AN INVESTIGATION OF THE EXISTENCE OF WEEKEND EFFECT IN STOCK RETURNS AT THE NAIROBI SECURITIES EXCHANGE

BY

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DECLARATION

I declare that this Research Project is my original work and has not been presented for any academic award in any university.

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This Research Project has been submitted for examination with my approval as the University Supervisor.

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DEDICATION

I dedicate this project to my lovely parents; Mr & Mrs Njoroge for their relentless

support to seeing me through my education, and also to my siblings for being my

inspiration to want to do better.

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LIST OF ABBREVIATIONS

APT…………………………………… Arbitrage Pricing Theory

ASE…………………………………… Athens Stock Exchange

BSE…………………………………… Bombay Stock Exchange

BE………………………………….. Book Equity

CAPM……………………………..... Capital Asset Pricing Model

CMA……………………………….. Capital Markets Authority

D/E…………………………………. Debt to Equity Ratio

EMH………………………………... Efficient Market Hypothesis

E/P……………………………….. Earnings to Price Ratio

GCC………………………………... Gulf Cooperation Council

IFC…………………………………. International Finance Corporation

ISE…………………………………. Istanbul Stock Exchange

JSE…………………………………. Johannesburg Stock Exchange

KSE…………………………………. Khartoum Stock Exchange

LSE…………………………………. Lagos Stock Exchange

M/B…………………………………. Market to Book Ratio

ME…………………………………. Market Equity

NASI……………………………….. NSE All Share Index

NSE…………………………………. Nairobi Securities Exchange

NYSE………………………………. New York Stock Exchange

OLS…………………………………. Ordinary Least Squares

OTC………………........…...…........... Over The Counter

PSE…………………………………. Phillipine Stock Exchange

SEO…………………………………. Seasoned Equity Offerings

TSE…………………………………. Tunis Stock Exchange

SEM………………………………... Stock Exchange of Mauritius

TURKDEX………………………… Turkish Derivatives Exchange

UK……………………………….. United Kingdom

US……………………………….. United States

ABSTRACT

The stock market movements are constantly monitored and persuaded in the global, regional and local context. Particularly the movement and fluctuations of standard indices which represent a tool to measure performance and outcomes of the market in term of growth are closely evaluated. The indices show registered share prices in the market. Again, they are used as comparable performance indices which investors can use to measure the performance of their portfolios compared to that of the whole market. Indices have played an important role in performance measurement as well as in investment decision making. The study sought to investigate the existence of the weekend effect in stock returns at the Nairobi Securities Exchange. The study specific objectives were to find out whether Monday returns are lower than Friday returns. Also the study was to establish if the market returns followed a particular trend depending on the trading day.

The sample of the study included all the firms that form the NASI. The index included companies in the NSE from all sectors namely Agricultural, Automobiles and Accessories, Banking, Commercial and Services, Construction and Allied, Energy and Petroleum, Insurance, Investment, Manufacturing and allied and Telecommunication and Technology. The study required data on NASI index for the period January 2011-December 2013. The study relied on secondary data to collect relevant information. Correlation for the trading days returns shows that there is a weak correlation between trading day and market returns. Monday mean returns were however negative unlike for the other days of the week supporting the existence of the weekend effect in the NSE.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Seasonality is a characteristic of a time series in which data experiences regular and predictable changes which recur in defined periods. Seasonal variation is a component of a time series which is a predictable movement around a trend line and is detected by measuring the quantity of interest for small time intervals such as days, weeks, months etc. In stock markets, there have been well documented seasonal trends. These are anomalies even in efficient markets where security prices reflect all relevant and recent information. The trends are anomalies because they are not explained by any of the asset pricing models.

In security analysis, there is a basic assumption that markets are efficient. A market is efficient when security prices quickly adjust as new information is received. The market is weak-form efficient if security prices change as a result of past information. However, if prices change as a result of current publicly available information, then the market is semi-strong form efficient. Security prices also change due to private information. This occurs where markets are strong-form efficient. Anomalies have been discovered which contradict efficient market hypothesis. One of the anomalies is the day of the week effect. Research findings have documented that stock returns are high on Fridays and low on Mondays. This anomaly is not explained by any of the assets pricing models like the Capital Asset Pricing Model and the Arbitrage Pricing Theory.

Andersen (1996) defined stock market volatility to be the degree to which the price of a security, commodity or market rise and fall within a certain period. He added that one commonly used measure of volatility is the standard deviation of returns which measures the dispersion of returns from an average. If stock market is efficient, then the volatility of stock returns should be related to the volatility of the variable that affects asset prices. Galai and Kedar (2005) examined day of the week effect from equity market worldwide and indicated

that the day of the week anomaly appears to fade once the distribution of daily returns begins. Their report indicated that highly significant pair wise weekend effects in high moments when comparing the first and last trading days of the week. He observes a pattern of high returns around the middle of the week (Tuesday and Wednesday) and a lower one towards the end of the week (Thursday and Friday).

Fama (1970) stated that the extent to which information is reliable depends on the efficiency of the stock market. He further added that, the Efficiency Market Hypothesis (EMH) states that at any given time, security prices reflect all the available information. However, Galai and Kedar (2005) contradict the efficient market hypothesis. They stated that the anomalies that have been cited tend to work against the efficiency of the stock market. These anomalies include January effect, small size firm effect, week end effect, holiday and turn of the month effect and day of the week effect. Brusa , Liu and Schulma (2003) suggested that the week end effect has a reverse effect, where Monday returns are significantly positive and larger than those of other days of the week.

NSE (2013) Nairobi Securities Exchange (NSE) has a total of 60 listed companies which are grouped into Agricultural, commercial, telecommunication, automobile, banking sector,Insurance, Investment, manufacturing, construction and Energy Sector. The NSE is open for trading from Monday to Friday and closed on Saturday and during public holidays. The measure of performance at NSE is the market Index. The Nairobi Securities Exchange has three types of indices; these are NSE 20 share Index, NSE All Share Index (NASI) and FTSE Share Index. NSE 20 share Index comprises 20 selected companies.

This research investigates whether there is a daily trend in the Kenyan stock market.

1.1.1 Weekend Effect

The weekend effect (also known as the Monday effect, the day-of-the-week effect or the Monday seasonal) refers to the tendency of stocks to exhibit relatively large returns on Fridays compared to those on Mondays. This is a particularly puzzling anomaly because, as Monday returns span three days, if anything, one would expect returns on a Monday to be higher than returns for other days of the week due to the longer period and the greater risk. Day of the week effect is an empirical irregularity in common stocks (Bailey, Alexander and Sharpe, 1999). Certain cross-sectional differences among stock returns have been found to occur with regularity. Some regularity should occur according

to certain asset pricing models. For example, the CAPM asserts that different stocks should have different returns because different stocks have different betas. According to Bailey, Alexander and Sharpe (1999), seasonal patterns in stock returns should be quite minor (if they exist at all), because they are not suggested by traditional asset pricing models. It is often assumed that the expected daily returns on stocks are the same for all the days of the week. That is, the expected return on a given stock is the same for Monday as it is for Tuesday as it is for Wednesday as it is for Thursday and as it is for Friday. They observed however that a number of studies have uncovered evidence that refutes this belief. Studies by French (1980) and Gibbons and Hess (1981) found significant variations in daily stock returns. These studies looked at the average daily return on NYSE – listed securities and found that the return on Monday was quite different from the returns on other days. In particular, the average return on Monday was found to be much lower than the average return on any other day of the week. Furthermore, the average return on Monday was negative, whereas the other days of the week had positive average returns.

