THE MONDAY EFFECT ON STOCK RETURNS AT THE NAIROBI SECURITIES EXCHANGE

BY

BERNARD AYABEI RUTTO

D61/65385/2011

A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF BUSINESS ADMINISTRATION, UNIVERSITY OF NAIROBI

OCTOBER, 2014

DECLARATION

This project is my original work and to the best of my knowledge has not been submitted for award of a degree at the University of Nairobi or any other University.

BERNARD AYABEI RUTTO

D61/65385/2011

SIGNED:..... DATE:.....

BY SUPERVISOR

This research Project has been submitted for examination with my approval as the university supervisor.

SIGNED:..... DATE .....

NAME: JAMES M. NGANGA

Lecturer, Department of Finance and Accounting

ACKNOWLEDGEMENT

This research project would not have been completed successfully without the contributions and support of different people who I sincerely thank. I wish to acknowledge the contributions and support of my supervisor Mr. James Nganga, who consistently offered guidance throughout the study. I also wish to express my gratitude to my dear family for their support and understanding during the whole process.

Finally, my gratitude goes to the almighty God for giving me the strength to successfully undertake this project.

DEDICATION

I dedicate this project to my dear parents, Charles Ayabei and the Late Emily Ayabei who ensured I enjoyed the right to education.

ABSTRACT

The study was conducted to establish the existence of the Monday effect on stock returns at the Nairobi Securities Exchange (NSE). The study sampled the counters constituting the 20 share index owing to their 80% contribution to total volumes trading at the NSE. The study adopted the descriptive study methodology and employed the logarithmic mean to establish the average returns. The daily stock closing prices were used in computing the mean returns while the daily average returns were used in the comparison of the performance of each day. Basic descriptive statistics such as the mean, median, standard deviation, kurtosis and skewness was used as a preliminary analysis of the behaviour of stock prices during days of the week. The results of the study showed that the lowest returns are recorded on Tuesdays while the highest returns are recorded on Fridays. The recorded trend showed that the stock prices hit the highest price on Fridays, and record a dip of Mondays, consistent with the Monday effect theory. The results further showed that the daily returns between Monday and other days of the week are statistically significant. It is therefore imperative that the Monday's returns are significantly different from other days of the week.

TABLE OF CONTENTS

LIST OF TABLES

ABBREVIATIONS

CMA - Capital Markets Authority

EMH – Efficient Market Hypothesis

GEMS - Growth and Enterprise Market Segment

NSE – Nairobi Securities Exchange

S& P - Standard and Poors

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

In an efficient market, there would be no undervalued or overvalued stocks and market efficiency is the pure drive behind rational investment strategy. Informational efficient market is one in which the market price is an unbiased estimate of the true value of an investment. Efficient Market Hypothesis (EMH) further states that the current price fully reflects all available past and current information. Fama (1970) stated that the informational efficiency of financial markets requires that the market prices and rates of return reflect all the available information at any one given time. From these provisions, all trading days of the week are expected to record same average returns. However, several empirical studies have recorded contradicting results implying existence of market anomalies that contradict provisions of EMH. Key among these anomalies are market returns associated with big announcements like political changes, trading news, change of company leadership among others. Most peculiar anomalies are the calendar/seasonality effects where returns in the market at certain days of the week are significantly different from other days' returns, a phenomena referred to as 'Day of the week effect'.

Academicians and practioners have documented many a research works on these market seasonality and the associated behavior of securities market over the world. Nageswari, Selvam and Gayathri (2011) state that the most widely mentioned seasonality effects and market anomalies are January effect, Monday effect, holiday effect and small firm effect.

This study investigates the existence of the Monday effect at the Nairobi Securities Exchange (NSE).

1.1.1 The Monday Effect

The Monday effect is among the most widely discussed calendar anomalies in which the average stock returns (Monday's) is significantly lower than the other days' average returns. Fridays normally present the highest return over majority of the stock markets of the world. Though there has been a number of attempted explanations to calendar anomaly, none of the attempts have exclusively accounted for this anomaly. One of the reasons quoted is that Monday has the lowest trading volume and in which the propensity of individuals to transact is higher relative to other days while that of institutional investors (apparently they are the main market participants) is lower relative to other days. Settlement costs as well have been used to explain the calendar anomalies. With five days in a trading week, if the settlement date is the second day, then Thursday's return is expected to be higher than the rest of the week. According to Nageswari, Selvam and Gayathri (2011), investors buying on the Wednesday close price and selling on Thursdays close price, then the return on Thursday will be higher.

Another attempt at explaining the Monday effect is that bad news are mostly released on Fridays, leading to individual investors doing most of their sales on Mondays. Individual investors are also believed to use Mondays to satisfy their liquidity needs.

1.1.2 Security Returns

Stock return can be defined as the change in stock prices relative to the initial prices at the point of investor's decision to purchase the stock. In an efficient market, changes in prices are expected to be random and unpredictable since stock prices are expected to reflect all available information in the market. From this perspective, the stock returns are expected to remain the same in any trading day. Conceptually therefore, the stock price is an unbiased estimator of the value of the stock at any one given time. The random walk hypothesis states that future prices are not predictable on the basis of past prices implying that stock price changes are unpredictable. Information contained in past prices is fully and instantaneously reflected in current prices as argued by Fama (1965). Subsequent to this study, several other researchers have conducted studies on the randomness of stock price behavior as a general investigation on the efficiency of capital markets. The research papers have concentrated on two theoretical directions.

The calendar time hypothesis floated by Sharma (2004) assumes that the return generating process is a continuous one implying that Monday's average returns estimated from Friday's closing prices would be different from other days' stock returns. According to French (1980), this difference would be as a result of the fact that the returns represent three days' investment and would therefore imply that the distribution of the Monday's returns would be thrice that of other days.

The second hypothesis is the trading time hypothesis which provides that the returns of common shares are generated during a transaction. As such, the mean return of shares

should be the same for all working days as each day's return represents one day's investment, that is, shares are purchased at the opening price and sold at closing price the same day.

1.1.3 Monday Effect and Security Returns

Among the calendar anomalies, the Monday effect has drawn a lot of attention among researchers. It is therefore the most widely documented and comprehensively investigated anomaly in different markets of different countries considering different securities and indices and different framework. With 52 weeks in a calendar year, the existence of this anomaly would pose a great challenge to the efficiency of capital markets since it would imply that investors are able to beat the market on a weekly basis.

As seen earlier in this study, several attempts put across have not answered to conclusiveness the existence of this anomaly. The most postulated theory is the release of damaging news during weekends when the market is closed. Though the market has time to react to such news before reopening on Monday, this does not prevent the 'panic' selling on Mondays. However, according to French (1980), if news is expected in the market, the market should immediately adjust prices and not wait till release of news over the weekend.

Keim and Stambaugh (1984) gave a suggestion that the Monday effect could be as a result of measurement errors in the market. In their theory, the Monday's low returns may be a direct result of the effect of positive errors included in the stock prices reflected on Friday's returns. This theory however was not supported by results of their own study.

Jaffe and Westerfield (1985) who examined the Japanese, UK, Canadian and Australian stock markets and concluded that these markets displayed this anomaly. However, according to their findings, the Japanese and the Australian markets displayed their lowest returns on Tuesdays as opposed to Mondays as opposed to the results of the US markets.

While trying to narrow down to company specifics, Choy and O'hanlon (1989) established a positive relationship between the day of the week effect and the company size in the UK market. These findings however contradicted the results obtained by Rogalski (1984) who found negative correlation between company capitalization and the day of the week effect.

It is worth noting here that some studies conducted in the international market have produced interesting results. An example are the results conducted by Peiro (1994), it was concluded that the last three decades have seen a decline on the Monday effect in global stock exchanges. Particularly, London was seen to record a significant decline as compared to other markets. It would therefore be of interest to investigate the replication of such results in developing markets.

1.1.4 Nairobi Securities Exchange

The Nairobi Securities Exchange (NSE) is one of the emerging markets and like many other emerging markets has undergone rapid growth over the years. The market started off informally in the 1920's during the colonial era. It was informal then since no trading

rules existed with most trades being private gentleman's agreements. In 1951, the market was formalized leading to recognition as an overseas stock exchange by the London Securities exchange. By this time, only one stock broker existed. In 1954, Nairobi stock exchange was registered under the societies act as an association of stock brokers. Despite the milestones in formalizing the market, trading at this time was only between resident Europeans, a situation that persisted until 1963 when Kenya gained her independence. The activity in the NSE almost came to a halt in the independence days as a result of the uncertainty surrounding the new sovereign status of the country. With flow of information, the bourse regained consciousness over time. Today, the exchange consists of 19 registered brokers and 62 listed companies.

The existence of seasonality effects at the Nairobi Securities Exchange has not received much attention in research. However, a number of studies conducted have signified an underlying seasonality behaviour which should be investigated further. Kerubo (2011) while investigating the day of the week anomaly reported non – normally distributed returns with various sectors reporting fatter tails and high peaks non characteristic of normality. A similar result was reported by Mwinamo (2010) who reports a high volatility in the stock returns on Monday and a low volatility on Thursday.

Contradictory results were recorded by Kamau (2003) who reported that stock returns at the NSE have largely gravitated between -2% and 2% though with occasional trend breakups which he insinuates to be on a six month cycle. He attributes these trend breakups with half year announcements which surprise investors therefore jerking off

investor reactions. A similar result was reported by Kosgei (2008) who investigated the existence of the weekend effect at the NSE. He reported that Monday's results were not any significantly different from any other day and as such technical trading rules cannot be useful in forecasting the performance of any particular stock in the market. He concludes his study by alluding that the day of the week is not a good indicator of stock returns at the NSE.

From the foregoing, it is clear that different results have been recorded on the existence of seasonality effects at the Nairobi Securities Exchange over time. This study therefore sought clarity on the existence of the Monday effect at the Nairobi Securities Exchange.

