

**THE TURN OF THE MONTH EFFECT ON LISTED STOCKS AT THE NAIROBI
SECURITIES EXCHANGE**

JAMES SUMBI MUTUKU

X51/81009/2015

**A RESEARCH PROJECT SUBMITTED IN PARTIAL FUFILLMENT OF THE
REQUIREMENT FOR MASTER OF ARTS IN ECONOMICS POLICY MANAGEMENT
DEGREE OF THE**

UNIVERSITY OF NAIROBI

DECEMBER 2019

Declaration

I, the undersigned, affirm that this project paper is my original work and has not been submitted for a degree in any other University or any other award other than the University of Nairobi for this award of master's in economics policy management.

Name: James Sumbi Mutuku

Signature.....

Date

This project has been presented for examination with my approval as the University Supervisor

Name: Dr. Joy Kiiru

Signature.....

Date.....

Dedication

I would like to bequeath this project to my family for their priceless support towards my studies.
May God bless you all.

Acknowledgement

This study has been furthered significantly by the intellectual support, guidance, leadership, comments and recommendations on the preparation of this project by my supervisor Dr. Joy Kiiru. Her wits and proficiency in Economics and academic support during this research process has been impeccable. Special appreciation to all my lecturers at the School of Economics whose advice and training prepared me for this paper and eventually the award of this master's degree in economics policy management. I also extend my appreciativeness to all the members of the School of Economics at the University of Nairobi.

To my classmates, friends and colleagues at Stanbic Bank Kenya, your input has been of great benefit up to this stage. To Mr. Muthiani's family, your support has been inordinate in my academic journey and special reference to my wife Catherine Muema for constantly being supportive, devoted and believing in me - I am very much obliged. In conclusion, am entirely grateful to the Almighty God to whom I have put all my faith and for helping me reach this far in my academic journey.

Abstract

The Turn-of-the-Month (TOM) effect is the transitory rise in prices of listed shares throughout the initial three days and the last trading day of the month. Most dependable market experts and policy makers attribute this monthly effect to flows of cash and liquid assets under management towards the end of the month. Accordingly, this study seeks to answer the question if indeed this monthly effect occurs on listed securities forming the NASI index at the bourse or it has disappeared given the recent market developments where information is available. The study used equities securities data that traded from October 2015 to October 2019. The study adopted the model used by Boudreaux (1995) in studying TOM in the Pacific basin market where it employed an OLS (Ordinary Least Squares) regression and conducted both parametric and non-parametric tests to run the models of this monthly equities markets effect. The outcome of the paper confirms the existence of TOM at the NSE.

The study thereby makes commendations to the various market stakeholders and participants at the bourse to objectively and considerately study the bourse for any movements in prices before making any buy, sell or hold decisions on any listed securities. Evaluation should be done on a monthly basis to ensure there is enough information for the investors to avoid risks.

Table of Contents

Declaration.....	i
Dedication.....	ii
Acknowledgement.....	iii
Abstract.....	iv
Table of Contents.....	v
List of Abbreviations and Acronyms.....	vii
Chapter one:.....	1
Introduction.....	1
1.1 Background of the study.....	1
1.1 Statement of the problem.....	4
1.2 Objective of the Study.....	6
1.3 Importance of the Study.....	6
Chapter Two.....	8
Literature review.....	8
2.1 Theoretical literature review.....	8
2.2. Stock market calendar variances.....	8
2.2.1 The Turn-of-The-Month effect.....	8
2.2.2 The day of the week effect.....	9
2.2.3. The weekend/Monday Effect.....	9
2.2.4. The end of quarter effect.....	9
2.2.5. Efficient Market Hypothesis.....	9
2.2.6. Random Walk Theory.....	10
2.2.7. Arbitrage pricing Theory.....	10
2. 3 Empirical Studies.....	11
2.3.1. Local Evidence of Empirical Studies.....	11
2.3.2 International Evidence of Empirical Studies.....	13
2.4 Conclusions from Literature Review.....	16
Chapter three.....	18
Methodology.....	18
3.0 Introduction.....	18
3.1 Theoretical framework.....	18
3.1Empirical Model.....	19
3.2Definition of Variables and Expectations.....	21
3.3 Data, Data Types and Sources.....	22
3.4 Hypotheses.....	22

Chapter four	23
Data analysis, results and discussion	23
4.0 Introduction.....	23
4.1. Descriptive Analysis	23
4.2.1 TOM days Descriptive.....	23
4.2.2 Non -TOM Days descriptive.....	24
4.3 Paired T-Test for Difference in Means	25
4.4 Turn of Month Effect	26
4.5 Estimation of Coefficients	27
Chapter five.....	29
Summary, conclusion and recommendation	29
5.1 Introduction.....	29
5.2 Summary	29
5.3 Conclusion	30
5.4 Policy Implications	31
5.5 Study Limitations.....	31
5.6 Areas of Further Research	31
References.....	33

List of Abbreviations and Acronyms

AUM	Assets under Management
Kshs	Kenya Shillings
APT	Arbitrage Pricing Theory
EMH	Efficient Market Hypothesis
NASI	Nairobi Securities All Share Index
NSE	Nairobi Securities Exchange
NSE 20	Nairobi Securities 20 Share Index
ROM	Rest of the Month
TOC	Turn of the Calendar
TOM	Turn of the Month
NTOM	Non- turn of the month
GDP	Gross Domestic Product

Chapter one:

Introduction

1.1 Background of the study

The stock markets worldwide are collectively affected by various aspects ranging from macro-economic factors such as inflation rates, existing rates of interest, the unemployment rate and the percentage of economic growth and development as captured by GDP. Notwithstanding the above macro-economic effects, the stock markets are also influenced by the traditional market variances and anomalies commonly allied to the calendar days. Such anomalies in the equities bourse afterwards affect the returns of the listed securities in the month. This allows all t market participants to make the most of the capital returns and gains made at the bourse. The market participants at the Nairobi Securities Exchange are; retail investors, fund managers, depository, Capital Markets Authority, stockbrokers, investment banks, custodians, listed corporates and share registrars.

Market anomalies can either be recurrent, arbitrary, unswerving or repetitive over a period. The investors at the Kenyan market participate at the Securities Exchange either by buying or selling of shares for the short run or long run. They also participate during corporate actions ranging from Initial Public Offers, Rights issue, bonus issue, cash calls, mergers and takeovers. Investors at the exchange mainly have the following objectives; they may be seeking to earn extra income through holding of income yielding securities, looking for growth in their asset base or mainly speculative taking advantage of the movements in prices. The aim is usually to earn dividends when corporates declare profits or sell them at a premium usually for-profit taking motives.

TOM effect is the transitory rise in prices of listed shares in the first three trading days and the last day of the month. Most dependable market participants and policy makers attribute this monthly effect to flows of cash and liquid assets under management towards the end of the month. These cashflows primarily come from retirement schemes and fund management accounts in which pensioners invest in securities for their underlying clients. Thus, this TOM study seeks to answer the question if indeed this monthly effect occurs on listed securities forming the NASI index at the bourse or it has disappeared given the recent market developments where information is accessible.

The study thereby seeks to make commendations to the various market stakeholders and participants to objectively study the market for any movements in prices before making buy, sell or hold decisions on any securities. The market investors should study the relevant market information before making any decision on the stock market. This monthly effect is still one of the oldest and the most thought-provoking anomalies of equities markets internationally. Closer home, at the NSE bourse, the TOM effect can be analyzed thoroughly by observing the behavior of securities on those four days in the market in comparison with the other trading days; (Non-TOM) days.