1.1.2 Stock Return

Jordan and Fischer (2002) defined return as the motivating force and the principal reward in the investment process and it is the key method available to investors in comparing alternative investments. They document that return has two components. The basic component is the periodic cash receipts (or income) on investments, either in the form of interest or dividends. The second component is the change in the price of the asset – commonly called capital gain or loss. This element of return is the difference between the purchase price and the price at which the asset can be sold. According to Reilly and Brown (2003) on the other hand, stock return is the compensation for the time, the expected rate of inflation and the uncertainty of the return after investing in stocks. Stock returns vary in different periods, this is known as stock return volatility which is; the amount of uncertainty or risk about the size of changes in a security's value. A higher volatility means that the price of the security can change dramatically over a short time period in either direction. A lower volatility means that a security's value does not fluctuate dramatically, but changes in value at a steady pace over a period of time.

Karungari (2006) explained that volatility is of great concern for investors or for anyone dealing with money. He noted that investors would like to know how much volatility or risk that they are exposed to. He further added that, Volatility in general reflects the importance of variability or dispersion around the central tendency. Thus it dictates the extent and likelihood of a possible return realization hence help to give a feel of what the possible range of value that the stock will be in. He concluded by noting that, when an investor knows how much volatility he is exposed to, he can make a decision on his investment.

Schwert (1990) defined volatility as a measure of the changeability or randomness of asset prices; usually the standard deviation or variance of the rate of return. He further added that an increase in stock market volatility brings an increased chance of large stock price changes of either sign. Andersen (1996) defined stock market volatility to be the degree to which the price of a security, commodity or market rise and fall within a certain period. He added that one commonly used measure of volatility is the standard deviation of returns which measures the dispersion of returns from an average. If stock market is efficient, then the volatility of stock returns should be related to the volatility of the variable that affect asset prices.

Shiller 1989 (As cited by Kalui, 2004) on his study on stock market volatility found that rational investor valuation of stock would be based on expected dividends from owning the stock. Price however, is too much volatile to be due to changes in expected dividend, even when adjusted for inflation. Leroy and Porter (1981) has shown evidence that the variability of stock price indices cannot be accounted for by information regarding future dividend since dividends just do not seem to vary enough to justify the price movement. They further added that consumption variability might induce stock market variability whose magnitude depends on the degree of risk aversion.

1.1.3 Relationship between Weekend Effect and Stock Return

Since most stocks are traded only from Monday through Friday, if stock returns are generated in trading time, the distribution of returns is expected to be the same for all five days of the week. However, studies have shown that this is not the empirical situation; Berument and Kiymaz (2003) argued that there is a relationship between day of the week and stock market return. They noted that the highest stock return volatility occurs on

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Monday for German and Japan, on Friday for Canada and United States and Thursdays for the United Kingdom. For most of the markets, the days with the highest stock return volatility also coincides with the market's lowest trading volume.

1.1.4 Nairobi Securities Exchange

The Nairobi Securities Exchange started back in 1954 when it was constituted as a voluntary association of stock brokers registered under the societies Act (www.nse.co.ke). NSE is an example of an emerging stock market that has been characterized by humble beginnings yet has grown considerably over time (Kibuthu 2005). It has a total of 60 listed companies which are grouped into Agricultural, commercial, Telecommunication, Automobile, banking sector, Insurance, Investment, Manufacturing, Construction and Energy sector (NSE, 2013).The Nairobi Securities Exchange (NSE) is open for trading from Monday to Friday, and closed on Saturday and during public holidays (Mokua, 2003).Most stock exchange in the world also trade from Monday to Friday (Jaffe and Westerfied, 1985).

The Nairobi Securities Exchange has three types of indices; these are NSE 20 share Index, NSE All Share Index (NASI) and FTSE Share Index. NSE 20 share Index comprises 20 selected companies. In 2008, the NSE All Share Index (NASI) was introduced as an alternative index. It is a measure of overall indicator of market performance. The Index incorporates all the traded shares of the day. Its attention is therefore on the overall market capitalization rather than the price movements of selected companies

1.2 Research Problem

Nairobi Securities Exchange is never perfect, which provides fertile breeding ground for stock return variations, caused by market imperfection (Mokua, 2003). He further added that it is important for investor to understand the stock market trends to be able to take advantage of them. Nairobi Securities Exchange has depicted various patterns with respect to the day of the week and stock market return volatility. This implies that there are certain days of the week which are favorable to buy or sell the shares than the other days. In this investigation our interest is to find out whether weekend effect exhibited by other developed stock market returns are also present in Kenya.

Berument and Kiymaz (2003) in their study on the day of the week effect on stock market volatility noted that the day of the week effect is present in both the return equation and stock market volatility equation and therefore a relationship between the day of the week and stock market volatility. Their study was conducted on developed stock exchange such as Germany, Japan, Canada and United States of America. There is need to replicate the study in Nairobi Security Exchange. Whereas, Mokua (2003) in his study on the weekend effect on the stocks at the Nairobi Securities Exchange concluded that weekend effect does not exist in Nairobi Securities Exchange. However, Kalui (2004) on his study on the determinants of stock price volatility, an empirical investigation of Nairobi Stock Exchange covering the period between 1998 and 2002 revealed that companies quoted at NSE experience stock price volatility.

Various studies have been done on market anomalies in different markets. The findings have been different for the majority of these markets including the Nairobi Securities Exchange. The Capital Markets Authority has formulated and implemented several policy reforms aimed at strengthening and growing the capital markets in Kenya. After the introduction of all these capital market development initiatives, no research has been done to test existence of the weekend effect on the Nairobi Securities Exchange. Based on the above, this research seeks to answer the following questions:

i.   Are stock returns lower on Monday than on other trading days at the NSE?
ii.   Is there a significant trend in the daily stock returns at the NSE?

1.3 Objectives of the Study

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

i.   To determine the daily stock market returns from January 2011 to January 2014 for each of the five days of the week.
ii.   To establish if Monday stock returns are significantly lower than Friday stock return, otherwise known as the weekend effect.

1.4 Value of the Study

This study will stimulate further interest on the area of market efficiency. Little has been explored in the case of stock market return volatility versus day of the week effect at the Nairobi Securities Exchange, thus it is aimed at filling the existing knowledge gap. The study will also benefit the students as a basis of reference for any future study in the field of market efficiency. Thus to Academicians who want to contribute to the body of knowledge, this research will help in opening up opportunities for doing further research.

The study will also benefit the investor in the sense that, information gathered on day of the week pattern versus stock market volatility will enable them to take advantage of the regular shifts in the market by designing strategies which account for that predictability pattern. Thus the investor will be in a better position to determine which particular day to invest and which day to sell.

From the government perspective as a regulator, It would be able to monitor the sensitivity of the securities market with respect to the changes in the day of the week hence will be able to monitor the performance of the stock market which is a signal of economic stability in the country. This can be one of the key measures to ascertain the success of a given regime.

To Stock brokers and dealers, the knowledge of such crucial information on day of the week and stock market volatility may assist the stock brokers to plan well when to trade. It will also enable them to know how to get supernormal returns that is by buying the securities on the day of the week when prices are low and selling them on the day when prices are high.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter starts by reviewing the models which have been developed by researchers to determine the stock returns. These models are the Capital Asset Pricing Model and the Arbitrage Pricing Theory. It continues by focusing on the empirical studies which have been carried out in the recent past. One of the anomalies that will be extensively discussed in this chapter is the day of the week & weekend effect in relation to stock returns. The chapter ends by delving into the reasons which have been suggested by researchers to explain some of the anomalies discussed.