1.2 Research Problem

Calendar effects connote the changes in security prices in securities market following certain trends based on seasonal effects. Such trends or consistent patterns occur at a regular interval or at a specific time in a calendar year. Presence of such anomalies in any securities market is the biggest threat to the concept of market efficiency as these anomalies may enable securities market participants beat the market by observing these patterns. This notion again violates the basic assumption of efficient market hypothesis (EMH) that no one can beat the market and earn the profit in excess of market. Daily securities returns are also different from each other at different points of time during the month.

The Monday effect can be explained as the behavior of security returns to be consistently low and negative on Monday's than any other day of the week. Theoretically, this behavior like many other seasonality effects have not been explained. This is because the behavior contradicts the expectation of higher returns on Monday, which represents three days returns from Friday

Whereas numerous studies exist on the market seasonality in developed markets, very few studies have been conducted in the context of developing markets. The phenomenon has been confirmed in United Kingdom, Japan, Canada and Australia.

Locally, Onyuma (2009) examined the day of the week effect at the NSE and found that Monday and Friday present the lowest negative and highest positive returns respectively. This study was based on market data up to the close of the year 2008. The lapse of time, changes in the market consequent to technology upgrades and market participation has necessitated a further study on the existence of the market anomalies at the NSE. One of the market participation changes was the introduction of Growth and Enterprise Market Segment (GEMS) in January 2013. The counter today has only one listed firm. The Kenyan Economy as well has seen major changes especially with the onset of the new constitutional order in 2010. This study therefore sought to establish the existence of the Monday effect on stock returns for stocks trading at the NSE by incorporating more current data.

1.3 Objectives of the study

The objective of this study is to investigate the existence of Monday effect on stock returns for securities trading at the Nairobi Securities Exchange.

1.4 Value of the Study

The study will be beneficial to scholars, existing and potential investors, listed companies, Government and quasi government bodies among others. To scholars, this study will add new knowledge into the scholarly world with an opportunity to build new studies around it, test for its consistencies over time, constructively critique or support the study thereby enlarging their knowledge in finance.

To the stock market players, this study will shed more light on the patterns of stock returns on Mondays. Existing and potential investors will therefore make informed decisions on the trading positions to take during weekly trade openings, while brokerage firms will be more enlightened while giving investment advice to their clients on investment decisions, as well as shaping investor expectations on stock return trends.

Finally, government and quasi government bodies such as Capital Markets Authority (CMA) and Nairobi Securities Exchange can use the results of the study in formulating valuable policy and legal framework aimed at developing the stock market.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

While conducting the study on Monday effect on securities listed at the Nairobi Securities Exchange, it is important to review key related theories in Finance as well as revisit some related studies. In this chapter, the researcher therefore revisits two finance theories, Calendar Anomalies as well as a review of past related studies.

2.2 Theoretical Review

In this section, the study revisits the Efficient Market Hypothesis (EMH) and the Random Walk Theory.

2.2.1 Efficient Market Hypothesis

The efficient Market hypothesis postulates that the market price is an unbiased estimate of the true value of an investment in an informationally efficient market. According to Fama (1965), in an efficient market, the current market price of a security fully reflects all available information and that it is the fair price.

EMH can be looked at to imply two things. One is the rapid adjustment of the security prices to new information. It is therefore expected that there will be no delays in responding to the availability of information in the stock market. The second implication is that prices reflect all available information fully. This would imply that current day security prices reflect information in the market today and are independent of the past day

price changes. Considering that new information is unprecedented in nature, the resultant prices therefore should be unpredictable and random.

A further implication of this theory is that since prices reflect all information including public information, then no investor despite their level of expertise, and investing in a diversified portfolio in the market would make above average returns without accepting equally higher risks. According to Fama (1965), efficiency can be considered in terms of the 'fair game' concept where investors using the same set of information receive on average the return expected for the risk involved and make no consistent abnormal returns.

EMH assumes that there is rationality in the market where no relevant information is ignored and little or no systematic errors are made. The obvious result is that all prices are at levels consistent with market fundamentals. According to Fama (1969), the overall efficient market exists in three variants. In its weakest form, current stock prices already reflect past prices and return. A direct implication of this is that there exists no relationship between the past prices and the current prices. According to Shleifer (2000), no investor can make above average returns by devising a trading strategy based on past prices.

The semi-strong form EMH contends that all publicly available information is already reflected in stock prices. The implication is that upon the information becoming public, any investor who basis their investment decision on such decision will not make any

excess returns. Lastly, the strong form EMH postulates that the stock prices already carry all public and private information. Private information would be particular to a stock and can be assumed to belong or be available to insiders. However, from this variant, even the insiders cannot make above average risk adjusted returns by making use of their assumed vantage point since the information they have is already reflected in the stock prices.

Both academics and stock market professionals agree on the efficiency of the stock market in the semi – strong form. By reason therefore, there cannot exist any systematic way to exploit opportunities in this market to make superior gains. From EMH, a contest between investors after abnormal profits leads to a new set of stock prices. EMH does not assume that all investors are rational but rather assumes that the markets thereof are rational.

The tenets of EMH have been challenged by the assumptions that all market players are assumed to be are rational and will evaluate a set of information in an exact same way. Most anti efficiency theorists presents two investor scenarios where one investor is interested in the undervalued stocks and the other is looking for growth potential. The subsequent argument is that the two given a set of information will act differently. Further challenged is the validity of the assumption that no investor would make more profits that another while the two have the same amount of investment funds. Closely related to this is the assumption that no investor should be able to beat the market. However, there are a number of investors who have made it their game to beat the market and make an above average return.

As an answer to these challenges to efficiency, the modern market is characterized by computerized systems used to analyze stock investments, trades and corporations. This has lead to automation of investments based on strict fundamental and mathematical methods. Although it is difficult to attain 100% efficiency with the continued employment of human feelings and in investment decisions, a continued surge of technology into the stock market has helped improve the efficiency of the market to a great deal.

2.2.2. Random Walk Theory

The efficient Market hypothesis is inseparably related to the random walk theory. Bachelier (1964) put forward the idea that security prices follow random walk where random walk is used to refer to successive price changes being independent of each other so that past price movements cannot be used to predict future prices. This in itself implies that no trend can be derived from observing security prices over time. According to Lo and Mackinley (1999), Random walk theory is only possible in markets where new information is incorporated into stock prices rapidly.

Proponents of the Random walk theory follow the idea that stocks take a random and unpredicted path. They assert that it is impossible for an investor to outperform the market without assuming an additional risk commensurate with the abnormal gains. On the other hand, critics of the theory contend that prices do maintain a particular trend over time and it is therefore possible to outperform the market by carefully selecting the entry and exit points.

According to Fama (1965), the theory starts with the premise that the major security markets are efficient markets where profit maximizing participants are not only actively competing with each other but are trying to predict the future market values of individual securities. The markets are assumed to be so efficient that all information is available freely to all the participants. The competition among the many intelligent participants results to a situation where the current market prices of a security are a good estimate of the intrinsic value of that particular security.

From the basis of an uncertain world, participants will not agree on the intrinsic value of a security. As such, the actions of competing participants in an efficient market should cause the market prices to wander randomly around the intrinsic value. Where the difference between the intrinsic and the actual value of a security is systematic, then the intelligent market participants privy to this knowledge will try to take advantage of this situation consequently neutralizing the systematic behavior. Arising from this therefore is the assumption that though the uncertainty pertaining to the intrinsic value of the security will persist, the actual value will wander randomly around the intrinsic value.

In support of this theory, Shleifer (2000) argues that though some investors are not rational, their trades are either irrational with self cancelling effect or their influence is eliminated by the rational arbitrageurs.

The Random walk theory has received critism over time especially owing to its implication that chartists and the entire technical analysis are useless. At the basic level,

an investment is a gamble whose success is dependent on the ability to predict the future. With the concept of prices following a random walk, then investments can be assumed to be a walk in a dark ally.

Lo and Mackinley (1999) proposes that upon observing several consecutive periods of same direction price movement for a particular stock, investors will join in the band wagon consequently leading to short run price momentum. From their study, stock prices exhibit non-zero short run serial correlation therefore raising doubts about the premises of the random walk theory. This however does not hold in the long run where instead auto correlation is recorded, a situation referred to as mean reversion. However, according to Dupernex and Sophister (2007), different studies have reported different results therefore raising doubts about the existence of mean reversion.

A further contradiction to the Random walk theory was that proposed by Fama (1998) who proposes that due to conservatism, individuals faced with new evidence do not change their beliefs. The implication of this conservatism is that at the initial stages of the occurrence of the new evidence, investors over or under react leading to the short run momentum.

Lastly, evidence has been found where the market exhibits some seasonal anomalies during particular seasons namely months, days and holidays. The statistically significant differences in stock returns however have posed challenges where once found, the seasonality soon disappears as investors take advantage and consequently eliminate any

profitable opportunities. This study seeks evidence of the existence of one of the seasonal anomalies at the Nairobi Securities Exchange.

2.3 Determinants of market returns

A number of studies have been undertaken to identify the factors influencing stock prices in different stock markets. The literature available strongly supports the movement of stock price as a consequence of firm specific factors such as dividend , book value and earnings

The stock market is all about dynamics and that is why investors and fund managers have been time and again confronted with the problem of accurately predicting the stock prices so as to earn decent returns. Investment in shares offers the benefit of liquidity as well as the opportunity to beat the market and earn returns. Share price is not an independent in nature and both intrinsic as well as extrinsic factors have been established to exercise influence over stock price movement. The pioneering work on determinants of shareprices by Collins (1957) for US banks identifies dividend, net profit, operating earnings and book value as the factors influencing share prices.