At the capital markets, there are numerous dominant models re-counting the market's efficiency. The efficiency of the Capital Market model being a very critical and prime topic for empirical research as familiarized by Fama using the Efficient Market Hypothesis (EMH). Successively, stemming profoundly from works done by Eugene Fama in 1965, research on analyzing equities securities has been done validating the proficiency models on the capital markets. The efficiency market hypothesis can be appraised with how the equities securities responds to any material public data, if the equities markets are informational effective such that securities prices at that point in the market reflect entirely all the material public information available.

As such, listed equities prices fluctuate suddenly responding to new material public information and data as it flows into the market, therefore no investor can take unwarranted advantage of the bourse by making uncharacteristic profit from information flowing into the market. Nevertheless, equity securities do not follow the EMH rules as this has not always been the case. Deplorably, the occurrence of variations in price and anomalies in the return of securities interrupts the Efficient Market Hypothesis (EMH) model. The non-conformities to EMH are commonly grouped in to three categories: technical fundamental and Calendar variances. The objective in this study is to analyze the existence of the turn of the month effect at the NSE.

This research used available information on listed stocks instituting the Nairobi Securities All Share Index (NASI) for four-year period starting from October 2015 to October 2019. The study collected market data and information on the market prices of the listed counters using prices volumes and indexes as already calculated at the bourse using the monthly investor bulletins, statistics and market highlights, and then used OLS regression model to test significance of mean returns to check if at all the TOM effect exists at the NSE on the selected four trading days under study.

The benchmark NASI Index is the weighted price guide estimated as the mean of all listed equities stocks at the bourse. On the other hand, the NSE 20 index is composed of the stocks performing well at the exchange and the constituent firms forming this NSE 20 index is built on the below principles: measure of business activities, that is, capitalization of market, volumes traded in shares, liquidity as well as turnover evaluated in the ratio of 4:3:2:1 correspondingly; the listed entities shares should be less than 20% being quoted at the NSE; the minimum market capitalization should not be less than Kshs 20 million. The listed corporate entity should be a blue-chip entity having higher productivity in terms of profits and a record of dividend payouts.

Further to this, NASI also has an element of the NSE 20 which as at the date of this research encompasses; Nation Media Group and Scan Group Limited in the sector of commercial, whereas the banking grid covers KCB, NCBA, DTB, COOP, ABSA, Equity and NCBA while BAT, EABL ARM form the manufacturing and allied wing. The petroleum and energy include KenGen and Kenya Power and Lighting Company while Britam and Kenya-Re constitute the Insurance segment. Safaricom is the only counter in the Telecoms space while the investment segment comprises NSE and Centum.

The history of the NSE can be outlined back to 1920 when trading in shares in the market was decently a nobleman prearrangement with no physical trading floor, capital markets regulations, depositories, investment banks, brokers, fund managers, trading platforms or systems. The markets, however, technologically progressed until 1988 when the first ever corporate action on privatization occurred at the bourse, via the successful selling of Kenya Commercial Bank shares to the public by the Kenyan government.

This maiden transaction set the precedent for other corporate issues in the market ranging from initial public offers, rights issues, cash calls, mergers, acquisitions, and bonus splits. Subsequently, the bourse endured its historical predicaments following the sudden corporate financial breakability and the drastic economic slowdown between 1998 and 2002. During this period, all listed corporates went through a lean time with many reporting vast losses, with non-payment of dividends.

Nairobi Securities Exchange was the poorest performing stock market in Africa for the month of September 2017. As at April 2018, the NSE 20 index had not yet hit the 4000-spot recovering from the long electioneering period the country had in 2017. This loss had effect on Investors' returns in terms of capital gains and the non- payment of dividends.

The unfortunate performance was primarily ascribed to political risk after the twofold elections in the months of August and October 2017. This political effect had an impact on the bourse as it was momentarily stationary. Differences over the administration of this re-run election raised uncertainties that the authorities could miss the court-imposed deadline on having a second election of the president, which would as such swift and plunge the country into a constitutional calamity.

The ruling of the Supreme Court of Kenya toppling the presidential election that was held on 8 August 2017 led to a circuit breaker at the Nairobi Securities Exchange leading to the bourse closing for 30 minutes. According to NSE, the rules of trading need the bourse to close the floor if an index dips by more than 5 per cent sternly.

1.1 Statement of the problem

As alluded above, capital gains and equities yields can be projected by market behavior which is affected by numerous macro-economic factors and other anomalies. Since its inauguration in 1920, the Kenyan Capital Markets has been active with over eleven decades legacy in corporate actions, listing equity and debt securities, providing trading platforms for both international and local shareholders targeting to gain from the economic growth of Kenya as well as from the East Africa region. The NSE plays a very domineering part in the development of the economy of Kenya by stirring savings, investment, and supporting companies both nationally and transnationally to access capital financing at minimum cost.

As such, a comprehensive, all-inclusive and well explored study to act as guidance to the investors would be very critical as they are not only definite of superior returns when their earning power has enhanced but also the time and day of the month can also play a weighty role. Therefore, the information of market variations is of ultimate importance. This would in turn signal to them the ideal time to buy, hold or sell stocks in the market.

In 2018, in the Kenyan equities market, investors' total turnover for the equities segment was Kshs 343 billion and Kshs 872 billion for the secondary trading market. This includes both the buy and sell sides of equities and bonds in the secondary market by both local and foreign investors. Given the consequence of the capital inflows and outflows in the market, a study to provide investors with the right information on this monthly effect is vastly useful to both the foreign and local institutional, foreign and local individual investors segment at the Nairobi Securities Exchange.

Very diminutive research on securities market has been done predominantly on stock market anomalies particularly ascending from the calendar effects. Rasugu (2005) considered in his study, the holiday effect existence at the NSE with his conclusions giving no presence of the effects of holiday at the bourse. In his study, Mokuu (2003) studied the weekend effects on the returns of equities shares at the Nairobi bourse and made a deduction that the returns of Monday are not less equated to other days and the Friday returns are not better equated to the returns of the other days. Ndungu (2003) studied the size effect at the NSE and concluded that the size effect is feebly revealed at the NSE.

The deficiency of research studies on the TOM effect in Kenya thus creates an immense knowledge gap. Thereby this project research work on the monthly returns effect aims to establish the return of this monthly effect using proof from all the listed stocks forming NSE All Share Index thus answering the question; does TOM effect exist at the NSE?

1.2 Objective of the Study

The prime objective is consequently to investigate existence of turn of the month effect on the listed stocks at the NSE. Thus, this research paper seeks to answer the question: does the TOM effect exist on listed stocks forming the NASI Index at the NSE?

The specific objectives being;

1. To determine if the TOM exists in securities returns forming NASI Index;
2. Develop a model for investigating this monthly calendar effect at the NSE; and
3. Suggest policy recommendations.

1.3 Importance of the Study

This study work is imperative based on the below contributions to the field of research. This research paper seeks to fill the knowledge gaps existing on the theories of Efficient Market Hypothesis. This will thus provide invaluable insights and information to scholars, academicians and researchers as well as add more inputs and point out areas requiring more research. This research will consequently help in opening opportunities for doing further research on market efficiency.

