DAILY EFFECT AND THE RETURNS OF STOCKS LISTED AT THE NAIROBI SECURITIES EXCHANGE IN KENYA

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International Academic Journal of Economics and Finance (IAJEF) | ISSN 2518-2366

Received: 15th October 2021

Published: 23rd October 2021

Full Length Research

Available Online at: https://iajournals.org/articles/iajef_v3_i7_221_238.pdf

Citation: Nalwenge, D. O., Jagongo, A. Atheru, G. (2021). Daily effect and the returns of stocks listed at the Nairobi Securities Exchange in Kenya. *International Academic Journal of Economics and Finance, 3(7), 221-238.*

ABSTRACT

One of the major components of the financial markets are the securities markets of the world. An efficient market is an indicator of market prices reflecting available information about the fundamental values of a company. A conventional distribution of returns to a financial asset indicates that anticipated returns for all days of the week, known as the day of the week, are the same. And investor at the NSE looks to getting a return on their investments. The studies moderating variable is the change in price of the daily volumes traded. A return is the gain or loss of the value of a share in a particular period usually quoted as a percentage. This study sought to find out if there was significant deviations in the conclusions arrived at on the days that had highest positive returns at the NSE for the period starting January 1st 2012 and ending December 31st 2018. If the deviation in daily return are in accordance to observations made in past studies as no studies were done within the aforementioned period. The general objective of this study was the day of the week effect and the returns of stocks listed at the Nairobi Securities Exchange (NSE) in Kenya. The study was guided by the following specific objectives of the study: to establish the Mondays Effect and the returns of stocks listed on the Nairobi Securities Exchange; to establish the Tuesdays Effect and the returns of stocks listed on the Nairobi Securities Exchange; to determine Wednesdays Effect and the returns of stocks listed on the Nairobi Securities Exchange; to determine Thursdays Effect and the returns of stocks listed on the Nairobi Securities Exchange and to establish Fridays Effect exists and the returns of stocks listed on the Nairobi Securities Exchange. This study adopts the positivity philosophy. This study used a longitudinal descriptive research design. The population of this study comprised of the firms listed in the 20 Share Index at the NSE for the period January 2012 to December 2018. Out of the 20 listed companies at the 20 Share Index at the NSE, the study sampled, by use of purposive sampling, 10 companies. The data required was collected from NSE. Data for the seven-year period 1st January 2012 to 31st December 2018 was sourced from the NSE website and NSE trading data vendors. The data series comprised of daily stock market prices of the 10 firms thin the 20 Share Index at the NSE as at 31st December, 2018. The VWAP data was adjusted for dividend payment, any share splits and share bonus. The study used both descriptive statistics and inferential statistics. According to the day of the week the data gathered has been categorized. The t-tests for a test of the week-day hypothesis were based on the empirical model. Initially, the stuffy variable regression was used in the research to determine the influence day-by-week on NSE. A linear regression occurred when a dummy variable equivalent to one each day is represented when the return is equal to zero for the day when the return is equal to the day. The t-test was performed in order to assess whether stock returns differed significantly throughout the five days of the week. The research also tested how different the departures from these daily inventory returns are. Both test were at a 0.05% Confidence Level. The moderating variable and its effect on the other variables was analyzed using multiple regression analysis. The study found that Returns for Monday 2012 had the lowest mean of 101.997 while those for Monday 2014 had the highest mean of 158.28. Returns for Tuesday 2012 had the lowest mean of 101.716 while those for Tuesday 2014 had the highest mean of 162.029.

Returns for Wednesday 2012 had the lowest mean of 100.398 while those for Wednesday 2014 had the highest mean of 162.372. Returns for Thursday 2012 had the lowest mean of 100.661 while those for Thursday 2014 had the highest mean of 162.257 and Returns for Friday 2012 had the lowest mean of 102.782 while those for Friday 2018 had the highest mean of 122.229. Finally, with the return of the Nairobi Securities Exchange in Kenya the day of the week-end effect will be present. On Monday and Thursday, investors can gain an uneven return by purchasing stocks, while on Wednesday, Thursday and Friday they can sell stocks. Investors in trading on the Nairobi securities exchange should not take the days of the week into account in the research. To discover the major variables affecting stock returns in the NSE, investors need do a fundamental and comprehensive market study.

Key Words: **Financial markets, Market prices, Return on investments, Day of the week effect, Stock returns**

INTRODUCTION

One of the major component of financial system of the capitalistic world are the stock markets. Provides place for the trading of financial assets such as stocks and bonds of joint stock companies, securities, and unit trusts and other financial products efficiently, systematically, and by protecting the interest of investors. Stock market functions as bridge and enables individuals as well as institutions to add in country's wealth through their participation in the secondary market of the country.