2.4 Market anomalies

The EMH and Random Walk Theory became controversial especially after the detection of certain anomalies in the capital markets. Some of the anomalies that have been identified are as follows:

2.4.1 The Weekend Effect or Monday Effect

This is the tendency of stocks to exhibit significantly lower returns on Mondays than on the immediately preceding Friday despite there being two days in between. The Monday return spun 3 days and as such is expected to be higher than the Friday returns. On average, the security market returns on Monday are negative. Recent studies conducted in developed markets like the United Kingdom have recorded a disappearance of the Monday effect. This study investigates the existence of the Monday effect in the Kenyan stock market.

2.4.2 The January Effect

This is the tendency for stock prices to rise in January more than the increase in any other month of the year. The anomaly first observed in 1942 by investment banker Sydney Watchtel is attributed to the rush by investors to buy securities owing to the general December low prices. The December prices are assumed to be low as a result of investors selling of their investments to reduce on capital gain taxes. This anomaly has been studied extensively in the international markets.

Rozeff and Kinney (1976) were the first to document evidence of higher means returns in January as compared to other months. Using New York stock Exchange for the period 1904-1974 they found that the average return for the month of January was 3.48 percent as compared to only 0.42 percent for the other months. The effect has also been documented in recent studies including Bhardwaj and Brooks (1992) who investigated the existence of the January effect from 1977-1986. Reinganum (1993) concentrated his

study in the period 1961-1990 and noted that the effect is present in other countries as well. According to Gultekin and Gultekin (1983)the January effect has also been documented for bonds.

Maxwell (1998) show that the bond market is strong for non investment grade bonds, but not for investment grade bonds. He observed only after the Tax Reform Act of 1986.He also found that January effect is stronger since 1986. Taken together, their results support a tax-loss selling explanation of the effect. This is a challenge to EMH in that intra-month returns can results in superior returns.

2.4.3 Holiday Effect and the Turn of the Month Effect

The holiday effect is the tendency of a stock market to gain in the final trading day before a holiday. Past studies have shown that market returns prior to a holiday are often more than ten times larger than the average return during normal trading days. The pre holiday days are normally characterized by lower liquidity as many market players opt not to get involved in the market or to lower their exposure. The turn of the month on the other hand is the last day and the first few days of the month. Several studies have been conducted in the international market to establish the existence of both the holiday effect and the turn of the month effects.

In their study, Lakonishok and Smidt (1988) observed that US stock returns are significantly higher at the turn of the month. They defined turn of the month as the last and first trading days of the month. Cadsby and Ratner (1992) found similar turn of the month, effects in some countries but not in others. Ziemba (1991) found evidence of a

turn of the month effect for Japan when turn of the month is defined as the last five and first two trading days of the month. Jaffe and Westerfield (1989) noted that most empirical studies have found that stocks earn a positive average returns in the beginning and during the first half of the calendar and zero average returns during the second half. A weak monthly effect was also observed in foreign countries.

Kunkel and Compton (1998) examined how abnormal returns can be earned by exploiting this anomaly.

2.4.5 P/E Ratio Effects

The Price Earning Ratio effect is based on the premise that the ratio is an indicator of the performance of an investment. Low P/E stocks have a tendency to outperform high P/E stocks even after adjusting for the underlying risk. This anomaly has also received considerable attention internationally with scholars trying to establish its existence.

In his study, Basu (1977) noted that the stock of companies with low P/E ratio earned a premium for investors during the period 1957-1971. From his results, investors who held low P/E ration stocks earned higher returns than investors holding portfolios consisting of the entire stocks. Campbell and Shiller (1988) explained that P/E ratios have a reliable forecast power. Fama and French (1995) found that market and size factors in earnings help explain market and size factors in returns. Latter works of Meulbroek and Sloan (2001) documented that short- sellers position themselves in stock of firms with low earnings to price ratios since they are known to have lower future returns.

2.4.5 Small Firm Effect

The small firm effect holds that small firms (with small capitalization) tend to outperform larger firms in the stock market. The theory is based on the premise that the company's economic growth is the driving force behind its stock performance. Consequently, smaller firms have a greater amount of growth opportunities and tend to have more volatile business environment than larger firms consequently leading to a better performance in the stock market. The effect has also been explained by the fact that small firms have low prices and a small appreciation is more significant than a relatively larger appreciation in a large firm.

Banz (1981) published one of the earliest article on the small – firm effect " which is also known as the 'size'- effect". His analysis of the 1936 – 1975 period revealed that excess returns would have been earned by holding stock of low capitalization companies.
Reinganum (1981) observed that the risk adjusted annual return of small firms was greater than 20 percent therefore contradicting market efficiency theory.

2.5. Empirical Review

Globally, extensive studies have been conducted on the existence of the Monday effect on stock prices. However, most of the researches have concentrated on developed markets with just a handful of studies concentrating on the emerging markets. This section concentrates on studies conducted both in the international market and the Kenyan context.

In his study, Cross (1973) concentrated on the Standard and Poors index of 500 stocks (S&P 500) over the period 1953 to 1970. The results indicated that the index rose by 62 percent of the 15 Fridays sampled while only 39.5% was recorded as a rise on Mondays. The mean return recorded for Fridays was 0.12 percent while the mean return on Mondays was -0.18 percent. Similar results were obtained by French (1980) who also conducted his study using data obtained from the S&P 500 between 1953 and 1977. From his study, French found that the Monday mean return was negative for the entire period at – 0.168 while for the rest of the days the return was positive. Wednesdays and Fridays recorded the highest returns.

These two studies employed the difference between the closing price on Fridays and the closing Price on Monday as a measure of the Monday return. This begs the question whether prices fall during the day on Mondays or between Friday's closing and Mondays' opening price. To answer this question, Rogalski (1984) obtained opening and closing prices for the DJIA for the period October 1974 to April 1984 and for the S&P 500 for the period January 1979 to April 1984. From his study, prices rose on Mondays from the opening to the close. All the negative returns were recorded between the close of trading on Friday and the opening on Monday. This therefore resulted to the Monday effect being referred to as the weekend effect. Weekends in January were also found to be different from other months where January weekends and Monday returns are positive.

Coursey and Dyl (1986) employed a completely different approach to investigate the day of the week effect by using laboratory market experiments. They introduced trading

interruptions and observed the resultant pattern of prices. In their experiments, subjects traded assets with uncertain values. For the first two trading "days" of each three-day "week", the assets had a lifetime of one day. For the third day, which was followed by a one-period non-trading "weekend", assets had two-day lifetimes. The results were consistent with the evidence in actual security markets. The prices on the days before trading interruptions were significantly higher (per unit of return) than on other days.

Jaffe and Westerfield (1985) found proof of the Monday effect in equity markets of the United Kingdom, Canada, Japan and Australia. From their study, seven Monday returns were negative while the last day of the week recorded the highest returns. In Japan and Australia, the lowest mean returns occurred on Tuesday instead of Monday. Trying to associate Japans negative returns on Tuesday to the time zone differences, their results show no indication of a correlation between the two. However, this explained the seasonality in Australia.

Dubois and Lovet (1996) found negative returns on Monday or Tuesday for nine developed markets including Canada, Hong Kong, Germany, and France. Brooks and Persand (2001) concentrated their study on five South Asian stock markets and found evidence of the day of the week effect in Thailand, Malaysia and Taiwan. Monday returns were found to be significantly positive in Thailand and Malaysia while the Tuesday returns were found to be negative.

Locally, Mokua (2003) conducted a study to establish the existence of the weekend effect in stock returns at the Nairobi Securities Exchange. The study made use of the daily stock returns and equality of means to test for this seasonality. The study spanned April 1996 to March 2001. His findings were that Monday returns were not significantly lower than returns recorded in other days nor were the returns recorded on Fridays any significantly higher than other days. His results therefore indicated absence of the Monday effect at the NSE during the study period.

While studying the turn of the month effect on stock prices at the Nairobi Securities Exchange, Kamau (2003) sampled the counters forming the 20 share index and employed regression analysis. A two – tailed test was conducted to assess the significance of the regression coefficients. His study concluded that the turn of the month effect was absent at the NSE despite several studies in the developed markets exhibiting this trend. To explain these contradictory results, he alluded that the NSE consists mainly of long term investors who are driven by long term capital gains and dividends and very few speculative investors. He further attributed the results to the lack of incentive to investors since capital gains were not subject to taxation in Kenya.

Osman (2007) investigated the existence of the holiday effect on stocks trading at the Nairobi Securities exchange. While employing the descriptive study methodology, he studied the period between January 1998 and December 2006 factoring eight days event window consisting of four days before the holidays and four days after the holidays. The study employed regression and correlation analysis and was based on a sample of all

counters constituting the 20 share index. His study found no evidence of the holiday effect on stock returns for stocks trading at the NSE.

Oyuma (2009) conducted a study on the day of the week effect and the month of the year effect on the Kenyan Stock market. While concentrating on the period 1980 to 2006, he sampled counters constituting the 20 share index and employed descriptive study methodology. From the regression analysis, he found out that the NSE 20 share index returns are inversely related to the Monday returns but directly related to the Tuesday, Wednesday, Thursday and Friday returns.

Another local study was the one conducted by Mwinamo (2010) which sought to establish the existence of the day of the week effect on the stocks trading at the NSE. The study employed the descriptive study methodology with the population consisting of the 50 counters continuously listed at the NSE from 1st January 2005 to 31st December 2009. The study recorded a high volatility on stock returns at the NSE on Mondays and a low volatility on Thursdays which in effect means that the day of the week effect is existent.

While researching on the presence of the day effect on Security returns at the NSE, Kerubo (2011) sampled companies constituting the 20 share index and employed the use of quantitative research. She concentrated her research on closing and opening prices of stock prices between the years 2006 and 2010. Her study found evidence on the existence of the day of the week effect at the NSE with Friday recording the highest mean return than any other day of the week.