2.2 Review of Theory

2.2.1 Capital Asset Pricing Model

The most widely used model in determining stock return is the Capital Asset Pricing Model (CAPM), put forth by Sharpe (1964). Similar parallel research on this topic was also done by Lintner (1965) and Mossin (1966). According to CAPM, there is a direct linear relationship between the return on an asset and its non-diversifiable risk above the risk free rate. The model determines the equilibrium prices and in turn the equilibrium returns in the market. In other words, in a market where the static CAPM holds, actual returns should be consistent with equilibrium returns. The CAPM assumes that the investors eliminate all diversifiable risk and what matters is only the non-diversifiable or systematic risk measured by beta. Further research on CAPM has documented anomalous factors which have cast doubt on the practicability and application of the model. Such anomalies may be due to market inefficiency or due to misspecification of static CAPM (Fama, 1970). Reinganum (1981) and Ball (1978) find that anomalies are caused by model misspecification rather than market inefficiency. Few of the important anomalous factors identified are explained below.

2.2.1.1 Size Effect

Banz (1981) and Reinganum (1981) investigated the impact of size on expected returns. The studies found a significant negative relationship between size of a firm and the expected returns. According to Banz, this was due to insufficient information on small firms leading to limited diversification hence higher risk adjusted return on these small stocks. Reinganum (1981) tested the relationship between size and E/P of a firm and its returns. He found that E/P and size were important factors in explaining asset returns. Fargher and Weigand (2009) examined cross-sectional differences in the profits, returns and risk of high and low-market-to-book ratios (M/B) stocks before and after the initiation of regular cash dividend payments. Low-M/B stocks displayed the most positive price reaction to dividend initiation announcements. High-M/B firms had larger profits, cash levels and capital expenditure before and at the time of dividend initiation, but more closely resembled the low-M/B firms. Excess returns earned by low-M/B firms were related to decreases in systematic risk, while the returns of high- M/B firms were related to their higher profitability.

2.2..1.2 Value Effect

Another interesting anomaly was the positive relationship between the book to market value equity and the stock returns. Stattman (1980) and Rosenberg, Reid and Lanstein (1985) found that value (BE/ME) was positively related to expected returns indicating that BE/ME provided valuable information to investors wishing to earn higher returns than those associated to that particular level of risk. Chan and Chen (1991) attributed the value effect to mismanagement and higher financial leverage. Fama and French (1993) evaluated the impact of size and value effect in addition to beta on expected returns in a three-factor model. They found that abnormal returns from this three-factor model were not very different from zero when portfolios were formed by sorting stocks according to size, value, and dividend yield or earnings-to-price ratios. This again highlighted relevance of factors other than beta in explaining expected returns. Fama and French (1995) provided evidence that size and BE/ME not only proxied for the risk factors that helped to explain cross-sectional variation in common stock return but were also related to profitability. Firms with higher BE/ME tended to be persistently distressed.

2.2.1.3 Leverage Effect

Asset returns have also been related to debt to equity ratio of assets. Bhandari (1988) investigated expected returns against leverage of a firm as measured by its Debt to Equity ratio (D/E). He found that on controlling for size and beta, D/E was positively related to expected returns. He concluded that beta along with D/E was able to capture the risk better.

2.2.1.4 Earnings Price Ratio Effect

Basu (1977) found that returns on stocks with low P/E ratios tended to be larger than warranted by the underlying risk and vice versa. In a later study by Ball (1978), not only was E/P found to be an important factor in explaining asset returns but it was also seen that that E/P contains information on all factors not explained by the CAPM.

2.2.2 Arbitrage Pricing Theory

The Arbitrage Pricing Theory (APT) is a substitute for the Capital Asset Pricing Model (CAPM) in that they both assert a linear relation between assets' expected returns and their covariance with other random variables. APT was developed primarily by Ross (1976a, 1976b). APT holds that there are several non-diversifiable risk factors (different from CAPM, since CAPM assumes only one risk factor) that are systematic or macroeconomic in nature and thus affect the returns of all stocks to some degree. It is a one-period model in which every investor believes that the stochastic properties of returns of capital assets are consistent with a factor structure. Ross argues that if equilibrium prices offer no arbitrage opportunities over static portfolios of the assets, then the expected returns on the assets are approximately linearly related to the factor loadings. (The factor loadings, or betas, are proportional to the returns' covariance with the factors.).

Ross' (1976a) heuristic argument for the theory is based on the preclusion of arbitrage. Ross' formal proof shows that the linear pricing relation is a necessary condition for equilibrium in a market where agents maximize certain types of utility.

2.3 Market Anomalies

The Efficient Market Hypothesis states that an investor cannot expect to outperform the market averages. An anomaly is an exception to the rule, a deviation from what is

expected. A market anomaly, therefore, is an exception to the Efficient Market Hypothesis. The anomalies listed below have all become well documented during the past few years.

2.3.1 Time-Related or Calendar Anomalies

January Effect (turn of the year) – In developed Markets the rate of return on common stocks has been unusually high during the month of January. The effect may be attributable to tax-related selling in December and consequent buying in January. (The buying is concentrated in the first five days of January and occurs largely in small stocks.)

Week of the Month -- The 1st two weeks of the month have a considerably higher rate of return than the last two weeks of the month.

Monday Effect (also called the Turn of the Week or the Weekend Effect) -- Weekends are often bad for stocks, possibly because companies and governments tend to release bad news on the weekends. Monday is the worst performing day of the week by far, when measured over a long period of time (i.e., from Friday's close to Monday's close). In fact, historically, Monday is the only day of the week that averages a negative rate of return. This anomaly will be investigated in the NSE for the purposes of this research.

2.4 Determinants of Stock Return

2.4.1 Market Performance

This is the overall market performance. It incorporates all the traded shares of the day. It is an indicator of overall market movement in a given period. The National All Share Index (NASI) will be used as the market performance indicator for the purposes of this study. It is issued every trading day and for the purposes of this study will be used to compare average daily returns of the NSE.

2.4.2 Beta

Kalui (2004) explained that the market systematic risk of a security is a measure in terms of sensitivity to the market movement known as beta. The capital asset pricing model provides a measure of risk and it is used by many firms to calculate the discount rate. He further added that the beta of stock is simply the slope of the regression line, when excess return above the risk free rate are regressed against returns for the market portfolio. Mugenda and Mugenda (2003) defined Regression analysis as a type of analysis used when a researcher is interested in finding out whether an independent variable predicts a given dependent variable.

2.4.3 Risk-free returns

This is the theoretical return of return of an investment with zero risk. It is the minimum return an investor expects for any investment because he or she will not accept additional risk unless the potential rate of return is greater than the risk-free rate.

2.5 Empirical Studies

2.5.1 Calendar anomalies in Developed Markets

Early research done by Cross (1973) found a very puzzling observation that spurred a great deal of debate and further research in calendar anomalies. Cross found out that Monday had a negative return of -0.18% while Friday had a positive return of +0.12%. He analysed the Standard and Poors composite index from 1953 to 1970. Cross established further that the index performance on Monday was dependent on the Friday's performance.

Findings by French (1980) were consistent with those of Cross (1973). French studied the Standard and Poors composite index from 1953 to 1977. He observed that returns remained dependent on the day of the week. Further tests revealed that Monday mean returns over the study period were significantly negative while Wednesday through Friday returns were significantly positive. On the other hand Aggrawal and Tandon (1994) also found a day-of- the-week effect in 18 equity markets. Two independent studies conducted by French(1980) and Gibbons and Hess(1981) found evidence consistent with the hypothesis that there are significant differences in the expected

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percentage changes for stocks depending on the day of the week. The study covered more than 4,000 trading days from 1962 through 1968. The expected percentage change on Mondays appeared to be negative and the expected percentage change on Wednesdays and Fridays appeared to be larger than on Tuesdays and Thursdays.