Governments and regulators are also concerned with market efficiency. Malkiel (2013) stated that an efficient market is an indicator of market prices reflecting available information about fundamental values of a company. In many exchanges, market efficiency can determine how capital can be channelled to companies and/or projects with highest value use. This can encourage economic growth, promotes economic activity and an ample source of increasing employment in the country. While a good performance of a stock market is a strong indicator of healthy economy, efficiency of a country's capital market is an indicator of a well-functioning financial system. Some of the key functions include; economic barometer, pricing of securities, safety of transaction – connects buyers and sellers, economic growth, investment education, allocation of capital, encourages investments and savings, provides liquidity.

Studies conducted to assess the presence of the day-of-the-week effect in sock returns have resulted in confirmation of its existence in some markets and its absence in others. The day-of-the-week effect have been found to be present in some countries and absent in others all across the globe. In their study of closing prices of 62 firms listed in the New York Stock Exchange and NASDAQ, (Kyper & Jarrett, 2016) concluded that time series of closing prices may not be random and did have daily effects. The study indicated that prices posed daily price variability and an investor can predict daily returns with some degree of accuracy.

Review of the London Stock Exchange (LSE), (Steely, 2011) discussed the disappearance of the weekend effect in the LSE as from 1990s through the day-of-the-week effects remained visible when the prices were clustered affected by the market movement.

In, Italy, Greece, Spain, Ireland and Portugal, price dynamics of the stock listed even during the crises calendar anomalies still existed and the pattern of returns in the trading days were significantly different from each other in each of the countries (Aksoy & Seçme, 2013). Durán (2010) in his study indicated that the day-of-the-week effect was present in the Chilean, Mexican and Brazilian stock markets but absent in Argentina for the period between 1998 through 2010. Positive economic news comes at the week end and investors show affirmative and hopeful investment behaviour. This may be one possible explanation for such day of the week effect anomaly which result in a positive return on Fridays. On the other hand, most of the negative economic news comes at the beginning of the week and investors try to sell their investment which result in a negative return on Mondays. Choudhry (2014) in his study on seven emerging Asian stock markets that included India, Indonesia, Malaysia, Philippine, South Korea, Taiwan, and Thailand proved a presence of the day-of-the-week effect on both returns and volatility.

Presence of the day-of-the-week effect in stocks have been analysed in a number of countries in Africa. A study by Kalidas, Mbululu, & Chipeta (2013) on South Africa, Zambia, Botswana, Nigeria, and Morocco for the period 2004 to 2012 established that each day of the week demonstrated patterns of returns significantly different from those of the other days. The presence of the day-of-the-week patterns was established in the studied countries except South Africa which demonstrated higher levels of efficiency.

Abdalla (2012) observed negative and statistically negligible average rates for all days of the week at the Khartoum Exchange, which showed that both return and volatility equations were without the influence of day of the week. In the Nigerian Stock Exchange, Osarumwense (2015) established that returns varied according to the day of the week with Mondays having negative returns and Fridays registering positive returns.

Kuria and Riro (2013) have demonstrated locally that in the Kenya market seasonal abnormalities persist. There is a change of stocks in NSE induced by several market defects, indicating inefficiency in the stock market. This inefficiency therefore provides a great basis for spawning market oddities.

Variations in volatility of stock returns by day of the week patterns and whether a high (low) return is associated with a corresponding high (low) volatility for a given day is an important aspect. Investors can adjust their portfolios by taking into account day of the week variations in volatility with such knowledge. Engle (2015) contends that investors who dislike risk may adjust their portfolios by reducing their investments in those assets whose volatility is expected to increase. Discovering certain patterns in volatility may be useful in many ways, including

the use of predicted volatility patterns in hedging and speculative purposes and use of predicted volatility in valuation of certain assets specifically stock index options.

The Nairobi Securities Exchange

The Nairobi Securities Exchange (NSE) is a self-regulation organization, the only financial institution sanctioned by the Capital Markets Authority (CMA) to facilitate the trade in listed assets (Capital Markets Authority, 2013). One of the main objectives of the CMA is to ensure that the NSE carries out its mandate efficiently. Both the CMA and the NSE have over time undertaken various legal and market infrastructural changes to improve market efficiency.

The NSE is categorised into different market segments that have different eligibility, trading restrictions and disclosure requirements prescribed by the CMA under the Capital Markets (Securities), (Public Offers, Listing and Disclosures) Regulations and in the case of REITs, the REIT Regulations. These market segments are:
Main Investment Market Segment (MIMS): Investment in this segment is for a minimum authorised issued and fully paid up share capital of Kshs 50 million, have net assets of more than Kshs 100 million immediately before the public Offering, should have declared positive after tax profits in at least three of the last five years, it must have a clear future dividend policy, should have at least 25% of its shares held by the public with a minimum of 1,000 shareholders excluding employees of the company listing.