Across the Kenyan Boarder, Kipsang (2011) investigated the presence of the weekend effect on the stocks trading at the Ugandan Securities Exchange (USE). His data consisted of daily closing and opening stock prices from 1st September 2009 to 31st August 2010. No significant difference on returns at the different days was found at the USE. He concluded that the weekend effect does not exist at the USE.

2.6. Summary of Literature Review

The existence of the Monday effect presents contradictory evidence on the Efficient Market Hypothesis. While much has been undertaken in testing market efficiency in Kenya, the Monday effect has not been adequately proven Hence this study was to assist in establish whether the anomaly exists at the Nairobi Securities Exchange. From the various researches done on the Monday effect, different empirical results have come up both internationally and locally where different researches actually prove the existence of this anomaly for instance Lakonishok and Smidt (1988), Jaffe and Westerfield (1985) while others show that the day of the week effect did not exist, Coutts and Sheikh (2002), and Mokua (2003). In Kenya for instance Osman (2007) and Koech (2008) both found that day of the week effect did not exist at the NSE while Onyuma (2009) result showed that the day of the week effect exist at the NSE. Given the lapse of time since the last investigation on this phenomenon and the contradicting results that came out of the research, it is important to conduct a further study. This study therefore builds on works previously done by trying to clear the doubts on the existence of the Monday effect on stock returns at the Nairobi Securities Exchange.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction:

This chapter discusses the research design, the population of interest, the sample design, Data collection and Data Analysis.

3.2 Research Design

In research objectives were achieved by adopting a descriptive Survey Design. Basic descriptive statistics such as the mean, median, standard deviation, kurtosis and skewness was used as a preliminary analysis of the behaviour of stock prices during days of the week.

3.3 Target Population

The target population for this study was the 62 companies listed in Nairobi Securities Exchange as at 31 December 2013.

3.4 Sample Design

The sample population was the companies that constitute the 20 share index. These companies constitute about 80% of market capitalization and volume of trade at the Nairobi Securities Exchange. They therefore are a good representation of the population of interest. The study made use of the daily prices of these securities which were useful in computing the stock returns.

3.5 Data Collection

Data on daily closing share prices was collected from secondary sources. The secondary source in this case was the Nairobi Securities Exchange data vendors and the NSE data base. The data will span 5 years from January 2008 to December 2013.

3.6 Data Analysis

A review of prior studies reveals that earlier works on stock price behaviour made use of the closing price for return generating procedure with an implied assumption that trading is done at the closing price. This study was not be different on the idea and analyzed the returns for individual counters on a daily basis. The natural log of daily relative mean index value was used to measure daily returns as follows:-

$$R_t = \text{Ln}\left[\frac{P_1 - P_0}{P_0}\right] \quad \text{---------- (i)}$$

Where R_t is the return for day p,

P_1 is the closing price day p,

P_0 is the closing price day p_0_1

and L_n is the natural logarithm

The approach of logarithmic transformation of time series was first suggested by Osborne (1959). According to Lauterbach and Ungar (1995), the lognormal returns follow the normal distribution more closely than the arithmetic mean.

To test for the Monday effect on stock prices at the NSE the following regression equation was used.

$$Rt = \beta 1D1t + \beta 2D2t + \beta 3D3t + \beta 4D4t + \beta 5D5t + \varepsilon t$$ ---------- (ii)

Where R_t is the return day t calculated using equation (i) above,

D_{1t} is the dummy variable equal to 1 if t is a Monday and 0 otherwise,

D_{2t} is the dummy variable equal to 1 if t is a Tuesday and 0 otherwise,

D_{3t} is a dummy variable equal to 1 if t is a Wednesday and 0 otherwise,

D_{4t} is a dummy variable equal to 1 if t is a Thursday and 0 otherwise,

D_{5t} is a dummy variable equal to 1 if t is a Friday and 0 otherwise,

εt is the error term

The intercept, $\beta 1$..... $\beta 5$ represent the average deviation of each day from the Monday return. Therefore, if the daily returns are equal, it is expected that the dummy variable coefficients will be statistically close to zero. The coefficients of the regression are the mean returns obtained from Monday to Friday applying Ordinary least Squares (OLS) method.

Therefore, if the Nairobi Securities Exchange exhibits the Monday effect, the estimated coefficients will either be lesser than the returns of the other days of the week, negative or statistically significant. To test whether the Monday's average returns are statistically different from zero or not, a one sample t- test was used where the t- statistics was computed as follows:-

$$t = \frac{\dot{x} - \mu}{(\sigma/n^{1/2})}$$

Where: $\dot{x}$ is the average return for each day of the week from Monday to Friday

μ is the hypothetical mean equal to zero

σ is the standard deviation of each day's returns

n is no of observations of each week day

the denominator term is the standard error

To test whether the average daily returns between Monday and other days of the week is statistically significant, then a two sample t-test was done and computed as follows:

$$t = \frac{\dot{x}1 - \dot{x}2}{\sqrt{\frac{SD1\text{^}2}{n1} + \frac{SD2\text{^}2}{n2}}}$$

Where: $\dot{x}1$ is the average Monday return

$\dot{x}2$ is the average other day return

SD1^2 is the standard deviation of returns on Monday

SD2^2 is the standard deviation of stock returns on other days

N1 is the sample size on Monday

N2 is the sample size any other day.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSIONS

4.1. Introduction

This chapter outlines the analysis of the data and gives illustrations of the findings. The findings are given in graphs and tables.

4.2 Descriptive Statistics

To provide a preliminary analysis, data was analyzed using basic descriptive statistics namely minimum, maximum, mean, median, standard deviation, Kurtosis and Skewness. Monday recorded the lowest minimum return at -10.496 while Wednesday recorded the highest minimum return at -3.3204. Thursday returned the least Maximum return at 3.737823 while Monday returned the highest maximum return at 11.11446. The daily mean returns were -0.030424, -0.115782, -0.007779, 0.025645 and -0.047813 for Monday, Tuesday, Wednesday, Thursday and Friday respectively. Below is a summary of the different descriptive statistics through the days of the week.

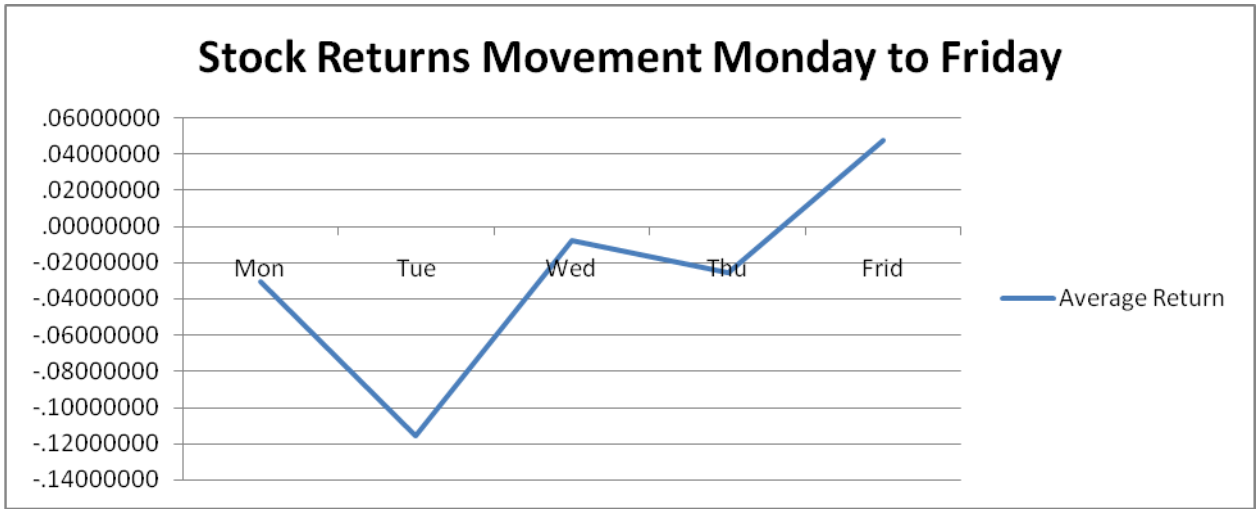
Table 4.1: Descriptive Statistics

	Minimum	Maximum	Mean	Std. Deviation	Variance	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Mon	-10.496604	11.114467	-.03042480	1.220113567	1.489	.680	.142	41.755	.283
Tue	-6.715358	5.203920	-.11578291	1.097150086	1.204	-.424	.140	9.344	.278
Wed	-3.320455	6.836645	-.00777945	.899114229	.808	1.243	.140	11.911	.279
Thu	-9.705957	3.737823	-.02564507	.985296693	.971	-3.227	.139	31.657	.277
Frid	-8.550052	5.012864	.04781344	.988429286	.977	-1.340	.142	24.102	.282

Source: Research Data

From the above analysis, Friday recorded the highest mean return at 0.047813 which falls to -0.03042480 on Monday. The fall progresses further to -0.11578 on Tuesday before the market regains consciousness on Wednesday. Graph 4.1 below shows the movement of the mean return from Monday through to Friday.

Graph 4.1: Movement of the Mean Stock returns through the days of the week.



Source: Research Data

From the above illustration, Tuesday recorded the lowest stock market returns while Friday recorded the highest returns. The mean returns for all the days apart from Friday are negative.

The mean returns for Tuesday, Thursday and Friday returned negative skewness implying left skewness. Monday and Wednesday returned positive skewness with Wednesday being the highest at 1.204.

The stock returns displayed positive Kurtosis greater than 3 for all days. Monday had the highest Kurtosis at 41.75 while Tuesday had the lowest at 9.344. The high Kurtosis is an indication of distinct peak near the mean and rapid decline. The above results indicate

that the returns are not normally distributed, a result in line with previous studies including the study by Poshakwale (1996).