Recently, Marrett and Worthington (2011) examined month of the year effect in Australian daily returns using a regression-based approach. The results indicated that market-wide returns are significantly higher in April, July and December combined with evidence of a small cap effect with systematically higher returns in January, August, and December. The analysis of the sub-market returns was also supportive of disparate month of the year effects.

McGowan and Ibrihim (2009) carried out an analysis of the day of the week effect in the Russian Stock Market using the Russian trading System Index for the period when the market opened in 1995 to August 2003. They established that Wednesday had the lowest returns and infact negative but not statistically significant. They noted that Friday had the highest positive returns which was however not statistically significant. Returns for Monday, Tuesday, and Thursday were all similar. Solnik and Bousquet (1990) test day of week effect for Paris Bourse, reporting a strong and persistent negative return on Tuesday, which is in line with studies on Australia and Japan. Barone (1990) reports similar results for the Italian Stock Market, with the largest decline in stock prices occurring in the first two days of the week and more pronounced on Tuesday.

2.5.2 Calendar anomalies in Emerging markets

Studies in calendar anomalies have also been carried out in emerging markets in Asia and Africa. Choudhry (2000) examined calendar anomaly in Asian emerging markets, including India, and reported significant positive Friday returns in the Indian stock market for the period 1990 to 1995. The finding of positive Friday returns conforms to the majority of previous empirical findings (Cross, 1973; and Gibbons and Hess, 1981) in the US markets.

Bhattacharya et al. (2003) examined the day of the week effect in returns and its volatility in the Indian capital market, from 1991 to 2000. They used reporting and non-reporting weeks to study the day of the week effect. The study found significant positive returns on Monday.

Sarma (2004) examined the day-of-the-week effects during the post reform era in the Indian stock market using multiple indices to detect the day-of-the-week effect by employing the Kruskal-Wallis test statistics. This study concluded that the Indian stock market exhibited some seasonality in daily returns over the study period.

Findings by Kumari and Raj (2006) contradicted those of Bhattacharya et al. (2003) and Sarma (2004). Kumari and Raj (2006) tested the efficiency of the Indian stock market through a number of hypotheses. Week day effects, day-of-the-week, weekend, January and April effects are examined by applying a variety of statistical techniques. The negative Monday effect and the positive January effects are not found in India. Instead the Monday returns are positive while Tuesday returns are negative.

Ariss, Rezvanian and Mehdian (2011) tested the calendar anomalies in the Gulf Cooperation Council (GCC) stock markets and investigated further whether the occurrence of the month of Ramadhan has a special bearing on returns and on the day-of-the-week anomaly. They found that returns are positive and significant on Wednesday which is the last trading day of the week. They also found out that market returns were significantly different in the month of Ramadhan relative to other months of the lunar calendar year.

Al-Khazali, Koumanakos, and Pyun (2008) found a strong day effect and weak week and January effects in Athens stock exchange. Dimitris and Samitas (2008) also documented a study on the day of the week effect patterns on stock market return and volatility. Evidence also exists in Athens stock exchange for a period of 2001 to 2005. Al-Khazali (2008), found out that there is day-of-the-week effect in published daily prices, while daily effect vanishes when data are corrected to remove any measurement bias arising

from thin trading. The stochastic dominance results show that the day-of-the-week effect in the United Arab Emirates equity markets is not present when raw data is corrected for thin and infrequent trading.

Almonte (2004) examined the day of the week effect in Philippines. She analysed the daily stock returns of the Philippine Stock Exchange (PSE) composite index from January 3 2000 to July 23 2004. It was observed that the day of the week effect exists in the Philippine stock market as confirmed by the results of the Kruskal-Wallis H test.

Ho (1990) examines weekday effects for ten Asian Pacific equity markets from 1975 through 1987. He documented a pervasive presence of the day-of-the-week effect. Additionally, Koh and Wong (2000) examine the day-of-the-week effect in Asian equity markets. They find negative returns for Monday and Tuesday and positive returns for Wednesday to Friday in the equity markets in Hong Kong, Malaysia, the Philippines and Singapore. Yakob et al. (2005) examined seasonal effects in ten Asian Pacific stock markets for the period January 2000 to March 2005. They find evidence to support the presence of the day-of-the-week effect in five countries.

Chukwuogor (2007) examined day of the week effect and volatility in stock returns from East Asian financial markets using daily closing values market indices from January 1998 to October 31, 2003. The results show that China, Malaysia, South Korea, and Taiwan have highest returns on Wednesday. Highest returns also occurred on Friday for Singapore and Thailand. India and Philippines recorded their highest returns on Monday. Japan and Indonesia recorded their highest return on Tuesday and Thursday, respectively. Even though there is mixed results with respect to which day the highest return occurs, in general, high returns mostly occur on Friday and Wednesday. McGowan, Yener, and Johnson (1989) find a day-of-the-week effect for the Manila Mining Index for the period November 1976 to May 1987.

Other emerging markets exhibit a day-of-the-week effect. Mookerjee and Yu (1999) test the efficiency of Chinese stock markets from the period December 19, 1990 to December

17, 1993 for the Shanghai stock exchange and from the April 3, 1991 to December 17, 1993 for the Shenzhen stock exchange. They find significant weekend and holiday effects, but no January effects. Their results show that both exchanges are characterized by a statistically significant negative weekend and positive holiday effect.

Al-Jafari (2011) investigated the impact of the global financial crisis on the monthly effect of returns of Bahrain stock market. The study employed daily returns of Bahrain All Share Index from 1 January 2003 to 31 July 2011. The sample was tested by using the equality for means tests (F-test, Chi-square test, and Kruskal-Wallis test) and the equality for variance tests (Bartlett test, Levene test, and Brown- Forsythe test). The results showed that there were no significant differences of the monthly effect for daily returns of the Bahrain stock market before the occurrence of the global financial crisis and during the period of the financial crisis.

Khan et al (2011) conducted study to investigate the day of week effect in Karachi stock exchange in Pakistan. They calculated daily market returns for each day of week, by using KSE-100 index daily data. They found out that mean return of the Tuesday is higher than the rest of the week. This observation contradicts the results of Jaffe and Westerfield (1985b), Aggarwal and Rivoli (1989), Barone (1990) and Dubois and Louvet (1996) who documented that stock returns on Tuesday are often the lowest throughout the week for many developed and emerging countries.

Dastan and Aksoy (2011) investigated the day of the week effect and the weekend effect on short selling for the Istanbul Stock Exchange (ISE) from 2005 to 2009. The study tested the presence of the day of the week effect on stock market for short selling by using the ISE short selling data during the period of 2005-2009. The findings showed that the day of the week effect is present in short selling equations. The highest short selling is observed on Monday and after holidays. The lowest short selling is observed on Tuesday. The short selling pattern across the days of the week
is also statistically different.

Recently, Liew and Chia (2010) examined the existence of day-of-the-week effect and asymmetrical market behavior in the Bombay Stock Exchange (BSE) over the pre- 9/11 and post-9/11 sub-periods. This study found the existence of significant positive Monday effect and negative Friday effect during the pre-9/11 sub-period.