Alternative Investment Market Segment (AIMS): Companies listed in this segment have a minimum authorised issued and fully paid up share capital of Kshs 10 million, have net assets of more than Kshs 20 million immediately before the public Offering, must have been in existence in the same line of business for a minimum of two years, one of which should reflect a profit with good growth potential, it must have a clear future dividend policy, should have at least 20% of its shares held by the public with a minimum of 100 shareholders excluding employees and family members of the controlling shareholders and no investor should hold more than 3% of the publicly held shares.

Trading financial instruments requires face-to-face exchanges at physical places for a lengthy period of time. Alternative trading methods have been developed as a result of technological advancements. Nairobi Securities Exchange has switched from an inefficient floor-based oral auction method to a more efficient fully automated auction system as a result of this advancement. The automation increased operational and informational efficiency, reduced settlement risk, and raised the market to worldwide standards (Okumu, 2013).

In the new automated trading system implemented in 2006, the CMA and the NSE together oversaw the phasing out of the manual trading system and shifting to the fully computerized system. All trading operations at the NSE were fully computerized. Some major effects of the

automation were the improved market liquidity, improved turnover and capitalization, and improved operational efficiency. Further, participation of both local and institutional investors increased as indicated by the rise in the number of accounts in central depository system (CDS) (Capital Markets Authority, 2013).

As a result of the improvements in the NSE and CMA's microstructure, the NSE-20 Share Index reached a record high of 6060 points in February 2007. Although the NSE's performance, growth and expansion have been hampered by recent political events and the bankruptcy of three brokerage firms, there is still hope for the future. Many individual investors have shied away from the market as a result of these scenarios. The NSE's microstructure needs to be improved to provide better levels of transparency, faster trading speeds, and tougher supervision to increase market efficiency (Ndeto, 2012).

To improve the performance of the securities exchange, NSE introduced new products- Real Estate Investment Trust (REITs) and Exchange Trade Fund (ETF), SMEs will have a better chance of accessing financial markets in 2013 thanks to the growth of the Growth Enterprises Market Segment. The aim was to increase market depth to narrow trading spread, improved retail investors confidence while encouraging companies to list on the stock exchange.

Statement of the Problem

The market efficiency hypothesis of Fama shows that there is no way to overcome regular market returns, because the bursaries are efficient and, as such, the price of the shares always adjusts to the factors of all the information available. Efficient Hypothesis for the market suggests that the equity trading always takes its fair value, therefore removing an investor's ability to buy under estimable equities or sell stocks at an inflated price. This thereby avoids any investment that uses the timing of the market or expert selection to surpass market performance. Movements in stock prices are random and Brownian (Kendall, 2013).

However, several academics have uncovered data that contradicts the Efficient Market Hypothesis proposals. Uncovered data shows that stock returns are subject to a phase called a calendar anomaly depending on time, day or month. This means that pre-actions can be utilized to predict future equity prices. Several worldwide research of stock returns on calendar anomalies have shown that seasonal patterns may be used and excess returns are achieved, contrary to the Efficient Market Hypothesis claims.

A research by Field (2007) on the Dow-Jones Index on the day of the week showed a propensity to reduce returns considerably on the other day and a reasonably high and positive Friday rate. French (2009) also considered stock return calendar anomalies. During the period 1977-1990 he utilized every day stock prices and noticed average yields on Monday were significantly negative in comparison to the other days, which had a positive average returns.

Some research have been performed locally to see whether NSE effects day of the week exist. The study in Mokua (2003), as there was no significant difference on NSE returns, has not

detected any weekend impacts. Studies by Sifuna (2012) conducted between 2007 and 2011 have shown the highest positive rates on Tuesday and Wednesday, with the lowest negative rates much better in performance in the first two days of the week than in the final three days. The analysis found firmly that on weekdays the stock return was not affected. That means that the Nairobi Securities Exchange had no day of the week effect. The research recommended that investors focus on their key investing strategy and not allow their selections to be distorted on the day of the week. But the presence of day-of-week impact was observed by Oyori in NSE (2012). Kuria (2013) investigated the phenomena of the week, the phenomenon and the phenomenon of a weekend, and concluded that seasonal conditions were present in NSE market returns. Mixed findings on the existence of anomalies in NSE are derived from local studies. These studies have utilized descriptive and linear statistics to reach their results. This study seeks to find out if there is significant deviations in the conclusions arrived at on the days that had highest positive returns at the NSE for the period starting January 1st 2012 and ending December 31st 2018. If the deviation in daily return are in accordance to observations made in past studies as no studies were done within the aforementioned period.