4.3 Data Analysis and Findings

By sampling the counters forming the NSE 20 Share index, daily closing prices were used to compute the daily stock returns. The natural logarithm was used to compute the daily stock returns. A number of counters were not actively trading in some days in which case an assumption was made that the counter would be trading at the preceding trading day's price. The returns so obtained were used to compute the average return for each day of the week which were compared to make deductions on the behaviour of stock prices in the different days of the week.

The researcher conducted a multiple regression analysis using ordinary least squares (OLS) method so as to determine the relationship between the share price returns and the five days of the week. The regression was based on use of dummy variables to represent the day of the week. SPSS was used to determine the coefficients of the regression model. Table 4.2 below shows the results of the regression.

Table 4.2. Coefficients of the Regression

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
	(Constant)	-.026	.060		-.431	.667
	DMon	-.005	.085	-.002	-.056	.955
	DTue	-.090	.084	-.035	-1.069	.285
	DWed	.018	.084	.007	.212	.832
	DFri	.073	.085	.028	.865	.387

Table 4.2. Coefficients of the Regression

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
	(Constant)	-.026	.060		-.431	.667
	DMon	-.005	.085	-.002	-.056	.955
	DTue	-.090	.084	-.035	-1.069	.285
	DWed	.018	.084	.007	.212	.832
	DFri	.073	.085	.028	.865	.387

Source: Research Data

From the above table, the regression equation can be re-written as follows.

$$Rt = \beta 1D1t + \beta 2D2t + \beta 3D3t + \beta 4D4t + \beta 5D5t + \varepsilon t$$

$R_t = -0.026 + -0.005D_{mon} + -0.090D_{Tue} + 0.018D_{Wed} + 0.073D_{Fri}$

Where R_t is the average daily return,

D_{mon} is the dummy variable equal to 1 if the day is on a Monday, 0 otherwise,

D_{Tue} is the dummy variable equal to 1 if the day is on a Tuesday, 0 otherwise,

D_{Wed} is the dummy variable equal to 1 if the day is a Wednesday, 0 otherwise, and

D_{Fri} is the dummy variable equal to 1 if the day is a Thursday, 0 otherwise.

The dummy variable D_{Thu} taking value of 1 if the day is a Thursday was excluded from the Model since the same was found not to determine the daily return.

From the model above, taking all factors (Monday, Tuesday, Wednesday, Thursday and Friday) constant at Zero, the stock returns at the NSE would be – 0.026. Further, holding all other factors constant, a unit increase in Monday's operations at the NSE would lead

to a 0.5% decline in stock returns, while a unit increase on a Tuesday would lead to 9% decline in the stock returns. A unit change in operations on Wednesday would lead to an 18% increase in stock returns, a unit change in Thursday operations would have no effect on the stock returns while a unit change in Friday's market operations would lead to whooping 73% increase in stock returns.

The coefficient of determination is a measure of how well a statistical model is likely to predict future outcomes. In this particular study, the R^2 was 0.003 way below the expected 0.80 for a good model. This implies that only 0.3% of the average daily return is explained by the day of the week. Table 4.3 below gives the different measures of goodness of fit obtained during the regression.

Table 4.3: Measures of goodness of fit

				Change Statistics				
R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
0.051	0.003	(0.00)	1.04	0.00	0.96	4.00	1,500	0.43

Source: Research Data

A test of statistical significance for the average returns at 5% significance level returned the results detailed in table 4.4 below.

Table 4.4: Test of Significance

Day	Monday	Tuesday	Wed	Thursday	Friday
Mean	-0.030424	-0.115782	-0.007779	-0.025645	0.0478134
Standard Deviation	1.2201135	1.0971500	0.8991142	0.9852966	0.9884293
No of observations(n)	294	305	303	307	296
Test Statistic	0.0019103	0.0070741	0.000471	0.0015508	-0.002948
T- Critical	1.969	1.968	1.968	1.968	1.969

Source: Research Data

From the results obtained, it is clear test statistics obtained all fall within the accept region of a two sided tests. The mean returns are therefore statistically significant.

Further, a two sample t - test was conducted to establish if the average daily returns between Monday and other days of the week is statistically significant. The results of the test were as detailed in table 4.5 below.

Table 4.5: Two sample test of significance

	Monday	Tuesday	Wed	Thursday	Friday
Mean difference		0.0853581	-0.022645	-0.004780	-0.078238
Standard Error	0.0041500	0.0035972	0.0029674	0.0032094	0.0033393
Test Statistic		0.96977	-0.268422	-0.055716	-0.904060
T -Critical	1.969	1.968	1.968	1.968	1.969

Source: Research Data

This test results show that the daily returns between Monday and other days of the week are statistically significant. It is therefore imperative that the Monday's returns are significantly different from other days of the week.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1. Introduction

This chapter provides the study summary and the conclusions from the study. It also provides the limitations for the study and recommendations for further research.

5.2 Summary and Conclusions

The study aimed at establishing if the Monday effect is present at the Nairobi Securities Exchange. The test results provide a confirmation that the daily stock returns fall after Friday with negative returns recorded on Mondays. However, the results indicate that as opposed to the Monday effect theory, the lowest mean returns are recorded on Tuesdays and not Mondays. During the period under study, the market recorded a downward trend in market returns between Monday and Tuesday with a reversal on Wednesdays. Fridays recorded the highest Market returns.

The implication of this is that indeed there exists a day of the week effect in the stock market with Friday recording the highest returns. Going by these results, the best day to buy a stock would be a Tuesday with the same being disposed on a Friday.

The study results also confirm that all of the differences between the mean returns of each trading day are significantly different from zero, which is supportive of the day of the week effect.

The focus of the study was the existence of the Monday effect on stock returns for all stocks trading at the NSE. As such, a two paired test of significance was conducted on the stock returns. The findings showed that indeed, the Monday return was significantly different from all other days of the week. A replication of this test for all the other days of the week would give similar results where the stock returns for each day would be significantly different from the returns of all other days' return. In effect, this gives strength to the results obtained above by affirming the existence of particular patterns in stock returns at the NSE.

5.3 Recommendations

The scope of this study was limited to 5 years ending in December 2013. Future studies should include an expanse period say 10 years to ascertain if the results reported in this study would hold for a longer period.

A future study focussing on establishing the Monday effect on the different market sectors would assist in ascertaining if this anomaly is the same for all the sectors. This would therefore assist in the generalization of the results obtained herewith.

The study focussed on the Monday effect on the Stock prices. A future research focussing on the Bond Market would be helpful in forming and opinion on the generalization of the results of this study to the entire market and not only on the stock prices.

5.4 Limitations of the Study.

There were several challenges encountered during the study. Key among this is the limitation by the data collected. It was noted that in a number of days, several counters remained closed and therefore returned no prices. An assumption was made that the

previous day prices for the particular stocks still prevailed. This assumption in itself may not be valid.

The scope of this research was for the five years ending and including year 2013. The strength of any research depends on the spread of data. It is therefore not certain that these results would hold if a longer period would be researched upon. It is also not possible to tell if the results would hold past the year 2013.

The researcher restricted his study to the Nairobi Securities Exchange (NSE), which is a developing stock market. Each market has its unique characteristics and as such, it is not possible to generalize the results to the global context.

This researcher focussed on the entire market. However, it is possible that different market segments are affected differently by the market seasonality in question; a possibility that this study ignores owing to its limited scope.

REFERENCES

Bachelier, L. (1964). Theory of speculation. In Paul Cootner (ed.), The random character of stock market prices. *Cambridge, MA*: *MIT Press*,17 – 75

Basu, S. (1997). Investment performance of common stock in relation to their price earning ratio: A test of the efficient market hypothesis, Journal of Finance, 32, 663 -682

Banz, R. (1981). The relationship between return and market value of common stock, Journal of *Financial Economics*, 9, 3 - 18

Bhardwaj, R. & Brooks, L. (1992). The January Anomaly; effect of low share prices, transaction costs and bid-ask bias, *Journal of Finance*, 47,535-575

Cadsby, B. & Ratner, M. (1992). Turn of the month and pre-holiday effects on stock returns; some international evidence, *Journal of Banking and Finance*, 16(3), 497-509

Campbell, J.Y. & Shiller, R. J. (1988). Co-intergration and tests of persent value models, *Journal of Political Economy*, 95, 1065- 1088

Choy, A. & O'Hanlon, J. (1989). Day of the week effects in the UK equity markets: A cross sectional analysis. *Journal of Business Finance and Accounting*, 16, 89 – 104

Collins J. (1957) How to study the Behaviour of stocks ; *The Analyst Journal* 13 (2): 109 -113

Coursey D & Dyl E (1986). Price Effects of Trading interruptions in an experimental Market, *unpublished Working Paper*, University of Wyoming.

Dubois, M. & Louvet, P. (1996). The day of the week effect: The international evidence. Journal of Banking and Finance, 43, 431 – 450.

Dupernex, S. & Sophister, S. (2007). Why might share price follow random walk? *Student Economic Review,* 21, 167 – 179

Fama, E.F. (1965). Behaviour of stock market prices. Journal of Business, 38, 34 – 105.

Fama, E.F. (1965). Efficient capital markets: A review of theoretical and empirical work. *Journal of Business*, 1, 34 – 105.

Fama, E.F. (1965). Random Walks in stock markets prices. *Journal of Business*, 16, 1-25

Fama, E.F. (1970). Efficient capital markets: A review of theory and empirical work. *Journal of Finance*, 25, 383 – 417.

Fama, E.F. (1998). Market efficiency, long-term returns and behavioural finance. *Journal*

of Financial Economics, 49 (3), 283 - 306

French, K. (1980). Stock returns and the weekend effect. *Journal of Financial Economics*, 8, 55 – 69

Galai , D. & Kedar,L.H. (2005). Day of the week effect, financial market institution and instruments. *Journal of Finance*, 14(3), 169-186

Gultekin, N. B. & Gultekin, M. N (1983). Stock market return and inflation: Evidence from other countries, Journal of Fiance, 38(1), 49-65.