2.5.3 Calendar anomalies in Africa

Agathee (2008) investigated the day of the week effects in the Stock Exchange of Mauritius (SEM) using regression analysis. The results indicated no significant presence of the day of the week effect across the years and for the whole period of 1998 - 2006. The study also showed that Friday returns were high compared to the other days for the whole period. However, the mean returns, noted by descriptive analysis, showed lower returns on Tuesdays. His findings indicate that, except for the month of January, returns are not dependent on the month of the year.

Similarly, Bundoo (2008) carried out tests on day of the week and January effect on the Stock Exchange of Mauritius. The study found that SEM had positive and statistically significant Wednesday and Friday effects. The study also found a positive and significant Monday effect but smaller in magnitude. Further analysis revealed a significant positive September effect. No January effect was observed on the SEM.

Wyeme and Olfa (2011) examined the month of the year effect for Tunis Stock Exchange (TSE) over the period January 2, 2003 to December 31, 2008. They found an April effect in which they documented that the mean daily market returns are significantly higher in April than the rest of the year. Aly, et al. (2004) studied the existence of the day-of-the week effect in the Egyptian stock market using Capital Market Authority Index for the period April 26, 1998 until June 6, 2001. The empirical results indicated that while Monday stock returns were significantly positive, they were not significantly different from returns during the rest of the week.

Furthermore, Monday returns were significantly more volatile than returns from Tuesday to Thursday. They concluded that the significantly positive returns on Monday were associated with returns that are more risky. In the tests of anomalous turn-of-the-year

study of stock return seasonalities in low-income African emerging markets using monthly market indices for the Ghanaian stock market (1991-1996), Nigerian stock market (1984-1995), and Zimbabwean stock market (1987-1995), Ayadi (1998) found that the results of both the Kruskal- Wallis and Friedman tests suggested the absence of seasonality in stock returns on the Nigerian and Zimbabwean stock markets while the Friedman test confirms the presence of seasonality in stock returns for Ghana.

Chukwuogor (2008) investigated the indices in Botswana, Egypt, Ghana, Nigeria and South Africa for the period 1997-2004 to determine the daily returns, day-of-the-week effect and volatility of stock returns. Even though there were observed daily negative returns for three of the indexes, the results of the Kruskal-Wallis test did not support the existence of the day-of-the-week effect on stock returns in the five stock indexes of Botswana, Egypt, Ghana, Nigeria and South Africa. Similarly, Malambo and Biekpe (2006) investigated seasonal effects in 17 indices on nine African stock markets. They discovered a weekday effect in three indices only.

Abdalla (2012) investigated the existence of the day of the week effect in the Sudanese stock market for both the returns and conditional variance (volatility) using daily observations of the general price index series from Khartoum Stock Exchange (KSE), from 2006 to 2011. Empirical results of the different models found negative and statistically insignificant mean returns for all days of the week which indicated the absence of the day of the week effect in both return and volatility equations for the Khartoum stock exchange.

Onyuma (2009) analysed data derived from the NSE 20 share index using regression analysis to identify the behavior of stock returns in Kenya during 1980-2006. Results indicated that Monday produces the lowest negative returns, while Friday and January produce the largest positive returns.

2.5.4 Explanation for the Calendar anomalies

Some explanations proposed for calendar anomalies are risk-based. Risk may vary throughout the week. Other reasons are related to the microstructure of the markets or to the trading behaviour of market participants. For instance, Keim and Stambaugh (1984) suggested that the frequency at which transactions were made at the bid or at the ask during the week could have contributed to the Day-of-the-week effects in the United States (U.S.). Settlement procedures could also have helped create this pattern. These made investors in certain days of the week unwilling to buy at the same price levels as in other days because they did not get the two days of extra credit granted by the weekend (Lakonishok and Levi, 1982).

According to Floros (2008) most researchers find evidence of a January effect. He provides the following reasons for the January effect:

Year-end tax-loss selling. Most people come to the end of the year, and start thinking about their tax liability. They sell their losers sometime in December, and then they buy them back in January to lock in a tax loss (causing stock prices to rise).
Many traders go on vacation around this time. Most traders sell all their positions before leaving on vacation.
People spend more money at Christmas than at other times of the year.

Other explanations of the January effect include the portfolio rebalancing (Ritter and Chopra, 1989) and the information arrival/insider trading hypothesis (Williams, 1986). The former states that the high returns in January are caused by systematic shifts in the portfolio holdings of investors at the turn of the year. The information arrival/insider trading hypothesis predicts that not informed traders are more likely to trade in January. The January effect is an important factor in seasonality. The same sentiments are shared by Al-Saad and Moosa (2005).

Besides explaining the January effect, some empirical studies have focused on explaining the April effect. Gultekin and Gultekin (1983) and Reinganum and Shapiro (1987) explained the existence of the April effect on the UK stock market by the taxloss selling hypothesis because the UK tax year starts on 6 April and ends on the following 5 April. Alagidede and Panagiotidis (2009) argued that the presence of April effect in Ghana stock exchange is due to the submission of firm reports in late March.

2.6 Conclusion

Various studies have been done and continue to be conducted on this market irregularity. This chapter has reviewed the past studies on day of the week effect & weekend effect in different markets in the world. The findings have been inconsistent based on the location of the market and the timing of the study. There have been explanations for this day of the week anomaly. Some researchers have attributed the anomaly to new negative information originating from the long weekend. Other researchers have not been able to provide any information. The findings of this research hopefully will add to the available literature on the weekend effect.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter highlights the research design, population, sample design, data collection methods and data analysis techniques. The study period is between January 2011 and December 2013.

3.2 Research design

This study was a descriptive research design. Descriptive study establishes the correlation between variables. It emphasis on studying a situation or a problem in order to explain the relationship between the variables (Saunder, Lewis and Adrian, 2009).This research project investigated the existence of weekend effect in stock returns at the Nairobi Securities Exchange thus descriptive research design was the appropriate research design.

3.3 Population of Study

The population of interest in this study comprised 60 companies that were listed at the Nairobi Securities Exchange between 2011 and 2013. The study investigated the relationship between the day of the week and stock market returns at the Nairobi Securities Exchange. The days in which the stock market was closed were deleted from the sample to achieve the most accurate return. These non-trading days were deleted so that the daily average return would not be biased by the significant amount of non-trading days over the period of three years.

3.4 Sample design and sample techniques

The sample included companies listed continuously for three years from 1st January 2011 to 31st December 2013 and for which data on stock returns was included in the Nairobi Securities Exchange All Share Index (NASI).

3.5 Data collection

The study relied entirely on secondary data which was obtained from the records at Nairobi Securities Exchange. Data for the three year period 2011 to 2014 was sourced. The data series comprised of the daily market all share index (NASI). This will allowed for comparison of market average daily returns for different days of the week. The comparison also established if they follow a particular trend.

3.6 Data analysis

To start the research the data was converted in order to obtain daily returns. This was done according to the following formula:

$$R_t = (PI_t - PI_{t-1})/PI_{t-1}$$

R_t = the return for day t as a percentage of the day before

PI_t = the index on day t

PI_{t-1} = the index one day before day t

3.6.1 Trading time hypothesis

One of the first explanations for the weekend effect was formed by French (1980) where two hypotheses were developed: *Calendar time Hypothesis* and the *Trading time Hypothesis*. The question was: "*whether the process operates continuously or only during active trading days*" (French, 1980). For the purposes of this investigation, the trading time Hypothesis was adopted.

The following regression was developed by French to test the Trading time hypothesis:

$$R_t = \alpha + \gamma_2\, d_{2t} + \gamma_3\, d_{3t} + \gamma_4\, d_{4t} + \gamma_5\, d_{5t} + \varepsilon_t$$

In this regression R_t is the return of the index.