A rational investor would therefore make the investment process of decision-making to align with the selection's outcome with the optimal level of profit or returns for the individual or the fund. The formation of conventional theories in economics is based under the supposition that everybody who is participating in any activity is rationally behaving and has information about the markets. As such, this research work will be quite useful as it will inform them of the anomalies in the markets and their effects on the returns. This also would be quite useful to stockbrokers, fund managers and dealers as they would know when best to maximize their returns.

The Nairobi Securities Exchange would find this extremely important in terms of adoption and implementation of the policies and framework they need to put in place to improve efficiency in the Capital Markets.

The stakeholders in the Kenyan government will monitor the securities market. The capital inflows and outflows from foreign investor participations in the market can signal economic stability of a country. Through this, the government can come up with policies aimed at making major reforms to attract the right capacity of local and foreign investment. Through capital inflows and outflows, the country will be able to formulate proper monetary policies in terms of currency stability, pricing and movements.

Chapter Two

Literature review

2.1 Theoretical literature review

This part assesses existing literature and ensuing implications of EMH at the bourse. Further still, it introduces the concept of calendar variances in terms of effect of the days on listed stocks forming the Index. Additionally, this chapter will offer indication against efficient market hypothesis, the empirical literature and summary of literature review. The study of market anomalies is mainly based on four key theories: Random walk Model, Arbitrage pricing Theory, Calendar variances and EMH

2.2. Stock market calendar variances

2.2.1 The Turn-of-The-Month effect

This calendar effect relates to rise in prices of equities stock in the first and last days of the month. Most of the current works done by researchers ascribe this effect to calendar timing and cyclical nature of end-month flows of cash received by retirement income and reinvested in the securities market. A lot of studies and enquiries have gone into this subject.

Through precise reference of dependable findings by Ariel (1987) and Lakanshok and Smdt (1988) on the equity returns in the United States, returns increase oddly over the interval of the four last trading days and the first three days of the month. This agrees with this study on TOM effect anomaly to efficient market hypothesis. Hereafter, these days as alluded above, are acknowledged as the TOM period.

Supplementary research as submitted by Ogden (1990) proves that this monthly effect is mostly liquidity determined. This infers that the results of this monthly effect are mostly due to accessibility of cash flows in the market. Other than pension fund activities; (in this case fund managers and institutional investors), cash receipts such as salaries, bonus and wages, dividends, interests and principal payments at the end and beginning of the month are quickly re-invested resulting in the surge in stock returns. In his recommendation, Ogden advocated for a standardized payment system.

2.2.2 The day of the week effect

This daily outcome on stock movements and behavior produces yields dissimilar from each day in the week thus swerving meaningfully from this EMH which sustains that the returns of any stock is impassive to any trading day. The abnormalities in the returns affect investors when choosing the investment strategy on their portfolio. This effect of the day affects the returns of the equity as well the volatility of the markets.

2.2.3. The weekend/Monday Effect

This effect on securities exchange is the leaning equities values and prices to be low on Mondays and increase in value on other days. The theory grips that Friday incomes are considerably better than the other days in the week. Monday yields in terms of revenues are suggestively lesser than the other days of the week. Unlike this EMH proposition, the equities prices tend to start the week slow then close strong at the end of the week.

2.2.4. The end of quarter effect

The end of quarter effect maintains that the yields of equities are meaningfully better during end of the quarter compared to other periods in the year. This denotes to one of four specific three-month periods on the financial calendar (March, June, September and December). These four quarters are recognized as crucial periods for investors. Many organizations, business experts, government agencies and central banks provide important information regarding various markets or the indicators of economics at periodic quarterly meetings.

Throughout each quarter, it is a joint practice for most hedge funds, retirement funds and companies of insurance to rebalance their portfolios. As much as this belief is someway contentious and generally has insufficient extensive evidence, it highlights the concept that the end of quarter is imperative.

2.2.5. Efficient Market Hypothesis

This proposition established by Eugene Fama (1960s) claimed shares trade fair value, thus investors are unable to buy undervalued stocks or offer stocks that are hyped in price. As such, it will not be possible to outdo the stock market through proficient shares assortment or timing of the market, and that a shareholder will possibly get improved returns is decently coincidental or by buying investments that are riskier. This theory as established by Fama shows how the market responds swiftly and exactly to data and information new to the market (William, 2002).

Further analysis and research have gone into this theory as it has been a major concern for academicians. Copeland and Galai (1988), prior to the 1950s, it was thought that old investment study may as well be applied to outstrip the securities market. 1950s studies emerged alluding that changes in stock prices trailed a random pattern. These theories and research are what led to the efficient market concept.

Conversely, Eugene Fama further argued that markets will never achieve optimum efficiency levels of 100% since the stocks took time to correct to the available information. For efficiency to be achieved by the market, there needs real time access to pricing systems, wide-ranging absence of the people in decision making process to invest and acceptance by investors that their returns will be the same for everyone.

This puts it clear that prices of the stock replicate information that is available and the expectations thus making it possible for the prevailing prices being the greatest approximation of the intrinsic value of the company. This would prevent anybody from exploiting stocks that have been mispriced on a consistent basis since the movement of price is extremely random and being driven by events that are unforeseen.

2.2.6. Random Walk Theory

This alludes that differences in price of a securities have distributions that are similar and autonomous such that past movements in prices cannot predict its imminent future prices. As such, stocks take an irregular path.

According to Maurice Kendall (1953), the Random Walk Theory of investment that maintains the prices of the market are uneven, lacking impact by earlier prices, thus its unable to predict the market accurately. At random reception of new information, the price varies will be arbitrary in no explicit direction hence the random walk theory.

2.2.7. Arbitrage pricing Theory

This is a pricing model for assets that maintains that the projected yield of the fundamental monetary asset will always be precast as a linear function of numerous parameters which can be variables or indices and thus the ability of each factor variation is characterized by beta coefficient. This theory was established by Stephen Ross (1976). Therefore, accordingly there's correlation between the portfolio returns via a linear consolidation of the autonomous variables affecting the underlying assets.

Thus, returns of any stock can be correlated to various variables affecting the underlying stock. Through this model, the rate of return derived from the asset is used to set the pricing of that asset correctly. Asset price and expected discounted returns as implied in this model are the same. Assuming price departs from the same, arbitrage model should reverse this change.

2. 3 Empirical Studies

There have been numerous studies completed on this monthly effect and successively various calendar variances and their consequences on the equities market. This section will therefore focus on both local studies and international evidence of present empirical literature on this monthly effect on equities.

2.3.1. Local Evidence of Empirical Studies

Mulumbi (2010) in his research studies did a detailed examination of the securities market in Kenya in this respect with focus of the study being to investigate if at all the TOM effect occurred in prices of equities stocks as specified by the NSE. His focus primarily was to examine if the cyclical and seasonal patterns as well as calendar variations in markets data like the US are also present in the Kenyan data at the NSE, and if present then to what degree. From the results of the study, it was found that average return for stocks at the NSE was more during the last trading days instituting the last and first days of each month. Consequently, yields for TOM days will be better compared to the yields on the non-TOM days. This is in line with the studies implemented in this research paper.