Research Hypotheses

Below were the null hypotheses guiding this study:

H_{01}: Monday's returns have no significant effect on the stocks return of listed firms at the Nairobi Securities Exchange in Kenya

H_{02}: Tuesday's returns have no significant effect on the stocks return of listed firms at the Nairobi Securities Exchange in Kenya

H_{03}: Wednesday's returns have no significant effect on the stocks return of listed firms at the Nairobi Securities Exchange in Kenya

H_{04}: Thursday's returns have no significant effect on the stocks return of listed firms at the Nairobi Securities Exchange in Kenya

H_{05}: Friday's returns have no significant effect on the stocks return of listed firms at the Nairobi Securities Exchange in Kenya

RESEARCH METHODOLOGY

Research Design

This study used a longitudinal descriptive research design. The longitudinal descriptive design increases the confidence with the estimated effect is attributable to the specific intervention. Panel data involves simultaneously collecting data about the same sample across a definite span of time before subjecting the data to appropriate statistical analysis (Kothari, 2004). The longitudinal descriptive design was appropriate for this study because, first, the day of the week effect requires observation of returns on the days of the week for a significant time span. Secondly, data was collected for each of the five trading days at the NSE, namely, Monday, Tuesday, Wednesday, Thursday and Friday for the same period of time before being subjected to statistical analysis.

This study adopted the positivity philosophy. Positivism philosophy argues that social world exists externally to the researcher, and that the properties of the social world can be measured directly through observation. Inquiry into social phenomena should be based on scientific observation. Scientific observation is independent of the researcher (Creswell, 2003). This study employed the use of the positivism philosophy since the researcher does not have any control over the happenings at the NSE. The data collected was obtained from secondary sources at the NSE. The researcher made observations and conclusions from analyzing the data in an objective way without control of the drawn conclusion.

Empirical Model

The variable in the study was the daily stock returns for the 10 firms listed at the NSE. I useed *t-test* to test the day of the week hypothesis following Marret and Worthington (2008), whereby returns are calculated on trading days during the week. Specifically, I calculated mean return on each weekday (Monday to Friday), and mean return on other four weekdays. Then I calculated the difference in mean return and use *t-test* to test the statistical significance of test return. The daily volumes daily changes in price were also tested.

For example, to test the Monday effect, the *t-statistics* is calculated as follows:

$$t = \frac{\bar{R}_{Mon} - \bar{R}_{NonMon}}{\sqrt{\frac{S^2_{Mon}}{n^{Mon}} + \frac{S^2_{NonMon}}{n_{NonMon}}}}$$

Where: $\bar{R}_{Mon}$ is the mean return on Monday?

$\bar{R}_{NonMon}$ is the mean return on the weekdays other than Monday

S^2_{Mon} is the variance of Monday returns

S^2_{NonMon} is the variance of Non-Monday returns

n^{Mon} and n^{NonMon} are the observation numbers of Monday returns and Non-Mondays returns and daily volumes daily change in price respectively

Operationalization of Variables

Operationalization is the process of developing operational definition of the variables that are contained within the concepts of a quantitative research study (Mwangi, 2014). Operationalization of variables emphasis on how we define and measure the different variables used in our study (McLeod, 2018). Our study focused on the effects of the day-of-the-week effect on the returns of stocks listed at the Nairobi Securities Exchange in

Kenya. Our key indicators were the day's of the week. The daily individual stock return was measured using price change on the daily VWAP as reported by the NSE.

Table 1: Operationalization of Variables

Variable	Type	Operationalization	Measurement
Returns	Dependent	Daily percentage change of the NSE 20 Share Index	Ratio -∞ to ∞
	Moderating	Daily volumes traded	Effect on the day of the week
Monday: Day of the Week effect	Independent	Dummy variable measured by 1 when there is a return, 0 otherwise	Ordinal 0,1
Tuesday: Day of the Week effect	Independent	Dummy variable measured by 1 when there is a return, 0 otherwise	Ordinal 0,1
Wednesday: Day of the Week effect	Independent	Dummy variable measured by 1 when there is a return, 0 otherwise	Ordinal 0,1
Thursday: Day of the Week effect	Independent	Dummy variable measured by 1 when there is a return, 0 otherwise	Ordinal 0,1
Friday: Day of the Week effect	Independent	Dummy variable measured by 1 when there is a return, 0 otherwise	Ordinal 0,1

Target Population and Sample Size

The term population, according to (Kothari, 2004), is used to refer to a well-defined group of people collection of individuals or objects having similar characteristics of interest to the researcher. The objects usually have a binding characteristic or trait. The NSE 20 Share Index at the NSE was used as the research population from January 2012 to December 2018.