The dummy variable d_2, d_3, d_4, d_5 will be '1' on the day the return is measured. If the return is measured on another day the dummy variable will give '0'. For example for Tuesday d_2 will be '1' and d_3, d_4, d_5 will be '0'.

α (alpha) shows the expected return on Monday.

The variables $\gamma_2, \gamma_3, \gamma_4, \gamma_5$ measure " *the difference between the expected return for Monday and the expected return for each of the other days of the week*" (French, 1980).

The Trading time hypothesis stipulates that $\gamma_2 = \gamma_3 = \gamma_4 = \gamma_5 = 0$. As a result the daily return of indices will be expected to be the same for each day.

ε_t is the error term for the model

The Data from the regression model above was analyzed using the MS Office Excel (2007) software. Test of significance and magnitude of the daily return was carried out for the coefficients using the p values and F test was also performed for the entire model.

The hypothesis is:
Ho: $\gamma_2 = \gamma_3 = \gamma_4 = \gamma_5 = 0$
HA: $\gamma_2, \gamma_3, \gamma_4, \gamma_5 \neq 0$
The study examined the significance of γ_i and the p value of the coefficients. If the p value is less than 0.05, it implied that the coefficients were statistically significant.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter constitutes the analysis of data collected from the Nairobi Securities Exchange from January 2011 to December 2013. The daily NASI is used to compute the daily market return for each trading day. The Nairobi Securities Exchange does not open over the weekend. Saturdays and Sundays have been excluded as a result of this.

4.2 Background Information

4.2.1 Companies Forming NASI Indices

This NASI index primarily focuses on price changes amongst all companies in the securities exchange companies. As a result, NASI reflects the entire changes in stock prices. (Appendix 1)

4.2.2 Market Returns

The percentile change operator is used to calculate the daily market returns from NASI. Table 1 reports preliminary statistics for the returns for the entire study period as well as the market return for each day of the week.

Table 4.1 Preliminary statistics for market returns

STATISTICS	ALL DAYS	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
OBSERVATIONS	744	146	151	148	151	148
MEAN ($1*10^{-4}$)	4.5263	-5.2228	7.0833	10.3181	4.1281	6.3245
VARIANCE ($1*10^{-5}$)	4.4643	4.1345	6.4528	3.7943	4.3915	3.5234

Source: Researcher (2014)

4.3 Correlation of Study Variable

Correlation tests were carried out on the original data to show the extent or strength and direction of the relationship between daily market returns. It should be noted that correlation does not show causality between different day returns. From theory, a correlation coefficient which is close to 1 implies a strong positive (for a positive sign) relationship or strong negative relationship (for a negative sign). The signs inform on whether the relationship is positive or negative.

Table 4.3 below presents the correlation for the variables under study.

Table 4.2 Correlation of daily market returns

	α (Monday)	Rt (Tuesday)	Rt (Wednesday)	Rt (Thursday)	Rt (Friday)
α (Monday)	1				
Rt Tuesday	0.578773905	1			
Rt Wednesday	0.238057086	0.2976208	1		
Rt Thursday	0.00865891	-0.047405	0.495988	1	
Rt Friday	-0.126239416	-0.119271	0.203726	0.393290958	1

Source: Researcher (2014)

From table 4.3 above, shows there is a weak negative correlation -0.126 between Friday market returns and Monday market returns. This shows that there is a weak reverse causality relationship between Monday and Friday market returns.

4.4 Regression model summary of the effect of independent variables on the dependent variable

Table 4.3 Regression statistics

Regression Statistics	
Multiple R	0.665726281
R Square	0.443191482
Adjusted R Square	0.439616467
Standard Error	0.005034896
Observations	628

Source: Researcher (2014)

R Square is the coefficient of determination and is equal 0.443, which is a relatively average fit. 44% of the variation in returns is explained by the independent variables. The closer to 1, the better the regression line fits the data. The adjusted R Square shows a 43.96% fit which shows a relatively significant causality between the independent variable and the explanatory variables.

Table 4.4 ANOVA

ANOVA

	df	SS	MS	F	Significance F
Regression	4	0.012570558	0.003142639	123.9691402	8.52241E-78
Residual	623	0.015793159	2.53502E-05		
Total	627	0.028363717			

Source: Researcher (2014)

Significance F is 8.52241E-78 which is way lower than 0.05 hence indicating that the results are statistically significant. The p-values in the table below shows that all p-values are below 0.05 except for the intercept which is okay since most of the variables are below the 0.05 p-value. Hence the results are statistically significant.

Table 4.6 Summary output

	Coefficients	Standard Error	t Stat	P-value
Intercept	2.65546E-05	0.000203378	0.130567835	0.896159337
γ2 (Tuesday)	0.745217145	0.058662815	12.70339906	4.82914E-33
γ3 (Wednesday)	0.478623659	0.051095013	9.367326263	1.34213E-19
γ4 (Thursday)	0.514154236	0.043678442	11.77135024	5.04473E-29
γ5 (Friday)	0.465481007	0.043165342	10.78367467	5.6254E-25

Source: Researcher (2014)

The study conducted a multiple regression analysis so as to determine the relationship between the market returns and day of the week.

The regression $R_t = \alpha + \gamma_2\, d_{2t} + \gamma_3\, d_{3t} + \gamma_4\, d_{4t} + \gamma_5\, d_{5t} + \varepsilon_t$ was:

$$R_t = 2.65546E\text{-}05 + 0.745217145 d_{2t} + 0.478623659 d_{3t} + 0.514154236 d_{4t} + 0.465481007 d_{5t}$$

Where, R_t is the market return for the day, d_2, d_3, d_4, d_5 are dummy variables for the day of the week the return is measured from Tuesday to Friday respectively. From the regression we reject the null hypothesis Ho: $\gamma_2 = \gamma_3 = \gamma_4 = \gamma_5 = 0$

The data was also regressed against the weekly average returns to establish the relationship between the daily returns and weekly performance and the following statistics were established.

Table 4.7 Regression statistics

Regression Statistics	
Multiple R	0.986416111
R Square	0.973016745
Adjusted R Square	0.972843553
Standard Error	0.001101044
Observations	785

Source: Researcher (2014)

R Square equals 0.973, which is a very good fit. 97% of the variation in returns is explained by the independent variables. The closer to 1, the better the regression line fits the data.

Table 4.8 ANOVA

ANOVA

	df	SS	MS	F	Significance F
Regression	5	0.034054394	0.006810879	5618.151199	0
Residual	779	0.000944381	1.2123E-06		
Total	784	0.034998775			

Source: Researcher (2014)

Significance F is 0 which is way lower than 0.05 hence indicating that the results are statistically significant. The p-values in the table below shows that all p-values are below 0.05 except for the intercept which is okay since most of the variables are below the 0.05 p-value. Hence the results are statistically significant.

Table 4.9 Summary Output

	Coefficients	Standard Error	t Stat	P-value
Intercept	-8.42104E-05	3.95907E-05	-2.127025342	0.033731602
γ_1 (Monday)	1.248670578	0.017092158	73.05517605	0
γ_2 (Tuesday)	1.078496129	0.011913312	90.52865543	0
γ_3 (Wednesday)	1.005625063	0.014519361	69.26097161	0
γ_4 (Thursday)	0.965189147	0.013049342	73.96458228	0
γ_5 (Friday)	0.933234843	0.014073513	66.31143512	0

Source: Researcher (2014)

The above analysis showed that there was a significant difference in the returns of different trading days given the different coefficients for different days. This implies that there is weekend effect at the Nairobi Securities Exchange.