However, the findings in his paper came to the inference that the TOM effect was autonomous and different from all the other effects associated with the calendar such as the holiday and January effects and the outcomes are the same with the US findings. In his study he adopted the descriptive survey approach as this approach depicts accurately the dealings in terms of buying or selling of shares while one is still able to collect volumes and large sizes of data in a cost-effective way conscious of the fact that such data may contain errors.

Then, using regression and correlation analysis he succeeded in investigating the data as provided by the monthly bulletins and market highpoints reports from the bourse. Using regression analysis, he was able to analyze the model as regression allows one to express a relationship between the variables under study whereas using correlation to test the overall variables significance. The results of the study

established indeed the TOM effect at NSE occurs with the determinant coefficients of companies listed at the bourse being more than 90%.

Muragu (1990) in his study on the equities markets considered movements in prices at the bourse. His prime concern for this study was on efficiency of the equities markets and how the changes in prices affects the market. His study significantly focused on the market efficiency at the securities bourse. The deductions established that random walk is relevant and still holds greatly for the Kenyan stock market, as such there are no organized formats and outlines in the way the stock price moves; and prices of the shares to be traded in the future are unconditionally independent and not influenced by the prices in the past.

This study by Miragu (1990) corresponded with the findings by King'ori (1995) who in his work sought to determine whether the bourse displays any seasonality be it monthly and quarterly. The study concluded that the stock mean yields are identical in all the quarters and months reviewed. There was no presence of the effect of January in his study.

Wachira (2013) considered the January effect and the returns of the market at the Kenyan bourse. In his study, he studied all the listed equity stocks as at end of year 2012 at the NSE. He considered data contained in daily values of benchmark indices; NASI and NSE 20 by considering the various listed companies constituting the index. The existing data from the exchange was investigated using regression analysis. The findings from his study showed coefficients which were negative in the model used. Thus, providing an indication of presence of January effect because the implied earning we greater earnings in January in comparison to other months. Indication by analysis of the T-statistics showing that January effects do not exist at NSE. Therefore, more research ought to be done to find out the motivation for January effect existing in this market.

Mokua (2003) objective was to establish if the weekend effect on securities yields for entities listed at NSE have variations. In his study he used the daily stock returns and equality of means to test for the seasonality in several stocks quoted at the NSE from April 1996 to March 2001. His study concludes that the yield on securities on Monday are not pointedly lesser than other days neither are the securities yields on Friday expressively better than the rest of the days of week. He concluded that weekend effect at NSE did not exist for the period in which he undertook his study at the Exchange. Given the

self-motivated market activities and the level of investor consciousness, it would be significant to find out if the equities yield at the NSE show the TOM effect variations.

Osman (2007) considered the holiday effect attempted to find out if stocks listed at the NSE exhibit higher returns on average on the days preceding holidays. His study ran a span of nine years being January 1998 to December 2006 considering the eight-day window, being four days before and four days after the holiday. His sample population involved all the companies constituting on NSE 20 index, 20 stocks constituting the NSE 20 share index. He used regression on NASI index and correlation analysis in his study. The applied correlation analysis to test for multi-collinearity amongst the indicator and the index. Little correlation coefficient submits that the relationship between the two variables is feeble or simply does not exist. He found no holiday effect on stock returns at the NSE and hence a strategy of investing around holidays cannot be used by investors. Rasugu (2005) in his study of the holiday effect found no holiday effect at the NSE. Osman (2007) study used the AIG index and it would be important to do a study using all the firms trading in equity stocks at the bourse.

Samuel (2009) studied the effects of the day of the week and month of the year in Nairobi securities bourse; subsequently, he observed there are assumptions on the capital market to be effective relative to the immediate integration of all existing data on prices of securities. Capital markets studies on its efficiency has shown mixed reactions some of which conflict to the Efficient Market Hypothesis and all the existing efficiency theories.

His study aimed at determining if there is existence of daily and seasonal variances at The Exchange (NSE), he examined statistics on the NSE 20 index by applying the regression model to categorize features of equities investors both local and international in Kenya from 1980 to 2006. Outcomes showed that there are lowermost yields of products on Monday while Friday and January yield the major positive earnings. These results are valuable in consolidating the evidence of nonconformity from efficient market hypothesis and making inferences about variances in a developing securities market.

2.3.2 International Evidence of Empirical Studies

Al-Rjoub (2004) had carried out the examination of the robustness of proof on the weekend anomaly in stock return statistics after counting for the impact of possible errors of measurement and the sizes of samples. The sample used the alternative assumption of unequal income across various trading days in the week. The findings were that the initial days of the week incomes were continuously and insignificantly negative across various time frames. The day's average income right after the start of

the working week was constantly and significantly negative. Thereafter, having regulated the change of the working week to start on Sundays; results had shown that the incomes of the end of the week incline to be meaningfully positive and the greatest while most of the cases the incomes of Sunday was considered negative and the worst

The study provides possible explanations stating that the high positive significant returns of Thursday was the expected settlement practices, which means that there is high closing on Thursday compared to Sunday. The expert market watchers who were aware of the return pattern per day should change the timing of their purchasing and selling so that they can take the advantage of the effect. However, the new logical implication of the research was "Don't Sell securities on the second day of the week".

Gao and Kling (2005), who explored the effects of Chinese equities bourse on daily and monthly basis, their research findings indicate an adjustment of the calendar effect on personal securities returns. The returns were found to be strong in the year 1991 both in Shanghai and Shenzhen but disappeared later. Similarly, there is highest yields in the months of March and April especially at the end of year for the Chinese is February. The study resolved that the last day of the week (Friday) has better yields according to the daily effect.

Also, it has been noticed that funds for the business are used for short term speculations before being reimbursed just closer to the weekends since investors from Chinese embezzle business funds meant for business to carry out private trading.

Malkiel (2003) associates EMH with random walk concept. Consequently, the theory maintains the changes in the price of a securities have distributions that are similar and autonomous such that past movements in prices cannot predict its imminent future prices. As such, stocks take an irregular path. This term, lightly applied in finance, meaning that existing securities prices are different from the random walk idea is a logic which states that if information flows unhampered and data is reflected proximately in the securities prices, then tomorrow's variation in price will imitate tomorrow's news thus being autonomous of today's price change.

Market updates are volatile and thus ensuing changes in price ought to be erratic and arbitrary. Consequently, prices represent all known information and rational investors who are not yet informed buy a differentiated portfolio at the tableau of prices reflected by the market obtaining the return rate as that realized by securities experts.

Malkiel study examined price reaction of equity shares around the announcement of half-yearly earnings and reaction to unexpected earnings announcements between January 1990 and March 1996 in the Indian capital market. He used empirical tests to find out whether semi-strong form of EMH applies to describe securities price behavior in the stock market of India. He concluded out swift alteration of securities prices to the earnings declarations leaving no possibility for stockholders to outclass the securities bourse by studying outcomes and then make investment conclusions. A buy or hold approach for securities is the best investment practice since prices will always imitate all existing material information.

Grossman and Stiglitz, (1980) in their study of the informationally efficient markets analyzed the behavior of securities prices. The impressive evidence supporting this theory says that it may be very hard and pricey to detect cases whereby securities that are priced incorrectly. Moreover, the bourse is essentially ineffective to allow informed traders to recuperate their costs of collecting information or none would be collected.

Their main objective was to find out whether fund managers can analytically outpace the market. They used capital market model to study annual rates of yields of thirty-four open end mutual funds from 1954 to 1963. They find that asset price movement over brief horizons are adjacent to a random walk, new info is swiftly fused into asset prices and fund managers seldomly outpace the securities market on a steady base.