During the period, the study was carried out on 10 companies, chosen by use of purposive sampling method from the NSE 20 Share Index. The NSE 20 Share Index (Nairobi Securities Exchange, 2018) is a price weight index calculated as a mean of the top 20 best performing counters. These companies are selected based on a weighted market performance during the period under review based the following criteria: Trading activity measures i.e. market capitalization, shares traded, deals/liquidity and turnover during the period under review are weighed in the ratio of 4:3:2:1 respectively; Must have at least 20% of its shares quoted at the NSE; Must have a minimum market capitalization of Kshs. 20 million; Should ideally be a blue chip with superior profitability and dividend record.

Data was accessed by first obtaining the permission to collect the data from National Commission for Science Technology and Innovation (NACOSTI) and the School of Business of Kenyatta University.

Data Collection

The data required was collected from NSE. Data for the seven-year period 1st January 2012 to 31st December 2018 was sourced from the NSE website and NSE trading data vendors. The data series comprised of daily stock market prices of the 10 firms chosen from the NSE 20 Share Index as listed at the NSE as at 31st December, 2018.

To enhance the integrity of a study, one crucial element is data collection. There are different instruments and procedures that can be applied in data collection procedure which include Experimental Method, Survey Method, Historical Method, Case Study Method and Descriptive Method. For our study, we opted to use Historical Method as the study aimed to explain a historical outcome. Data was sourced from the Nairobi Stock Exchange to ensure it is of high quality and covers the period of study.

Data Analysis and Presentation

Data analysis comprised of data preparation, data analysis and result reporting. The study used both descriptive statistics and inferential statistics. From the inauguration of the NSE from 1 January, 2012 to 31 December, 2018 the study has been testing the day of the week influence in Kenya's Stock Market. Daily market capitalisation was utilized in daily returns calculation, Rt.

Continuously compounded return $R_t = \ln\left(\frac{Pt}{P_{t-1}}\right) \times 100$

Where P_t = Stock price at time t

P_{t-1} = Stock price at time t_{-1}

Ln = Logarithm Natural the sum of the capital gains and the dividends received in the holding period is the total return of the holding of a stock or portfolio of the stocks. The calculated daily returns are the continuous, compounded returns of the daily percentage.

At the beginning of the investigation the dummy variable regression was used to determine the NSE effect day-to-week. A linear regression occurred, where a dummy variable of one for a day and zero for a return for another day is represented every day. A linear regression is used.

$$\mathbf{R_d = D_M R_M + D_T R_T + D_W R_W + D_R R_R + D_F R_F + \varepsilon}$$

Ds represents dumb variables for each day, whereas Rs denote the daily return on Monday, Tuesday, Wednesday and Thursday. The errors in this model remain constant throughout time, as well as the variances. The author further shows that multiple linear regressions need that the sample be linear, random, that the error terms have zero value, that no error term is perfectly tidy, and that the regression coefficients be neutral. Parameter estimations will not be as accurate if certain assumptions aren't met.

The inventory return was employed as a dependent variable. On each of the five days of the week, the t-test was used to see if there had been a significant change in stock returns. The F-test was used to determine the degree of difference between these daily inventory returns. This is because previous study on daily market anomalies employed the regression method utilizing dummy variables. The justification for this approach is that this is why the same

technique is applied in this investigation. It was made easier to compare the outcomes with previous results.

Thereafter, the researcher sought to establish the effect of the moderating variable. In this study, daily volumes traded is the moderating variable. Its effect on the other variables was analyzed using multiple regression analysis. In order to test its effect, the above model was modified as follows:

$$R_d = D_M R_M + D_T R_T + D_W R_W + D_R R_R + D_F R_F + D_m R_m + \varepsilon$$

Where m is the moderating variable

Diagnostics

Tests of Normality

The researcher employed the Shapiro-Wilk W test to assess for normality. Null skews and a mesokurtic graph are ascribed to normality. The Shapiro-Wilk statistics have been computed and the importance of normality violation examined to validate normality with a statistical test. The p-value of the Shapiro-Wilk statistics higher than 0.05 is validated with normality (P>0.5).

Test for Multicollinearity

In order to assess multicollinearity in independent variables, Variance Inflation Factor (VIF) will be utilized. Multi-collinearity occurs if VIF is larger than 10 (VIF). This exhibits substantial multicollinearities when VIF is between 5 and 10 (5 VIF 10) and less than 5 (VIF) indicates minimal (unimportant) multi-linearity.