Jaffe, J. & Westerfield, R. (1985). The weekend effect in common stock returns: The international evidence. *Journal of Finance*, 40, 433 – 454.

Kamau, S. (2003). Turn of the month effect on stock prices at the NSE. *Unpublished MBA Project*, University of Nairobi.

Keim, D. & Stambaugh, F. (1984). A further investigation of weekend effect in stock returns. *Journal of Finance*, 39, 819 – 840.

Kerubo, E. (2011). An investigation on the day of the week effect in the Nairobi Securities Exchange. *Unpublished MBA Project*, University of Nairobi.

Kipsang, E. (2011). A test of the weekend effect at the Ugandan Securities Exchange. *Unpublished MBA Project*, University of Nairobi.

Koech, A. (2008). Weekend effect at the NSE. *Unpublished MBA Project*. University of Nairobi.

Kosgei, M. (2008). Existence of the weekend effect at the Nairobi Securities Exchange. *Unpublished MBA Project*, University of Nairobi.

Kunkel, R.A & Compton, W.S (1998). A tax- free exploitation of the turn of the month effect, Financial Service Review, 7(1); 11-23

Lakonishok, J. & Smidt, S. (1988). Are seasonal anomalies real? A ninety year perspective. Review of Financial Studies 1 (4), 403 – 425

Lanterback, B. & Ungar, M. (1995). Real versus nominal stock returns seasonalities: Empirical evidence. *International Review of Economies and Finance*, 40, 231 – 243.

Lo, A.W. & MacKinley. A.C. (1999). A Non-Random Walk Down Wall Street. Princeton: *Princeton University Press*.

Maxwell, W. (1998). An evaluation of contingent claims analysis as applied in the credit

risk modelling. *Working papers*, George Washington University.

Mokua, C. (2003). Weekend effect on the stocks at the NSE. *Unpublished MBA project*, University of Nairobi.

Mwinamo, K. (2010). Day of the week effect on stock market volatility: Evidence from the Nairobi Securities Exchange. *Unpublished MBA Project*, University of Nairobi.

Nageswari, P., Selvam. M. & Gayathri, J. (2011). Analysis of Monday effect in India stock market. *Journal of Business Management*, 5(4), 170 – 177.

Onyuma, S. O. (2009). The day of the week effect: Evidence from Nairobi Securities Exchange. *Unpublished MBA Project*, University of Nairobi.

Osman, A. M (2007). Study of the holiday effect at the NSE. *Unpublished MBA Project* University of Nairobi.

Osborne, A. (1959). MFM, Brownian motions in stock market. *Operations Research*, 10, 345 – 379.

Peiro, A. (1994). Daily seasonality in stock returns further international evidence. *Economics letter*, 45, 227 – 232.

Poshakwale,S. (1996). Evidence on weak form efficiency and day of the week effect in India Stock Exchange, Journal of Finance, 3, 605 – 616.

Reiganum, R. M. (1981). Mis-speculation of the capital asset pricing, empirical anomalies based on the earnings, yield and market values, *Journal of Financial Economics*, 12, 89 - 104

Rogalski, R. (1984). New findings regarding day of the week returns over trading and non trading periods: A note. *Journal of Finance*, 35: 1603 – 1614.

Rogalski, R. J. (1984). A further investigation of the weekend effect in stock returns: Discussion, The Journal of Finance, 39 (3), 835 – 837.

Rozeff, M.S. and Kimney, W. R (1976).Capital market seasonality; The case of stock returns. *Journal of Financial Economics,* 3, 379-402

Sharma, S. N. (2004). Stock market seasonality in an emerging market. *Vikalpa,* 29(3), 35 - 41

Shleifer, A. (2000). Inefficient Markets: An Introduction to Behavioural Finance. *Oxford: Oxford University Press*

Ziemba, W.T. (1991). Japanesse security market regularities; Monthly, turn of the month and year, holiday and golden week effect. *Journal of Finance* 3, 1 - 119

APPENDICES

Appendix 1: Companies Listed at the Nairobi Securities Exchange.

AGRICULTURAL
Eaagads Ltd
Kakuzi Ltd
Kapchorua Tea Co. Ltd
The Limuru Tea Co. Ltd
Rea Vipingo Plantations Ltd
Sasini Ltd
Williamson Tea Kenya Ltd
AUTOMOBILES & ACCESSORIES
Car & General (K) Ltd
CMC Holdings Ltd
Marshalls (E.A.) Ltd
Sameer Africa Ltd
BANKING
Barclays Bank of Kenya Ltd
CFC Stanbic of Kenya Holdings Ltd
Diamond Trust Bank Kenya Ltd
Equity Bank Ltd

Housing Finance Co.Kenya Ltd

I&M Holdings Ltd

Kenya Commercial Bank Ltd

National Bank of Kenya Ltd

NIC Bank Ltd

Standard Chartered Bank Kenya Ltd

The Co-operative Bank of Kenya Ltd

COMMERCIAL AND SERVICES

Express Kenya Ltd

Hutchings Biemer Ltd

Kenya Airways Ltd

Longhorn Kenya Ltd

Nation Media Group Ltd

Scangroup Ltd

Standard Group Ltd

TPS Eastern Africa Ltd

Uchumi Supermarket Ltd

CONSTRUCTION & ALLIED

ARM Cement Ltd

Bamburi Cement Ltd

Crown Paints Kenya Ltd

E.A.Cables Ltd

E.A.Portland Cement Co. Ltd

ENERGY & PETROLEUM

KenGen Co. Ltd

KenolKobil Ltd

Kenya Power & Lighting Co Ltd

Total Kenya Ltd

Umeme Ltd

INSURANCE

British-American Investments Co.(Kenya) Ltd

CIC Insurance Group Ltd

Jubilee Holdings Ltd

Kenya Re Insurance Corporation Ltd

Liberty Kenya Holdings Ltd

Pan Africa Insurance Holdings Ltd

INVESTMENT

Centum Investment Co Ltd

Olympia Capital Holdings Ltd

Trans-Century Ltd

MANUFACTURING & ALLIED

A.Baumann & Co Ltd

B.O.C Kenya Ltd

British American Tobacco Kenya Ltd

Carbacid Investments Ltd

East African Breweries Ltd

Eveready East Africa Ltd

Kenya Orchards Ltd

Mumias Sugar Co. Ltd

Unga Group Ltd

TELECOMMUNICATION & TECHNOLOGY

AccessKenya Group Ltd

Safaricom Ltd

GROWTH ENTERPRISE MARKET SEGMENT (GEMS)

Home Afrika Ltd

Source: NSE 2013

Appendix 2: Average Daily Stock Returns

Monday	Tuesday	Wednesday	Thursday	Friday
4.021831	4.929460	(0.780520)	(0.570502)	(3.080080)
(2.401681)	(1.572376)	1.905307	(0.032196)	(0.009043)
(3.129701)	(0.828459)	1.101327	(1.742911)	(0.375764)
(1.128552)	(5.088010)	3.304464	(4.223558)	1.341343
2.455921	(1.397888)	(0.934326)	0.590526	0.790220
(0.674451)	1.760982	1.508571	(0.026861)	0.214114
0.223128	(0.303144)	0.410814	0.716673	(0.249274)
1.173626	(1.016285)	(0.812630)	(0.493969)	0.115660
(0.449370)	1.961095	1.365480	(0.636679)	5.012864
(1.332240)	(1.685021)	(0.800392)	0.292403	(1.227796)
0.046078	(1.808478)	0.289744	(1.043518)	(2.357743)
0.629980	(0.237643)	(0.741117)	1.920096	0.149846
0.870254	(0.086962)	0.035689	(0.460966)	0.813462
0.253236	0.818666	0.060209	1.280160	(0.062658)
1.287025	0.898843	(0.060313)	0.318403	1.021641
(0.052681)	(0.375861)	(0.136564)	0.725485	0.168745
(0.121203)	0.482539	1.555527	1.228004	0.101079
(0.298585)	0.636188	0.761195	(0.805279)	(0.697634)
(0.545500)	(1.063316)	(0.582299)	(0.532242)	(0.070864)
(0.156917)	0.332058	(0.335992)	0.051325	(0.203230)
0.288647	0.084743	0.194123	0.019153	1.854387
(0.821446)	1.067059	2.008358	1.642586	1.278652
0.695512	(2.234742)	(0.272249)	0.867531	0.095897
(0.311678)	(0.258000)	0.151195	(0.240345)	(0.295151)
(0.178780)	(0.521728)	(0.667504)	(0.597984)	(0.448143)
(0.199780)	0.046088	(0.332755)	(0.261029)	(0.595111)
(1.971539)	(1.263957)	(0.020172)	0.230336	0.517486
0.623343	(0.501849)	0.144848	0.019371	(0.639686)
(0.586229)	(0.123013)	(0.312310)	(0.339439)	(0.080759)
1.098268	(0.888564)	(1.485352)	(1.193527)	(0.530048)
(0.305247)	(2.079900)	(1.309826)	(0.405945)	(0.322008)
(0.478612)	(1.313204)	(0.457281)	0.934687	1.829157
(0.276361)	0.800584	(0.026359)	(0.246818)	(0.128826)
(1.569520)	(0.854840)	(0.498987)	(0.624446)	(0.198244)
2.492591	0.276433	(0.863190)	(0.799617)	(0.467182)
0.262452	(0.772784)	(1.198718)	(1.840707)	(1.322702)
(0.321372)	(3.320192)	(2.268189)	1.192774	4.373797
(1.703996)	0.165030	(1.080819)	(0.672310)	(0.242607)