Lofthouse (2001) and Sharpe (2001) work also concluded that securities prices move in an arbitrary style and that it is unlikely to outpace the market except by coincidence. With advent of mutual funds and its successive trading on the Nairobi Securities Exchange, Fund managers would be concerned to know if they can exploit the bourse in the weak form.

Fama (1970) defines an efficient market as one in which securities prices replicate the existing information. Studies in the 1970s onwards suggest that the bourse is less than seamlessly effective. In his study, he made a distinction between 3 forms of market efficiency. Fama (1991) reviewed the literature again in three groups.

He substituted weak form efficiency with tests for returns predictability, the semi-strong form efficiency with event studies and strong form efficiency with tests of private information. Return predictability had greatest impact.

His main objective was to find out whether securities prices ‘fully reflect’ a subset of existing info. He studied the daily yields on the 30 Dow Jones Industrial stocks by testing statistically significant correlation coefficient of lags ranging from one to ten days by use of serial correlation analysis. The findings were that only a few correlation coefficients were found to differ statistically from Zero and that only trivial fraction of succeeding price changes could be explained by preceding changes. This was also supported by the sign test.

Generally, capital market proficiency has been established in great and sophisticated capital markets of industrialized countries. It would be important to test the same in the developing countries and the Nairobi Stock exchange can be a representative of the developing capital markets.

However, any refuting evidence against EMH is considered as a variance and is incorporated in relatively ad hoc alterations to the old theory Lofthouse, (2001). It is expected the variances ultimately be shown to be inaccurate or a new theory will arise. These ad modifications seem inevitable in the case of EMH because all tests are joint tests. Lofthouse (2001), Sharpe (2001), Copeland (1988) tests an asset pricing theory at the same time as the EMH. They conclude that efficient market hypothesis is modest in principle but remains subtle. Since asset pricing theories like Capital Asset Pricing Model are used to measure normal returns, any anomalies may be either due to efficient market hypothesis or the asset pricing theory used.

There is still a lot of evidence of efficiency or near efficiency and evidence of inefficiency is tricky to interpret because of the joint hypothesis problem (Lofthouse 2001). On one hand variances behavior may be a signal of market inefficiencies.

In the sixties, determination of prices of common equities stock was such a controversy. The controversy focused on the successful price changes were not necessarily depending on each other. The major issue in this case was whether share prices followed a random walk.

2.4 Conclusions from Literature Review

From the above empirical studies done by different scholars both Local and International in different markets, the findings show that there is an inclination of securities returns to somewhat be better throughout turn of the month days compared to the other days of the month.

It is on this note therefore that this study is aimed at investigating whether the securities returns at the NSE depict the TOM effect variations.

Capital Market efficiency studies done in Kenya have concentrated on the weak form efficiency basing their research on corporate announcements, with very few vouching for Calendar anomalies especially the TOM effect. For instance, Mokua (2003) and mokara (2004) on earnings, Onyango (2005) and Twala (2005) on Dividend, Karanja (2006) on rights issue, Atiti (2005) on price momentum, and Atogo (2009) on stock split, with conflicting market efficiency. Majority of these studies were conducted for a period of one year covering various facets of public corporate announcements. Fama (1991) argues that for markets to be judged efficient then they need to gather evidence on various facets on information affecting returns and at various times in order to support the evidence of efficiency at any given level.

The above review indicates that the motion about the efficiency of the market will progress with its supporters arguing that markets are informally efficient while those against the idea continue to give out new evidence regarding the efficiency of market as well as the abilities of locating chances to achieve abnormal returns. Meanwhile, the EMH is still an important and extremely substantial area of interest and its significance increases in the search for investing opportunities in emerging markets. It is in this premise thus a study on the TOM effect in the Kenyan equities' bourse will serve to add to the discussion on the stock market efficiency. If it is correct that securities prices show better yields on the turn of the month, then it follows that rational stockholders will be able to make higher yields on their assets if the purchase securities on the other days of the month and sell them on the TO days.

Chapter three

Methodology

3.0 Introduction

This chapter presents the theoretical framework of the study, the empirical model used, the definition of variables, and the last section presents the data analysed, data types and sources.

3.1 Theoretical framework

The study endeavors to examine if the TOM effect still occurs or it has vanished at the Kenyan equities bourse as the stock market has over time boosted its efficiency in terms of access to market information and the various market participants are now more conscious and conversant with the market. The study wanted to test the weak form of EMH by Fama and French (1965) that highlights that shares will continuously trade at their actual market values and that securities prices imitate the obtainable information. According to them, the rate of return of securities depends on prices at that time. That is;

$$R_t = f(p_t, p_{t+1}) \dots \dots \dots (1)$$

Given;

- R_t the rate of return of the securities at time t,
- p_t is the securities price at the end of the day t,
- p_{t+1} is the securities price at the end of day t+1.

In the end Fama and French, performed the first differential of the natural logarithms with their variable of interest being shown below in equation 2.

$$u_t = \log e^{p_{t+1}} - \log e^{p_t} \dots \dots \dots (2)$$

They used u_t to assess the changes on the logarithms of prices (the change in log price is the yield, by constant compounding, after holding the stocks for the day) and in turn helps in assessing the TOM effect by comparing yields of the days forming the TOM and the days not forming this monthly effect (Non- TOM)

3.1 Empirical Model

The study adopted the model used by Boudreaux (1995) in studying TOM in the Pacific basin market. The researcher assumed that the daily securities prices and returns in each year or month follow a geometrical random walk as shown in the equation 3 below:

$$R_t = \ln\left(\frac{Index_t}{Index_{t-1}}\right) = a + u_t \dots \dots \dots (3)$$

Where;

R_t is the compounded rate of return of the securities index,

$Index_t$ is securities index at the current time t ,

$Index_{t-1}$ is the securities index in the previous time period $t-1$,

a is a constant

u_t is a random variable with an average of zero. The above model assumed that the mean change of the stock index was the same for every month.

The study used data on listed securities forming the benchmark NSE All Share Index (NASI) on monthly basis for four years running from October 2015 to October 2019. To capture the monthly effects of the changes on the NSE All Share Index, the study used OLS (Ordinary Least Squares) model as shown in model in equation 4 below (Wong et al., 2007).

The study also held that there were other factors that may have determined the TOM effect besides as a control, we run an independent model that considered other factors that determined the return on the securities. The key factors investigated included inflation rates (IF_t), Prices of securities on the TOM and Non- Tom Days, NASI Index.

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + e \dots\dots\dots (4)$$

Where:

Y=return rate of stock

B₀= constant

X₁= price of securities on TOM days

X₂= price on securities on Non-TOM days

X₃=NASI (Nairobi Securities all share index)

X₄= inflation rate

e= error term

3.2 Definition of Variables and Expectations

Variable	Notation	Description	Expected Sign
Return on Stock Indices	R_t	This is the securities and equities market yields as computed from the prices of particular securities and is naturally a weighted average of that share.	+VE
NSE All Share Index	NASI	This benchmark index is a price weight index calculated as a mean of all the shares of publicly listed entities. The stock constituents of this index are all the listed shares at the bourse.	\pm VE
Inflation	IF_t	This is the general and persistent increase in general price levels of goods and services as measured by CPI.	\pm VE
TOM Prices	PT	This are stock prices of the entities at the NSE during the four trading days forming the TOM effect	+VE
Non-TOM Prices	PNT	This are the securities prices of entities listed at the NSE on the other days in a month	+VE

Source: Author's compilation

3.3 Data, Data Types and Sources

The study mainly used secondary market data available at NSE. In this case we will use both financial data on prices of stocks constituting the index, and value of NASI will be used in the analysis using a data gathering sheet, the securities prices, and closing index values will be collected from the daily price list.