Heteroscedasticity

This indicates that, for all the current observations, the variance in the error term is not similar. The error term variation is compared for all data according to multiple regressions. In order to evaluate the nil hypothesis, the research used the Breusch-Pagan test. A p-value smaller than that the meaning level (0.05) of the study leads the investigator to assume equal variance.

Stationarity refers to the situation where, in time series data, statistical properties such as mean, variance, autocorrelation, etc. remain constant over time. In stricter terms, stationarity means that all moments of all degrees, such as expectations, variances, third order and higher order moments anywhere are the same (Robinson & Hartemink, 2010). To test for stationarity, the study employed the Dickey-Fuller test.

Dummy Variable Regression Model

The goodness of fit of a model refers to how accurately the model fits the data being used. Measure of goodness of fit focus on the discrepancy between observed values and the

expected values under the model specified (O'Brien, Chooprateep, & Funk, 2009). The goodness of fit of the regression model was measured by the coefficient of determination.

RESEARCH FINDINGS AND DISCUSSIONS

Diagnostic Tests Results

Normality test

The level of significance in the study will be compared to the computed significant value using both skewness and kurtosis so as to make effective conclusions using the test. Residuals will be indicated to be normally distributed if the level of significance is lower than that of the computed significant value. The data will be said to depart form the normal distribution if its level of significance will be lower than the computed significant value (Kline, 2011).

Table 2: Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Monday Effect	0.143	107	0.013	0.788	107	0.011
Tuesday Effect	0.136	107	0.027	0.847	107	0.027
Wednesday Effect	0.121	107	0.040	0.814	107	0.018
Thursday Effect	0.165	107	0.037	0.807	107	0.027
Friday Effect	0.141	107	0.025	0.687	107	0.021

a. Lilliefors Significance Correction

From the finding on the Kolmogorov-Smirnovand Shapiro-Wilk test on normality, the study found that significance in both test were less than 0.05 which is leads to the rejection of the null hypothesis that data on firm's characteristics under three variables (dividend pay-out, retained earnings and dividend yield) we're not normally distributed this is an indication that data on the variables were normally distributed.

Multi Collinearity Test

Problem may arise when two or more predictor variablesare correlated. Heteroscedasticity means that previous error terms are influencing other error terms and this violates the statistical assumption that the error terms have a constant variance. Greene (2003) argues that the prediction is not affected, but interpretation of, and conclusions based on, the size of the regression coefficients, their standard errors, or the associated z-tests, may be misleading because of the potentially confounding effects of multi collinearity. In the presence of multi collinearity, Mason and Perreault (2011) demonstrate that the coefficient estimates may change erratically in response to small changes in the model or the data. However, the decision to finally drop an item also depends on a second step, where the variance inflation factor (VIF) is applied according to Greene (2013) and Baum (2006). The VIF detects multi collinearity by measuring the degree to which the variance has been inflated. A VIF greater than 10 is thought to signal harmful multi collinearity as suggested by Baum (2006).

Table 3: Summary of Collinearity Statistics

Model	Collinearity Statistics	
	Tolerance	VIF
Monday Effect	0.824	2.426
Tuesday Effect	0.786	1.157
Wednesday Effect	0.634	2.396
Thursday Effect	0.654	1.897
Friday Effect	0.782	1.905

The Variance inflation factor (VIF) was checked in all the analysis which is not a cause of concern according to Baum (2006) who indicated that a VIF greater than 10 is a cause of concern. The basic assumption is that the error terms for different observations are uncorrelated (lack of autocorrelation).

Homoscedasticity

Homoscedasticity assumes "that the dependent variable(s) exhibit an equal level of variance across the range of predictor variable(s)". Homoscedasticity is one of the assumptions required for multivariate analysis. Although the violation of homoscedasticity might reduce the accuracy of the analysis, the effect on ungrouped data is not fatal (Tabachnick and Fidell, 2007). Levene test was employed to assess the equality of variances for the three variables calculated (dividend payout, retained earnings and dividend yield). Regression analysis assumes that variances of the populations from which different samples are drawn are equal. From table 4, the resulting P-value of Levene's test is less than the conventional 0.05 critical value, indicating that the obtained differences in sample variances are likely not to have occurred based on random sampling from a population with equal variances. Thus, there is significant difference between the variances in the population.

Table 4: Test of Homogeneity of Variances

Levene Statistic	df1	df2	Sig.
1.626	3	107	.003

Inferential Statistics

Dummy Variable Regression Model

On average returns for each stock and index person with SPSS, the dummy variable Regression Model was used. In the relevant month, each dummy variable took one value and another zero. At an interval of 95% confidence the hypotheses have been tested. The null hypothesis is rejected when the computed coefficient is less than 0.05. The result will thus differ significantly from previous days on that given day.