(2.334917)	(1.858975)	(2.649236)	(0.055587)	(0.205541)
Monday	**Tuesday**	**Wednesday**	**Thursday**	**Friday**
11.114467	(1.768555)	(0.094845)	(2.451853)	(1.251421)
(1.597416)	(0.569375)	(1.817639)	(0.492212)	(2.485202)
(0.613371)	(2.195383)	(2.369139)	(2.815891)	-
(0.455105)	(3.383866)	6.836645	2.199443	(2.884459)
(1.066868)	5.203920	(3.320455)	(0.496400)	(0.810989)
1.072370	(1.204947)	(0.844435)	(0.721197)	(0.201000)
1.077809	(0.135416)	(0.868061)	(1.068971)	(1.707453)
0.519507	(1.277044)	(0.945838)	(0.339487)	0.114205
(0.026215)	(3.635894)	0.215691	1.271882	(0.448262)
0.732218	0.076214	0.876113	0.408994	1.581117
(0.016690)	0.756605	0.270323	(1.469015)	(0.677275)
(0.952462)	0.354786	1.672265	(0.259646)	(0.660415)
0.197800	1.568499	(0.626313)	(0.638294)	(0.538691)
(1.206147)	0.333303	(0.789513)	(0.237734)	(2.147931)
(0.533876)	(0.725738)	(1.263653)	(1.018019)	(0.864933)
(1.017344)	(1.594530)	0.449463	(0.179536)	(0.132568)
(1.255735)	(0.427561)	(1.994819)	-	(1.557823)
(1.782524)	(3.042308)	(1.000590)	(2.738950)	(0.976561)
(0.633686)	(0.822607)	(2.631885)	0.188020	0.592147
3.744049	(0.812563)	(1.136135)	2.866775	4.979677
(0.201052)	(1.139069)	(1.247771)	(0.701866)	(0.912071)
1.798010	(1.390547)	0.481697	(9.705957)	1.490033
1.899667	(0.038529)	(0.948509)	0.185421	(0.486996)
0.318982	0.791401	(0.196169)	(1.172146)	0.160059
1.169724	(0.921811)	0.333629	(1.123520)	0.786966
0.060520	1.748240	(0.651191)	0.921770	(0.702328)
0.722213	(0.735759)	(0.166277)	(0.476554)	0.611248
(0.199871)	(1.436302)	0.439971	0.331094	0.006411
(0.232255)	0.013869	(0.162632)	(0.348710)	0.045281
0.400358	(0.072131)	(0.136729)	0.056311	(0.365612)
0.704293	0.745719	0.543455	(0.045579)	1.227144
2.248729	(0.362799)	0.037188	1.112471	2.759464
0.369731	0.460710	(0.195028)	0.214170	0.519596
(0.652691)	(0.112005)	1.143473	3.737823	0.574080
(0.316433)	0.196920	0.191349	0.097662	(0.552903)
0.591916	0.574631	1.195114	1.723731	0.541907
(0.280027)	1.486435	(2.459044)	(0.604157)	(0.165554)
(0.308916)	(0.539887)	0.008408	1.527406	0.461845
0.189625	0.488301	(0.953950)	0.312894	0.571909

(0.794085)	0.007681	(0.957957)	0.071376	0.186245
Monday	**Tuesday**	**Wednesday**	**Thursday**	**Friday**
(0.558141)	(1.148698)	0.172460	0.431809	(0.273954)
0.409110	(0.074456)	(0.770905)	0.119920	(0.298609)
(0.388809)	(0.868406)	0.081501	(1.269245)	(0.000874)
(0.049295)	(0.875913)	(0.037965)	(0.503988)	0.188978
(0.738313)	0.060630	(0.153386)	0.391318	(0.698224)
(0.505577)	0.020680	(1.308600)	(0.724240)	0.237388
(0.445428)	0.720281	1.545241	(0.510911)	0.469715
0.359802	(1.537160)	(0.165069)	(0.070115)	(0.000374)
0.371869	(0.154327)	(0.301648)	0.625766	0.761235
(0.017397)	(0.125784)	0.129493	(0.025675)	(0.094548)
(0.409418)	(0.286979)	(0.318501)	0.841389	0.573094
0.133683	(0.020772)	(1.161794)	0.802096	0.359553
0.387597	0.389121	(0.203381)	0.640793	0.083338
(0.259413)	(0.465542)	(0.130020)	(0.048353)	1.080303
0.065469	(0.130573)	0.212013	0.708455	0.114104
(0.152167)	0.006549	(0.103631)	(0.019408)	0.441898
(0.325838)	0.028716	0.427470	0.291318	(0.904844)
0.056956	0.079738	(0.627394)	(0.117027)	0.245836
0.421873	(0.411717)	1.036691	(0.352150)	0.637217
1.383595	0.169365	(0.069974)	0.378358	1.872664
1.552815	0.532701	0.029517	0.659095	0.003879
(0.586682)	0.488013	0.330754	0.451641	(0.199240)
0.391395	0.724973	(0.319225)	0.525305	0.421857
(0.128773)	(0.211975)	(0.095289)	1.649179	0.428767
(0.166159)	(0.150786)	0.341136	(0.315252)	0.487055
0.238410	1.810550	0.769168	(0.736747)	0.058201
(0.230969)	0.128333	0.810752	0.045471	0.847001
0.974670	(0.059146)	(0.368077)	(0.381189)	1.209524
1.188992	0.282941	0.152701	0.499242	(1.350595)
0.901813	(0.824064)	(0.005850)	(0.213074)	0.303607
(0.629113)	0.942577	(1.461511)	0.290708	0.089036
0.208557	1.002373	1.073898	1.646190	0.368326
(0.462969)	1.790645	0.200743	(1.364823)	1.061376
1.229593	0.866553	2.318498	0.621706	(0.884934)
(0.380119)	0.508510	(0.813800)	(0.031351)	0.161076
(0.945910)	0.689870	0.180582	(0.152993)	0.881474
(0.075172)	0.046772	0.090685	0.625865	0.199554
0.110146	(0.119584)	(0.068503)	0.799973	0.420460
0.489100	0.348541	0.336751	(0.232346)	0.184288

0.172680	0.269376	0.925914	0.638250	0.284198
Monday	**Tuesday**	**Wednesday**	**Thursday**	**Friday**
0.580440	(0.276469)	(0.211052)	0.221524	(0.346475)
(0.647057)	(0.278940)	0.900250	0.010574	(0.471478)
0.657926	0.323551	0.383592	(1.389936)	0.269020
(0.018184)	0.009389	0.147445	0.522763	(0.302186)
0.339293	(0.077308)	(1.347658)	0.346469	0.635428
(0.919271)	0.200100	(0.700106)	0.109908	(0.367477)
(0.090301)	(0.272250)	0.021998	0.771182	0.911183
1.258386	(0.015536)	0.352366	(0.607214)	0.146506
(0.170185)	(0.334346)	0.109051	0.394188	(1.089657)
0.824023	(0.282101)	0.488731	0.343206	(0.134567)
(0.184144)	0.294550	(0.116765)	0.366948	(0.657532)
(0.742855)	(0.018895)	0.442980	1.374995	0.644242
(0.223622)	2.083737	(0.353988)	1.686146	0.189563
0.391087	(0.872159)	0.301398	(0.213622)	(0.450449)
0.725728	0.924168	(1.560017)	(0.032648)	0.124417
0.189684	(0.519613)	0.658479	(0.710110)	(0.065583)
(0.307395)	(0.483605)	(0.508018)	0.455067	0.378933
(0.243752)	(0.068961)	(0.177837)	0.334096	0.260210
0.112237	0.928289	0.403238	(0.134530)	0.425363
(0.364223)	(0.067247)	0.033160	(0.259210)	0.406129
0.228555	0.457264	0.735826	(0.299795)	0.206696
0.413684	(0.040401)	0.709773	(0.282101)	0.516692
(0.434846)	0.681554	0.321887	(0.118557)	(1.396138)
(10.496604)	0.435491	(0.694122)	0.287642	(0.077483)
(0.771674)	0.325173	(1.136767)	(0.035820)	(0.153080)
(0.223168)	0.206782	(0.829405)	(0.341664)	(0.988499)
0.899845	(0.847592)	(0.035707)	(0.782689)	0.562148
(0.050711)	(0.613936)	(0.044588)	0.322978	0.814160
1.412652	(0.006286)	(0.618444)	(0.530276)	0.620932
(0.238184)	(1.258717)	0.020818	(0.040841)	(0.205838)
(0.181569)	0.112769	0.193499	0.114675	0.116574
(0.663928)	0.076184	0.009583	(0.328265)	(0.722477)
(0.684672)	(0.805766)	0.140094	0.046466	0.085891
0.034364	(0.250709)	1.026808	0.018272	0.200483
(0.045798)	(0.156694)	1.003082	1.332917	(0.280440)
(0.478374)	(0.816543)	(0.738983)	0.223207	0.074330
(0.675833)	(0.130808)	0.293028	(0.330776)	(0.387681)
(0.730478)	(0.095270)	0.392150	0.220028	0.317079
1.420969	(0.799452)	(0.687546)	(0.245875)	(0.226402)