4.5 Summary, Interpretation & Major Findings.

4.5.1 Summary

The daily returns for Monday through Friday were analysed. The analysis showed that the highest returns are recorded on Wednesday while the lowest are recorded on Monday. This study also showed that returns increases from Monday till Wednesday then decreases on Thursday due to weekend effect and further picks up on Tuesday. This clearly shows that there exists a pattern across the days of the week. This study support the earlier research conducted by Poshakwale (1996) on the day of the week effect in India Securities Exchange. It concludes that there exists weekend effect in the Nairobi Securities Exchange.

4.5.2 Discussion

This study shows that there is a relationship between day of the week and stock market returns. This has been depicted by the regression model findings. Weekend effect is an empirical irregularity in common stocks (Bailey, Alexander and Sharpe, 1999). Certain cross-sectional differences among stock returns have been found to occur with regularity. Some regularity should occur according to certain asset pricing models. For example, the CAPM asserts that different stocks should have different returns because different stocks have different betas. According to Bailey, Alexander and Sharpe (1999), seasonal patterns in stock returns should be quite minor (if they exist at all), because they are not suggested by traditional asset pricing models. It is often assumed that the expected daily returns on stocks are the same for all the days of the week. That is, the expected return on a given stock is the same for Monday as it is for Tuesday as it is for Wednesday as it is for Thursday and as it is for Friday. However the findings of this study refutes this belief. Also evidence from other studies by French (1980) and Gibbons and Hess (1981) found significant variations in daily stock returns. These studies looked at the average daily return on NYSE – listed securities and found that the return on Monday was quite different from the returns on other days. In particular, the average return on Monday was found to be much lower than the average return on any other day of the week. Furthermore, the average return on Monday was negative, whereas the other days of the week had positive average returns. These findings are in agreement with the findings of this study which established that Monday has the lowest returns.

4.5.3 Major Findings

From the analysis we have noted that the p value of the coefficients that is Monday index, Tuesday index, Wednesday index, Thursday index and Friday index are less than 0.05 thus existence of relationship. The study also indicate that coefficient of determination R square is 0.443 (44.3%). This implies that the variations market returns can be explained by day of the week by 44.3%. The negative mean returns on Monday compared to Friday's positive mean returns also indicate the existence of weekend effect in the NSE.

From the analysis, Wednesday had the highest return than any other day of the week. Monday on the other hand had the lowest negative return. This contradicts the observation by researchers such as Cross(1973), Gibbons and Hess(1981), Onyuma (2009) and many others who observed that Monday had the lowest negative return while Friday had the highest positive return.

The results show that there is a significantly weak relationship between the dependent variable which is the stock market return and independent variables which are the five days of the week. The regression model does not help to explain the stock market return.

The regression model indicates variations in the returns from different trading days showing that Wednesdays had the highest positive return at $10.3181*10^{-4}$ while Monday had the lowest negative return at $-5.2228*10^{-4}$. Tuesday was the most volatile day of the week with a variance of $6.4528*10^{-5}$ while Friday was the least volatile day at a variance of $3.5234*10^{-5}$.

4.5.4 Previous Studies

While the earliest research on intraweek return regularities focused on market-wide return measures, a number of authors have investigated the weekend effect using size-sorted return portfolios. Keim and Stambaugh (1984) show that the nine largest deciles of firms generally experience significantly negative Monday returns over the 1963-1979 period. The smallest decile of firms has a small, insignificantly negative return over that

period. Rogalski's (1984) results closely mimic those of Keim and Stambaugh. Harris (1986) tests similar hypotheses using transaction data from the Fitch tape for the December 1,1981 to January 31, 1983 sample period. Using close-to-close returns, he finds negative Monday returns for all deciles. This study found negative Monday returns in the Nairobi Securities Exchange and is in agreement with the above mentioned studies.

The findings of this study contradict Jordan and Jordan (1991) who conducted seasonality tests for corporate bonds on the Dow Jones composite bond average for the period 1963-1986. They did not discover any meaningful difference in mean daily returns for fixed income securities. It also contradicts the findings of Abdalla (2012) who investigated the existence of the day of the week effect in the Sudanese stock market for both the returns and conditional variance (volatility) using daily observations of the general price index series from Khartoum Stock Exchange (KSE), from 2006 to 2011. Empirical results of the different models found negative and statistically insignificant mean returns for all days of the week which indicated the absence of the day of the week effect in both return and volatility equations for the Khartoum stock exchange.

This study also showed that Tuesday has the highest volatility (Variance of $6.458 * 10^{-5}$) while Friday has the lowest variation of $3.5234 * 10^{-5}$. These findings are in contradiction with the study conducted by Berument, Inamlik and Kiymaz (2004), on his study on the day of the week effect and stock market volatility a case of Istanbul stock exchange, the conclusion in their study was that Monday has the highest variance with 0.933 and Tuesday with the lowest volatility of -0.716. Moreover, Friday has the highest return and Monday has the lowest return.

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CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary

This chapter is a synthesis of the entire study, and contains summary of research findings, exposition of the findings, commensurate with objectives, conclusions and recommendations based thereon.

The objective of the study was to determine the daily stock returns for the all five days of the week. It also sought to determine if there is a significant difference in stock returns for all the five trading days. Data was bought from the Nairobi Securities Exchange. It was then analysed using MS excel sheets to compute the daily stock market returns.

From the analysis, Tuesday had the highest return than any other day of the week. Monday on the other hand had the lowest and negative return. This contradicts the observation by researchers such as Cross(1973), Gibbons and Hess(1981), Onyuma (2009) and many others who observed that Friday had the highest positive return. The results show that there is a relatively significant relationship between the dependent variable which is the stock market return and independent variables which are the five days of the week.

The study also sought to investigate the existence of weekend effect in the market returns of the Nairobi Securities Exchange. Regression analysis was used to establish the nature of relationships of variables under the study. This was motivated by the need to establish whether market returns are affected by the trading day at the NSE and whether the same can be used to predict stock prices in trading at the NSE. Predictability of stock prices would enable traders to take advantage of trends and make profits.

Correlation for the five trading days shows that there is a relatively weak correlation between different trading day performances. In the preliminary statistics table, the mean

returns for Monday are negative compared to positive mean returns for the other days of the week, This confirms the existence of the weekend effect at the NSE.

5.2 Conclusion

The primary objective of this paper was to investigate the existence of weekend effect on stock market returns at the Nairobi Securities Exchange for the period from January 2011 to December 2013. From the research findings as presented, Tuesday had the highest positive return and Monday had the lowest negative return. The mean returns among the five days are significant at 5% confidence level. The returns on Friday are positive compared to Monday negative returns. The study strongly concludes that the day of the week affects the stock return. This implies that there is weekend effect at the Nairobi Securities Exchange. Investors should focus their investment strategies on favourable day of the week to make their trading decisions.

The study also determines the relationship between of day of the week and Stock market return at the Nairobi Securities Exchange. A multiple regression was run to predict Return from days of the week such as Monday, Tuesday, Wednesday, Thursday and Friday. These variables which are day of the week are statistically significant that is $P<0.05$ that is test for the regression model and R square is 0.443 or 44.3%. Thus the study conclude that there exist a relationship between day of the week and stock market return at the Nairobi Securities Exchange.

The analysis showed that the highest returns are recorded on Thursday while the lowest are recorded on Monday. These study also showed that returns increases from Monday till Thursday then decreases on Friday due to weekend effect and further picks up on Tuesday. This clearly shows that there exists a pattern across the days of the week. This study support the earlier research conducted by Poshakwale (1996) on the day of the week effect in India Securities Exchange.