The linear regression occurs when a dummy variable equals a day when the return is equal to zero and the return is equal to zero when the return is equal to one day;

$$R_d = D_M R_M + D_T R_T + D_W R_W + D_R R_R + D_F R_F + \varepsilon$$

Table 5: Monday Dummy Variable Regression Model Coefficients[a]

	Unstandardized Coefficients		Standardized Coefficients		
Model	**B**	**Std. Error**	**Beta**	**t**	**Sig.**
1(Constant)	2.922	.532		5.492	.000
Tuesday Returns	-1.701	.066	-12.933	-25.722	.000
Wednesday Returns	.734	.174	5.639	4.227	.000
Thursday Returns	1.198	.187	9.192	6.404	.000
Friday Returns	-.223	.040	-1.699	-5.610	.000
a. Dependent Variable: RR					

H01: The returns of listed businesses at the Nairobi Securities Exchange in Kenya are not significantly affected by Monday returns, was rejected because the estimated coefficient was less than 0.05.

Table 6: Tuesday Dummy Variable Regression Model Coefficients[a]

	Unstandardized Coefficients		Standardized Coefficients		
Model	**B**	**Std. Error**	**Beta**	**t**	**Sig.**
1(Constant)	5.740	.855		6.711	.000
Wednesday Returns	.218	.248	1.673	.879	.380
Thursday Returns	.783	.271	6.005	2.893	.004
Friday Returns	-.822	.042	-6.271	-19.534	.000
Monday Returns	-.186	.021	-1.240	-8.910	.000
a. Dependent Variable: RR					

In Kenya, the Nairobi Securities Exchange's stock returns on Tuesdays were not significantly affected by the estimated coefficient, H02, and the null hypothesis was rejected.

Table 7: Wednesday Dummy Variable Regression Model Coefficients[a]

	Unstandardized Coefficients		Standardized Coefficients		
Model	**B**	**Std. Error**	**Beta**	**T**	**Sig.**
1(Constant)	3.441	.604		5.699	.000
Thursday Returns	1.923	.046	14.751	41.393	.000
Friday Returns	-.301	.035	-2.299	-8.620	.000
Monday Returns	-.043	.016	-.288	-2.712	.007
Tuesday Returns	-1.574	.072	-11.973	-21.862	.000
a. Dependent Variable: RR					

It was rejected because the computed coefficient was less than 0.05.

Table 8: Thursday Dummy Variable Regression Model Coefficients[a]

	Unstandardized Coefficients		Standardized Coefficients		
Model	**B**	**Std. Error**	**Beta**	**t**	**Sig.**
1(Constant)	4.298	.611		7.036	.000
Friday Returns	-.120	.037	-.916	-3.210	.001
Monday Returns	-.059	.016	-.391	-3.644	.000
Tuesday Returns	-1.583	.074	-12.038	-21.470	.000

Wednesday Returns	1.764	.044	13.541	40.495	.000

a. Dependent Variable: RR

It was rejected because the computed coefficient was less than 0.05.

Table 9: Friday Dummy Variable Regression Model Coefficients[a]

	Unstandardized Coefficients		Standardized Coefficients		
Model	**B**	**Std. Error**	**Beta**	**t**	**Sig.**
1(Constant)	4.050	.612		6.620	.000
Monday Returns	-.051	.016	-.342	-3.184	.002
Tuesday Returns	-1.882	.054	-14.314	-34.811	.000
Wednesday Returns	1.224	.155	9.394	7.913	.000
Thursday Returns	.712	.177	5.460	4.033	.000

a. Dependent Variable: RR

There was no significant difference between the estimated coefficient and 0.05, thus H05 was chosen as the null hypothesis for this experiment. The Nairobi Securities Exchange in Kenya disputed the idea that Friday results had a substantial impact on the stock returns of listed companies.

The goal of the study was to discover if the five days of the week were significantly different from each other in terms of their length. The results are shown in the following tables. The 95 percent confidence interval for the research findings shows that all five days of the week have considerable rewards.