The data was checked against the NSE market statistical bulletins and trading highlights for consistencies. The data included daily prices and returns from October 2015 to October 2019. Any of the securities not actively trading and not forming the NSE All share index were not included for the purposes of this study.

3.4 Hypotheses

The null hypothesis was: **H₀: R₁ = R₂** and the alternate hypothesis: **H₁: R₁ ≠ R₂**, where R₁ represents the yields at the turn-of-the-month period and R₂ represents the returns for the rest of the month. The null hypothesis (H₀) aimed at showing that there is no substantial change in yields as the month turns-over as equated to other trading days. The alternate hypothesis (H₁) aimed at providing evidence of change in yields during the turn of the month as compared to other trade days for each tested TOM period

Chapter four

Data analysis, results and discussion

4.0 Introduction

This chapter presents data analysis, study findings and discussions based on the study objective which was to identify the TOM effect at the Kenyan equity's bourse using the securities constituting the benchmark index NASI. The study used data attained for 4 years from October 2015- October 2019 which used four trading days of the month; the first three days and the last day of the month to see the TOM effect. The study collected the NSE All index, daily volumes and prices traded and inflation rate to determine the rate of return of stock. The study used STATA Version 25.0 to aid in data analysis

4.1. Descriptive Analysis

This segment presents the descriptive aspect of the study based on the population. It summarizes the TOM effect of the respective years under study for the listed companies at the NSE covering a period from October 2015 and October 2019. The study presented descriptive statistics for the last three days of the month and the first day.

4.2.1 TOM days Descriptive

Table 1: Tom days descriptive

Year	Minimum	Maximum	Mean	Standard Deviation
2015	-0.54	53.17	0.1368	2.31870
2016	-134.75	90.70	0.3572	5.34592
2017	-152.06	527.85	0.9322	19.4767
2018	-123.47	423.53	0.4204	8.2806
2019	-68.07	602.69	1.3581	13.2456

Source: Research Findings, 2019

The above results show the TOM effect on the four days used for every month within the study period. 2015 minimum was of negative 0.54, a high of 53.17, a mean of 0.1368 and a standard deviation of 2.31870. The period of 2016 shows a minimum of negative 134.75, a high of 90.70, a mean of negative 0.3572 and a standard deviation of 5.34592. During 2017 the minimum was negative 152.06, a high of 527.85, a mean of 0.9322 and a standard deviation of 19.4767. The period 2018 shows a minimum of negative 123.47, a high of 423.53, a mean of 0.4204 and a standard deviation of 8.2806.

The period 2019 shows a minimum of negative 68.07, a high of 602.69, a mean of 1.3581 and a standard deviation of 13.2456. The summary from table 4.1 above implies the 4-day TOM window experienced an abnormal loss of 152.06 and a gain of 602.69. The mean values however suggest that most returns ranged below 1 with an exception of 2019 which had a mean of 1.3581.

4.2.2 Non -TOM Days descriptive

Year	Minimum	Maximum	Mean	Standard Deviation
2015	-29	55.47	0.1867	2.0892
2016	-122.63	93.66	0.5512	5.1044
2017	-150.45	567.58	0.8722	18.7651
2018	-129.67	445.83	0.4164	8.0071
2019	-72.23	625.19	1.0561	13.4315

Table 2: Non-TOM Descriptive

The above results show the TOM effect on the rest of the days for every month within the study period. 2015 minimum was of negative 0.29, a high of 55.47, a mean of 0.1867 and a standard deviation of 2.0892. The period of 2016 shows a minimum of negative 122.63, a high of 93.66, a mean of negative 0.5512 and a standard deviation of 5.1044. During 2017 the minimum was negative 150.45, a high of 567.58, a mean of 0.8722 and a standard deviation of 18.7651.

The period 2018 shows a minimum of negative 129.67, a high of 445.83, mean of 0.4164 and a standard deviation of 8.0071. The period 2019 shows a minimum of negative 72.23, a high of 625.19, a mean of 1.0561 and a standard deviation of 13.4315. The summary results above imply that the stock of prices for the rest of the days experienced an abnormal loss of 150.45 and a gain of 625.19. The mean values however suggest that most returns ranged below 1 with an exception of 2019 which had a mean of 1.0561.

4.3 Paired T-Test for Difference in Means

The study conducted a paired t-test for the four day turn-of-the-month windows at the NSE for the years 2015 to 2019. A paired t-test was used to test whether there is a significant difference in the mean of the turn of the month days and the rest of the days in the month. The level of significance was 0.05 (5%).

The null hypothesis for the TOM effect was **H₀: R₁ = R₂** indicating no difference in returns between the turn-of-the-month and the rest-of-the-month and the alternate hypothesis was **H₁: R₁ ≠ R₂** which aimed at showing the variance between the TOM period and the rest-of-the-month is significant. The level of significance between the TOM windows detects the most profitable period.

Table 2: PAIRED T-TEST for TOM days Vs Non – Tom Days

Period	Tom - 4 Days Returns	Non- Tom 4 Days Returns	Difference	Turn-Of-The-Month Effect	P-Value
2015	0.0473	-0.0215	0.0688	Positive	0.021
2016	0.0802	0.0468	0.1270	Positive	0.000
2017	-0.9063	-0.7773	-0.129	Negative	0.716
2018	0.6813	0.0312	0.7125	Positive	0.004
2019	0.4527	0.2516	0.2371	Positive	0.075

Source: Research Findings, 2019

The table above shows the t-test statistics for the 4-day TOM days. The mean returns indicated a positive TOM effect for 2015, 2016, 2018 and 2019. However, 2017 recorded a negative TOM effect. 2015 had a p-value of 0.021 which is less than 0.05 meaning it was significant. 2016 and 2018 also had significant p-values of 0.000 and 0.004 respectively indicating there was a TOM effect in those respective years.

However, 2017 which had a negative TOM effect had a p-value of 0.716 which is greater than 0.05 at 95% confidence interval level. 2019 also showed no significance between the TOM effect in the four days and the rest of the days since the p-value was 0.075 which is greater than 0.05 at 95% confidence interval level.

4.4 Turn of Month Effect

The study findings were aimed at identifying whether there is TOM effect at the NSE.

Table 3 The turn on month effect

Year	Observations	Mean	Standard-Error	t- value	p- value
2015	12	0.1368	0.551	1.2	0.0645
2016	48	0.3572	0.287	0.65	0.023
2017	48	0.9322	0.396	1.3	0.015
2018	48	0.4204	0.373	1.1	0.005
2019	39	1.358	0.344	0.35	0.125

Source: Research Data, 2019

From the results above, 2015 had 12 observations with a mean of 0.6615 and was not significant at 95% confidence level since the p-value (0.0645) was greater than 0.05. 2016, 2017 and 2018 all had 48 observations and were significant at 0.023, 0.015 and 0.005 respectively at 95% confidence interval. 2019 had 39 observations with a mean value of 0.127 and a p-value of (0.125) > (0.05) which indicated that it was not significant.