(2.658137)	(0.144701)	0.637915	(0.504571)	0.275721
Monday	**Tuesday**	**Wednesday**	**Thursday**	**Friday**
0.291975	(0.257000)	(0.410588)	(0.263219)	0.957493
0.963240	0.248804	0.004830	0.021778	0.261197
0.414373	(1.047259)	(0.460530)	(0.081793)	0.591229
0.308233	(1.117688)	(1.430503)	(2.702526)	0.567026
0.009457	0.990282	(0.223412)	(0.465447)	0.103825
(0.442045)	(0.953433)	(0.523153)	(0.111875)	(0.178460)
0.280984	(0.497854)	(0.024613)	0.259038	0.086216
(0.209778)	0.849438	0.321070	(0.436601)	0.523513
0.047515	(0.245257)	(0.680774)	0.472094	(0.130713)
(0.986169)	(0.338051)	(0.208931)	0.253532	(0.483761)
(0.025502)	(0.059180)	0.311724	(0.780339)	(0.135633)
(0.421128)	0.133340	0.132828	(0.078066)	(0.020068)
0.011905	(0.734957)	0.154825	(0.484051)	(0.378125)
(0.444669)	0.431720	(0.145516)	(0.231679)	(0.526087)
(1.249872)	1.059858	0.518821	(0.095133)	1.071057
(0.261102)	(6.715358)	0.189861	0.329341	0.512579
0.087849	0.100353	(0.786567)	(0.182104)	(0.069064)
(2.093008)	(0.978550)	(1.117497)	0.150999	(0.490697)
(0.548265)	0.381105	0.716971	0.116212	(0.232944)
(0.749832)	(0.459512)	(0.556697)	(0.078103)	0.167485
(0.482454)	(0.790354)	(1.055472)	(0.520581)	0.431251
(1.106865)	(1.389399)	(0.037249)	0.077878	(0.039124)
0.231381	1.242509	0.062040	(0.530053)	(0.133002)
(0.479493)	(0.336419)	(0.052444)	(0.997769)	1.029923
(1.007614)	(0.076609)	(0.135122)	(0.115253)	(0.560655)
0.068128	(3.284796)	0.341368	0.041328	(0.509933)
0.720080	0.022265	(1.048667)	0.823533	(0.288614)
0.487079	0.074160	0.087637	(1.092887)	(0.526592)
0.059057	0.819015	0.329231	(1.765178)	0.145794
1.520599	(0.137259)	(1.143250)	1.163054	2.032609
(1.296774)	0.875626	(1.369673)	0.528180	0.399201
(1.062756)	(0.361287)	(0.324372)	(0.161374)	(0.846245)
(0.132137)	(0.443057)	0.240434	(0.774933)	(0.592304)
(0.480459)	(0.058291)	0.004735	0.117006	(1.134616)
(1.084207)	0.135908	0.612667	(0.492466)	(0.803652)
(0.735516)	0.423877	0.253062	-	0.445812
(0.350957)	0.133709	0.042483	1.573171	(0.127706)
0.102762	0.738765	(0.532410)	(1.113344)	(0.136173)
(0.182951)	(0.288436)	(0.235903)	(0.166288)	0.979315

0.779519	(0.429625)	(1.288383)	0.408690	0.076298
Monday	**Tuesday**	**Wednesday**	**Thursday**	**Friday**
(0.763544)	(0.475638)	0.402208	(0.970222)	(0.411679)
0.049443	(1.629445)	0.391051	(0.810082)	(0.615898)
0.006627	0.043109	0.514801	0.693785	0.309109
0.302511	(0.194405)	0.312169	(0.349915)	(0.576753)
0.159712	0.159924	(0.111747)	0.545475	0.206404
(0.278338)	0.886510	0.891271	(0.426593)	0.487258
(0.346031)	0.347836	(0.034477)	0.559405	1.188556
(0.223747)	(0.755735)	0.130112	(0.055264)	0.528748
0.063082	0.091201	(0.589083)	(0.155602)	(0.256755)
(0.444584)	0.438155	(0.107499)	(0.045144)	0.203297
0.721076	0.120657	0.578771	0.413317	0.326967
0.264456	(0.289853)	0.349037	(0.439563)	0.259858
(0.580391)	(0.848295)	0.880572	0.031455	0.376880
0.661271	0.287045	0.684901	0.169308	0.574581
(0.072251)	0.533359	(0.927590)	0.590923	(0.568769)
0.122805	0.301137	0.120042	0.003422	0.681941
(0.078887)	(1.375993)	0.569372	(0.264735)	0.262657
0.365570	(1.019562)	0.386245	(0.017387)	0.415716
(0.327090)	0.273261	0.581880	(0.287443)	(0.458914)
0.082900	0.575623	0.531268	(0.396138)	(0.098772)
1.241833	(0.085558)	(0.128732)	0.249522	0.248849
0.233264	0.412563	(0.242161)	1.601206	0.152610
0.188579	0.499692	(0.388352)	(0.706098)	(0.109386)
0.238615	(0.009388)	0.441012	1.243749	(0.121615)
(0.402403)	0.146234	0.128212	0.015796	(0.225523)
(0.400690)	(1.173977)	(0.194483)	0.576832	0.237380
(1.154119)	(0.127696)	0.094850	(0.285338)	(0.079306)
0.165123	(0.670299)	0.110198	0.600723	0.483000
(0.566052)	0.521467	0.652669	0.435689	0.289770
(0.680420)	0.062533	0.164901	0.262327	0.196859
(0.092346)	0.179109	0.177719	(0.479411)	0.505163
0.351063	0.373547	0.399845	(0.357747)	(0.296976)
(0.156247)	(0.245372)	(0.019177)	0.189172	0.394605
(0.061935)	(0.379062)	1.083394	0.172635	(0.042297)
0.049595	0.009427	(0.127629)	1.025581	(0.257197)
0.508515	(0.811099)	0.143612	(0.120508)	(0.171625)
0.161912	(0.365664)	(0.071729)	(0.075415)	0.459495
(0.220592)	0.213782	0.234013	0.256854	0.166405
0.046079	(0.007737)	0.902447	0.319925	0.307005

0.073361	0.122833	(0.029704)	(0.055778)	0.291578
Monday	**Tuesday**	**Wednesday**	**Thursday**	**Friday**
0.124127	1.016342	0.664493	(0.064498)	(0.015504)
(0.419125)	1.194398	0.169303	(0.367543)	0.637105
(0.382534)	0.314193	0.162033	(0.111237)	0.054625
0.079477	0.595015	0.519712	(0.713114)	0.198863
0.134740	(0.507080)	(0.184256)	0.804214	(0.722021)
(0.143023)	0.201417	0.539639	(0.075186)	0.294249
0.130931	0.054352	0.414519	0.498562	0.260783
1.534157	0.286658	(0.146899)	0.225473	(0.121762)
(0.602395)	0.274888	(0.031292)	0.423314	(8.550052)
0.452016	(0.463851)	0.095805	(0.332984)	1.359035
0.216535	(0.169262)	0.345689	0.267160	0.613441
0.236567	(0.670418)	(0.306340)	(0.141723)	(0.470289)
(0.541531)	(0.168670)	0.130007	(0.340395)	(0.081380)
0.283707	0.524594	0.804470	(0.384444)	0.068384
3.166441	0.309054	0.764701	(0.664571)	0.702513
(0.279394)	0.600973	0.998968	0.532208	(0.366040)
0.573020	1.673672	2.367086	0.192787	(0.703563)
-	(0.222689)	(1.170368)	0.278298	0.283460
(0.703252)	(0.034969)	(0.110035)	0.288039	1.122773
(0.262098)	0.573986	1.083767	0.127778	(1.768618)
(0.544524)	0.174724	0.198069	0.316320	0.138313
(0.016227)	(0.500094)	(0.979202)	(0.523401)	0.235629
(0.256877)	0.403894	1.116281	0.154623	(0.061061)
(0.185201)	0.769866	0.843838	0.798541	(0.506759)
(0.286212)	3.583702	(0.757469)	(0.445104)	(0.168662)
(0.128739)	0.379007	(0.319004)	(0.164436)	0.122769
(0.011452)	0.308041	2.005435	0.177642	(0.430502)
(0.529443)	4.195168	(0.715487)	1.053701	0.133219
(0.407075)	0.568539	0.962669	(2.244126)	0.027526
(0.662323)	(0.929541)	(0.373954)	(0.412438)	0.518544
0.228416	(0.331981)	(0.136220)	0.295833	0.011845
1.093785	0.108908	0.135988	(1.186803)	(1.108937)
0.164838	0.487885	1.398960	0.817788	(0.129622)
(0.357197)	(0.135660)	0.271409	(0.594098)	0.215788
0.176574	0.463618	0.535173	(0.691520)	0.649239
(0.876273)	0.317270	(0.118557)	0.867104	0.575792
(0.004208)	(0.359515)	(0.217697)	0.302770	(0.557188)
(0.444459)	(1.492485)	0.526061	0.379643	0.148115
(0.034769)	(1.191537)	(0.480777)	(0.130681)	0.966920

0.475080	(1.007632)	0.167450	(0.166674)	0.074574
Monday	**Tuesday**	**Wednesday**	**Thursday**	**Friday**
(0.838358)	(0.364558)	0.757230	(0.003700)	0.146219
(0.125312)	0.572243	(0.183870)	(0.508019)	0.610749
0.531979	0.548064	0.102728	0.208723	0.387388
0.477637	(0.544904)	(0.304808)	(0.622520)	0.176184
(0.139987)	(0.119178)	0.752834	0.263973	0.245139
(0.303399)	(0.359175)	(0.186730)	2.019111	0.537725
(0.104605)	(0.302463)	(0.162997)	0.040714	0.174995
0.358342	(0.250613)	(0.870682)	0.484251	0.407673
(0.321030)	(0.581077)	0.033750	0.450156	(0.364333)
0.280382	0.129608	(0.539704)	0.225117	0.070439
(0.276249)	0.345925	0.945418	0.935251	(0.366823)
(0.293811)	(0.268299)	0.220484	(0.435815)	(0.045221)
0.186181	(0.189694)	0.533232	(1.080965)	0.011021
0.119598	0.014508	0.302852	0.621828	(1.146479)
0.056227	0.618695	0.014286	0.486507	(0.083142)
	(0.362217)	0.183221	(0.046086)	0.187760
	(0.858772)	0.621458	0.099387	0.076852
	0.006628	0.640719	0.137791	
	0.073504	(0.236366)	0.005017	
	0.075596	(0.113148)	0.231299	
	0.791252	0.577438	0.524121	
	(0.054198)	(0.698575)	0.378930	
	(0.348600)	(0.743240)	0.535783	
	(1.535821)	(0.327294)	0.623614	
	0.796606		0.891498	
	0.629246		(0.009280)	
			(0.726860)	
			(0.157506)	

Source: Research Data