confirmed that the NSE is insufficient, however very few investors are aware of this anomaly, Investors should therefore use a trading strategy using this abnormally to make return on investments.

Suggestion to further research

The study recommends that a longer period of say 20 years is examined to ascertain whether the result would be the same as this will incorporate any economic changes in the period. The study further recommends researching other sectors under NSE to see whether there is holiday effect in other sectors. The study also recommends research done on non-gazette holidays such as political related non-working days.

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