4.5 Estimation of Coefficients

The results below show the regression coefficients of the variables used to determine the return rate of stock for the period of October 2015 to October 2019

Model	Unstandardized Coefficients		Standardized Coefficients	t-statistic	Significance
	B	Std. Error	Beta		
(Constant)	25.431	10.900		0.733	0.124
NASI Index	0.161	0.073	0.309	2.211	0.032
Inflation	0.414	0.350	0.162	1.185	0.002
TOM Prices	0.234	0.170	0.522	1.491	0.013
NON-Tom prices	0.002	0.002	0.090	.652	0.517

a. Dependent Variable: Return of stock (Rt)

Source: Research findings, 2019

From the study findings, attributed from the four days in the four years to determine whether there is a TOM effect. Return on stock was the dependent variable while NASI index, Inflation, TOM prices and Non- TOM prices were independent variables. The constant variable had a positive coefficient of 25.431 which implied that the return on stock will remain at 25.431 regardless of whether there is a turn on month effect or not.

However, it was not statistically significant with a p-value (0.124) > 0.05 at 95 % confidence interval. NASI index which includes all the companies listed had a positive coefficient of 0.161 which was statistically significant at 95% confidence interval since 0.032 is less than 0.05. Inflation rate had a positive beta coefficient of 0.414 implying that an increase in the inflation rate will cause a 0.414 increase in the return on stock which was statistically significant since p-value (0.002) < 0.05 at 95% confidence interval.

The TOM price had a positive beta coefficient of 0.234 implying that an increase in securities prices throughout the four days turn of the month effect will lead to a 0.234 increase in the return to stock. The p-value was 0.013 which is less than 0.05 signifying it is statistically significant at 95% confidence interval level. This implies that on the four trading days of the month, for the 4 years under study, stock markets return were higher compared to the other trading days of the month.

Therefore, the TOM effect exists at the bourse for both the high priced and low-priced securities at the NSE. Furthermore, given the relationship between securities yields and the NASI index it is clear there is a TOM effect which increases the price earnings per share ratio thus the volume of shares sold is usually high during that period of the month.

The non- TOM days price had a positive beta coefficient of 0.002 implying that an upsurge in securities prices during the other days not forming TOM effect will lead to a 0.002 increase in the return to stock. The p-value was 0.517 which is greater than 0.05 indicating it was not statistically significant at 95% confidence interval level. Thus, stock returns prices were lower on the other trading days not forming the TOM effect. Notable, the benchmark index NASI which has a correlation to stock prices index was lower during the Non-Tom days compared to the TOM days.

Chapter five

Summary, conclusion and recommendation

5.1 Introduction

This part summarizes the data results, findings, conclusions drawn and recommendations for this study which aimed at establishing whether the turn-of-the-month effect exists at the NSE. The study applied Ordinary Least Squares (OLS) regression analysis for 4 years period where 49 months were under study. The study used STATA version 23.0 to analyze the secondary statistics attained from the KNBS (Kenya National Bureau of Statistics) and NSE (Nairobi Securities Exchange).

5.2 Summary

The objective of the study was to examine whether securities returns at the Nairobi Securities Exchange depicted a turn-of-the-month effect in Kenya. This was an analytical study used a regression model. The study used data from NSE for the period (October 2015-October 2019). This research was done on the listed securities constituting NASI. The study collected information and data on the market prices of the listed counters using indexes as already calculated at the bourse using the monthly investor bulletins, and then used Ordinary Least Squares (OLS) regression to test significance of the mean returns to confirm if TOM effect exists four days at the NSE.

The descriptive statistics showed the means and the standard deviation of TOM effect with respect to the years under study. The results showed that 2017 had the highest minimum of negative 152.06 while 2019 had the highest maximum of 602.69. 2019 also had the highest number mean with the value exceeding 1. The study found that TOM effect occurs among both high and low-priced securities.

Additionally, given the relationship amongst securities returns and the NASI index it is clear there is a TOM effect which increases price earnings per share ratio thus the volume of shares sold is usually high during that period of the month. From the table results of turn of the effect month, 2016, 2017 and 2018 were significant at 0.023, 0.015 and 0.005 p-values at 95% confidence levels. 2015 and 2019 were not significant possibly because the sample data did not use all the 12 months. The analysis of this study validates that the TOM effect is not a variation of the high yields historically received by small-cap and big cap securities.

Notwithstanding market capitalization, NSE securities receive many of their revenues over the four days beginning the month and one day ending before the end of the month.

The estimation of coefficients results showed that NASI index which includes all the companies listed had a positive coefficient of 0.161 which was statistically significant at 95% confidence interval since 0.032 is less than 0.05, Inflation rate had a positive beta coefficient of 0.414 which was statistically significant since p-value (0.002) < 0.05 at 95% confidence interval. The turn of the month price had a positive beta coefficient of 0.234 The p-value was 0.013 which is less than 0.05 indicative that it is statistically significant at 95% confidence interval level. The constant value and the non-TOM stock prices were statistically significant.

5.3 Conclusion

The TOM effect in equities yields positions a task to both “rational” and “behavioral” models of equities pricing. Lakonishok and Smidt (1988) coined the phrase the “turn-of-the-month effect” to define the unusually better yields earned by stocks during the four-day interval using the 3 trading days before and the one day after end month. This agrees with our findings that the turn-of-the-month effect is averagely noticeable over the last four years.

Findings from this study depict that over the 4-year interval of October 2015- October 2019, all the positive returns to equities happened throughout the turn-of-the-month period. Thus, this implies that over the other 18 days of trading, the stockholders take lesser payments for carrying the burden of market risk. The study concluded that the 4-day TOM window experienced an abnormal loss of 152.06 and a gain of 602.69. The mean values however suggest that most returns ranged below 1 with an exception of 2019 which had a mean of 1.3581.

Inflation rate which was computed using the consumer price index, were significant to influencing the return on stock which implied that the TOM effect is also affected by other macroeconomic variables like inflation. TOM prices throughout the four days was statistically significant meaning the prices during the four-day window has a positive effect on the yield of securities. Nevertheless, during the other days it was not significant implying that the prices of stock did not have a significant effect on the listed securities yield.

The efficiency market hypothesis can be appraised with how the equities securities retorts to any material public data assuming the stock markets are informational efficient such that the securities prices at that point in the market mirror entirely all the material public information available.

5.4 Policy Implications

As alluded by this research paper, Investors should contemplate disposing their securities at the end of the month to ensure they get high returns. Evaluation should be done on a monthly basis to ensure there is enough information for the investors to avoid risks. This decision should go hand in hand with carrying out assessment of the available market information consistently and regularly. The study thereby makes commendations to the various market stakeholders and participants to objectively study the market for any movements in prices before making buy sell or hold decisions on any securities.

5.5 Study Limitations

The period for this project paper was confronted by many policy and monetary changes like the repeat presidential elections in 2017 which temporarily led to the halt of the securities market. Additionally, the regime had interest rate capping whereby in September 2016 the Central Bank of Kenya capped interest rates chargeable by banks at no more than 4% of the base rate. This two may have prejudiced the share prices which was used to calculate share yields. As such, the conclusions may have been partial by the existing economic and monetary policies at the period of study. The data quality may pose limitations too. It is not easy to tell from this research whether the market is efficient enough to aid a fresh capture of the behavior of the traders through the prices they settle the deals on the NSE. The use of NSE data assumes that the prices correctly capture the sentiments and views of the market precisely. This research does not settle that the NSE has realized such a level of efficiency.