5.3 Recommendation to Policy & Practice

The day of the week effect purports that there is the existence of a pattern on the part of the stock returns, whereby these returns are linked to a particular day of the week. Nairobi securities Exchange also depict this pattern. The day of the week effect pattern in return might enable the investors to take advantage of the regular shifts in the market by designing trading strategies, which account for such predictable pattern. The Investors can buy securities in a Monday when the security prices are low and sell it on Wednesday when the prices are high hence making an arbitrage profits.

The study also indicate that the stock market anomaly do exist at the Nairobi securities exchange. It is for this reason that the study recommends to the government to come up with more regulations which will improve the efficiency of the stock market. The government should put in place more regulation so that the stock market becomes a fair playing ground with minimal cases of exploitation. The government is in a better position to monitor the performance of the stock market hence ensuring economic stability of the country.

From the research findings, it is evident that the weekend effect anomaly exists in the NSE. From the analysis made in the previous chapter, various recommendations can be made. There is need for traders to study market trends further and take trading advantage of such anomalies. The regulatory authority (CMA) should also study this anomaly and other market trends and come up with a structure that reduces these anomalies to make the NSE efficient thus reducing trading advantages. The NSE also should investigate further why the market returns on Monday were negative unlike on other days.

The study recommends that investors should not consider the days of the week in their trading transactions at the Nairobi Securities Exchange. Investors should carry out fundamental and a detailed market analysis to identify the key factors that affect stock returns at the NSE.

5.4 Limitations of the Study

The study only concentrated on the National Securities Exchange all stock index (NASI). As such, accuracy and reliability of the historical data used to generate results for the study is only correct as captured in the data sources as any rounding off is known to greatly affect the outcome of the index.

The study was limited to three years due to the cost of data. A longer duration should have been used to increase the number of observations. This study considers the cyclic factors influencing the stock market returns rather than the fundamental factors. Amongst the cyclic factors, the research has considered only daily variation in the stock returns. There might be seasonal variations (January effect), monthly variations, or even intraday (mid-day swoon) variations in the returns, which can also be studied in combination with the day of the week effect.

This study also does not differentiate between institutional traders and others and their effect on the trades. Institutional traders have more market information than individual investors. They can carry out research to obtain more market information to base their investment decisions. The returns of equities held by institutional investors might be different from those held by individual investors.

The study covered a period of three years from 1st January 2011 to 31st December 2013. The study based on the NASi for the day to ascertain the return which was regressed against the day of the week as done by the other researchers who did similar study but in the developed International Securities Exchange such as in United states of America, Canada and Turkey. However their study also compared the findings with the intraday variance of the returns to justify or prove further that day of the week do exist. It was not possible to measure variance using prices measured during the day since Nairobi Securities Exchange maintains the lowest price, highest price and the average price for the day. The intraday NASI movement could not be measured.

The results presented in the study are not adjusted for transaction costs. Transaction costs definitely affect the market stock returns. Some of these costs are fixed and others are variable based on volume of trade and the day of the week. This research did not factor in the costs of carrying out equity trade.

5.5 Areas of Further Research

More research on market anomalies should be carried out with different methodologies to determine if results are consistent with other studies. Other statistical tests should be performed to test if the null or alternate hypothesis can still be accepted.

Further research should also be carried out using data for different time periods. This will help in determining the consistency of the results obtained. It will also help to make more conclusive recommendations to investors at the NSE.

Day of the week in market anomalies should also be carried out in fixed income instruments to find out if the day of the week effect anomaly exists. Trading in fixed income instruments like Treasury Bills and Treasury Bonds is different from the way equity instruments are traded. The study therefore cannot conclude that that there is no day of the week without carrying out a similar study in fixed income instruments.

Day of the week effect studies should also be extended to the returns of individual stocks. Individual equity stocks have different trading characteristics.

The findings of this study only confirmed negative Monday returns for the period. Based on these findings further research can be done to determine the cause of this anomaly. The study may also be extended to other periods or a much longer period than the three year period studied in this investigation. This study examined the existence of weekend effect for market returns; a further study can be done to determine whether such exists for individual stock returns in the NSE. In addition, other seasonal anomalies can be investigated to establish if they exist in the market.

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APPENDICES

Appendix 1. companies forming NASI

ABBREVIATION	COMPANIES
1. ARM	ARM Cement Ltd
2. BOC	B.O.C Kenya Ltd
3. BAMB	Bamburi Cement Ltd
4. BBK	Barclays Bank Ltd
5. BAT	British American Tobacco Kenya Ltd
6. BRIT	British-American Investments Company Ltd
7. C&G	Car and General (K) Ltd
8. CARB	Carbacid Investments Ltd
9. ICDC	Centum Investment Company Ltd
10. CFC	CFC Stanbic Holdings Ltd
11. CIC	CIC Insurance Group Ltd
12. COOP	Co-operative Bank of Kenya Ltd
13. BERG	Crown Berger Ltd
14. DTK	Diamond Trust Bank Kenya Ltd
15. CABL	E.A. Cables Ltd
16. PORT	E.A. Portland Cement Ltd
17. EGAD	Eaagads Ltd
18. EABL	East African Breweries Ltd
19. EQTY	Equity Bank Ltd
20. EVRD	Eveready East Africa Ltd
21. XPRS	Express Ltd
22. HAFR	Home Afrika Ltd
23. HFCK	Housing Finance Company Ltd
24. I&M	I & M Holdings Limited
25. JUB	Jubilee Holdings Ltd
26. KUKZ	Kakuzi

27.	KAPC	Kapchorua Tea Company Ltd
28.	KEGN	KenGen Ltd
29.	KENO	KenolKobil Ltd
30.	KQ	Kenya Airways Ltd
31.	KCB	Kenya Commercial Bank Ltd
32.	ORCH	Kenya Orchards Ltd
33.	KPLC	Kenya Power and Lighting Ltd
34.	KPLC-P4	Kenya Power and Lighting Ltd 4%
35.	KPLC-P7	Kenya Power and Lighting Ltd 7%
36.	KNRE	Kenya Re-Insurance Corporation Ltd
37.	CFCI	Liberty Kenya Holdings Ltd
38.	LIMT	Limuru Tea Company Ltd
39.	LKL	Longhorn Kenya Ltd
40.	MASH	Marshalls (E.A.) Ltd
41.	MSC	Mumias Sugar Company Ltd
42.	NSE	Nairobi Securities Exchange Ltd
43.	NMG	Nation Media Group
44.	NBK	National Bank of Kenya Ltd
45.	NIC	NIC Bank Ltd
46.	OCH	Olympia Capital Holdings Ltd
47.	PAFR	Pan Africa Insurance Holdings Ltd
48.	REA	Rea Vipingo Plantations Ltd
49.	SCOM	Safaricom Ltd
50.	FIRE	Sameer Africa Ltd
51.	SASN	Sasini Tea and Coffee Ltd
52.	SCAN	ScanGroup Ltd
53.	SCBK	Standard Chartered Bank Ltd
54.	SGL	Standard Group Ltd
55.	TOTL	Total Kenya Ltd
56.	TPSE	TPS Eastern Africa (Serena) Ltd
57.	TCL	Trans-Century Ltd

58.	UCHM	Uchumi Supermarket Ltd
59.	UMME	Umeme Limited
60.	UNGA	Unga Group Ltd
61.	WTK	Williamson Tea Kenya Ltd

(Source: NSE, 2014)