The research study investigated the turn of the month effect only whereas there are other calendar anomalies like the president election effect, small firm effect, intra-monthly effect which also influence the return of securities at the NSE.

5.6 Areas of Further Research

The study recommends that future studies be conducted on the size effect anomaly at the NSE to establish whether size effect exists at the NSE.

This will help in policy formulation and guide investors' investment decisions. The study further recommends that other NSE 20 securities can also be examined to determine the TOM effect and not only those listed in NASI share index.

The study heavily on secondary statistics from the NSE and Kenya national Bureau of Statistics for a period of October 2015-october 2019, therefore since data is available, a longer period would have been covered to show a clearer picture of the TOM effect.

The study concentrated on the TOM at the NSE with a bias to when returns are maximized that is during the first 3 days of the month and the last day. Further studies should be done to establish other anomalies that could be found in the calendar. It could investigate the study based on different sectors at the NSE comparisons can be carried out.

References

- Boudreaux, D. O. (1995). The monthly effect in international stock markets: evidence and implications. *Journal of Financial and Strategic Decisions*, 8(1), 15-20.
- Fama, E. F. (1965). The behavior of stock-market prices. *The journal of Business*, 38(1), 34-105.
- Muriu, P. W. (2016). Microfinance Performance. Does Financing Choice Matter. *European Journal of Business and Management*, 8(33), 77-93.
- Wong, M. K., Ho, C. M., & Dollery, B. (2007). An empirical analysis of the Monthly Effect: The case of the Malaysian Stock Market. *Paper Series in Economic of University of New England*. Allen and Hawkins, (2002): "The current state of business disciplines". Spellbound publications, 2000 Vol.3 pp 959-970.
- Ariel, Robert (1987): "The monthly effect in stock prices," *Journal of Financial Economics* 1987 Vol.18, pp. 161-174.
- Banz, R (1981): "The relationship between return and market value of common securities " *Journal of Financial Economics* 9, 3-18.
- Basu, S; (1977): "Investment performance of common stocks in relation to their price earnings ratios. A test of efficient market Hypothesis" *Journal of Finance* 32, 663-682.
- Block, S; (2001b): "Political Conditions and Currency Crises: An Empirical Regularities in Emerging markets" Working paper, No.79 October. Cambridge, MA Harvard University, Center for international development.
- Bruce. I. Jacobs and Kenneth. N. Levy (1988) "Calendar anomalies: Abnormal anomalies at Calendar turning points" *Financial Analysts Journal* Vol. 44, No 6. (Nov –Dec 1988) pp. 28-39.
- Brusa, J, Liu, P. and Schulman, C. (2000): "The weekend Effect, "Reverse" Weekend Effect, and firm size," *Journal of Business Finance and Accounting*. Vol 27, No. 5 and 6 555-574.
- Copelan, T and D. Galai (1988): "Information effects on the bid ask price" *Journal of Finance*, Vol. 38, pp 1457-1469.

- Corhay, A, Fatemi, A and Rad, A;(1987): “Statistical properties of daily returns: Evidence from the European stock markets”, *Journal of Business Finance and Accounting*, Vol.21, 409-421.
- Cross, F., (1973): "The Behavior of Stock Prices on Fridays and Mondays," *Financial Analysts Journal*, Vol.29, 67-69.
- Dimson E. & M. Mussavian (1998): “The current state of business disciplines”. Spellbound publications, 2000 Vol.3 pp 959-970.
- Dimson, E and P. Marsh (1999): “Murphy's Law and Market Anomalies”, *Journal of Portfolio Management*, Winter 1999.
- Fama, E; (1970): “Efficient Capital Markets: A Review of Theory and Empirical Work,” *Journal of Finance*, Vol. 30, pp. 383–417.
- Fama, E ;(1991): “Efficient Capital Markets II”, *Journal of Finance*, 46, pp.1575-1617.
- French, Keim; (1980): “Stock Returns and the Weekend Effect”, *Journal of Financial Economics*, Vol 8, pp 55-69.
- Galai, Dan and Kedar, Haim (August 2005) “Day of The Week Effect in high moments” *Financial Markets, Institutions and Instruments*, Vol 14 issue 3 pp 169-186.
- Gibbons, R and P. Hess, (1981): “Day of the week effects and Asset returns” *Journal of Business*, Vol 54, No.4 (October 1981) pp.579-596.
- Grossman, S. and J, Stiglitz, (1980): “On the Impossibility of the informationally Efficient Markets”, *American Economic Review*, Vol. 70 pp 393-408.
- Haugen, R. and P. Jorion, (1996): “The January effect: Still there after all these years” *Financial Analysts Journal* Vol. 52, 27-31.
- Jaffe, J and R, Westerfield, (1985): “The weekend effect in common stock returns: The International Evidence”, *Journal of finance* Vol 40 No 2 (433-454).
- Kalay, Wei and Wohl, (2002): “The January effect: The trading patterns of institutional investors” *Journal of Finance* Vol.45, pp. 239-256.

- Kamara, A, (1997): "New Evidence on the Monday Seasonal in Stock Returns" *The Journal of Business*, Vol. 70, No. 1, pp. 63.
- Keim, D.B., & F Stambaugh, (1984): "A further Investigation of weekend effects in stock returns", *Journal of Finance*, Vol. 39, pp. 819-840.
- Kettel, B. (2001): *Making sense of market information: Financial Economics*. Prentice Hall, New York.
- Kendall, M, (1953): "The analysis of Economic time series", *Journal of the Royal statistical Society, Series A*, 96 pp.11-25.
- Kabuthi G.W, (2005): "Capital markets in emerging economies" A case study of the Nairobi Stock Exchange. Master of Arts in Law and Diplomacy thesis April 2005. Pp 6-12.
- Kingori E.N, (1995): "Stock Market Seasonality at NSE: An empirical study" Unpublished MBA project, UoN.
- Lakonishok, J. and M, Levi, (1982): "Weekend Effects in Stock Returns: A Note", *Journal of Finance*, Vol. 37, pp.883-889.
- Lakonishok and Smidt (1988): "The Holiday effect in stock returns": Evidence from the OTC market, *Review of the Financial Economics*, September 22nd, 1992.
- Lakonishok, J and S, Seymour, (1988): "Are seasonal anomalies real? A ninety-year perspective" *The Review of Financial Studies*, Vol. 1, No. 4. pp. 403.
- Lakonishok, J., A, Shleifer, A, R, Thaler, and R. Vishny, (1991): "Window dressing by pension fund managers" *American Economic Review* Vol. 81, pp. 227-231.
- Lakonishok, J. & E. Mcberly, (1990): "The weekend effect: The trading patterns of institutional investors" *Journal of Finance* Vol.45, pp. 231-243.
- Lofthouse, S (2001): "Investment management" *Journal of Finance*, Vol 47, pp 275-301.

Kibuthu, G.W. 2005, Capital markets in emerging economies: A case study of the NSE. MA thesis, Tufts University.

Kingori E.N; (1985): "Stock Market Seasonality at NSE: An empirical study" Unpublished MBA project, UON.