Table 4.10: Overall Regression Model Coefficients[a]

	Unstandardized Coefficients		Standardized Coefficients		
Model	**B**	**Std. Error**	**Beta**	**t**	**Sig.**
1(Constant)	3.743	.596		6.279	.000
Monday Returns	-.046	.016	-.309	-2.960	.003
Tuesday Returns	-1.618	.071	-12.302	-22.680	.000
Wednesday Returns	.757	.172	5.815	4.391	.000
Thursday Returns	1.126	.187	8.636	6.014	.000
Friday Returns	-.216	.039	-1.647	-5.475	.000

a. Dependent Variable: RR

The study further sought to establish the effect of the moderating variable. In this study, daily volumes traded is the moderating variable. Its effect on the other variables was analyzed using multiple regression analysis. In order to test its effect, the above model was modified as follows:

$$R_d = D_M R_M + D_T R_T + D_W R_W + D_R R_R + D_F R_F + D_m R_m + \varepsilon$$

Where m is the moderating variable

Table 4.11: Overall Regression Model Coefficients[a] with Moderating Variable

	Unstandardized Coefficients		Standardized Coefficients		
Model	**B**	**Std. Error**	**Beta**	**t**	**Sig.**
1(Constant)	4.030	.614		6.569	.000
Monday Returns	-.048	.016	-.321	-3.078	.002

Tuesday Returns	-1.626	.071	-12.366	-22.817	.000
Wednesday Returns	.738	.172	5.664	4.281	.000
Thursday Returns	1.159	.188	8.892	6.182	.000
Friday Returns	-.223	.040	-1.704	-5.652	.000
Moderating Variable	.066	.035	.043	1.893	.059

a. Dependent Variable: RR

The research results indicate that the average returns of the five days of the week are significant at an interval of 95% confidence. The mean returns for the moderating variable were however insignificant at 95% confidence interval.

The fitness of the regression model was decided by the measuring factor. This table indicates that the regression model estimates the dependent variable very well. The "Regression" line and the column "Sig" show the statistical significance of the current regression model. The regression model as a whole statistically estimates the outcome variable significantly, since $p<0.0005$ is less than 0.05. (i.e., it is a good fit for the data).

Table 4.12: Goodness of Fit Model

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	267049.052	5	53409.810	630.429	.000[b]
	Residual	39310.011	464	84.720		
	Total	306359.063	469			

a. Dependent Variable: RR

b. Predictors: (Constant), RF, RM, RW, RT, RTH

Conclusions

The null hypothesis, H_{01}: The returns of Mondays have no significant effect on the stocks return of listed firms at the Nairobi Securities Exchange in Kenya, was rejected.

The null hypothesis, H_{02}: The returns of Tuesdays have no significant effect on the stocks return of listed firms at the Nairobi Securities Exchange in Kenya, it was therefore rejected.

The null hypothesis, H_{03}: The returns of Wednesdays have no significant effect on the stocks return of listed firms at the Nairobi Securities Exchange in Kenya, was rejected.

The null hypothesis, H_{04}: The returns of Thursdays have no significant effect on the stocks return of listed firms at the Nairobi Securities Exchange in Kenya, it was therefore rejected.

The null hypothesis, H_{05}: The returns of Fridays have no significant effect on the stocks return of listed firms at the Nairobi Securities Exchange in Kenya was rejected.

Themean returns of all the five days of the week are significant at 95%confidence interval.

The mean returns for the moderating variable were however insignificant at 95% confidence interval.

To conclude, in the return on the Nairobi Securities Exchange in Kenya, the date of the weekly effect is present. In addition, enough data has been discovered to back up the concept of the weekend effect on the Nairobi Securities Exchange in Kenya stock returns. On the basis of the day of the week's outcome, investors may gain an abnormal profit on Monday and Tuesday and on Wednesday, Thursday and Friday by purchasing stocks. In addition, the Nairobi Securities Exchange in Kenya is not weak, since investors may get abnormal profits through trading technique based on previous data.

The main aim of this study was to explore the influence of day of week on the stock exchange return for the period January 2012 to December 2018 on the Nairobi Securities Exchange. The results of the research as provided were most favorable on Tuesday and the lowest negative on Wednesday. The mean returns over the five days are considerable at 5% trust. In the first two days of the week the performance was likewise significantly better than in the final 3 days.

The study shows firmly that stock return is not affected by the day of the week. That means the Nairobi Securities Exchange does not have a day-of-week effect. Investors should focus on investing ideas and not allow their selections to be distorted by the day of the week.

The study also concluded that It was observed that there was a direct link between large volumes and large price change, whether up or down price movement, and can be linked directly to information flow into the market. The relationship was asymmetrical as the ability to take a short position influence volumes such that the high cost of taking a short position, an upward price movement exceeded an otherwise equal price decrease as costly short positions limit ability to trade with new information.

Recommendations

The report suggests that investors not consider day-to-day business at the Nairobi Securities Exchange in their trading operations. To determine the major elements influencing stock revenues at the NSE, investors need perform a basic market study. Investors should determine certain volatility patterns as illustrated by the days of the week to; forecast hedging and speculation volatility patterns and use projected volatility in valuing certain assets, in particular the stock index options.

Although the negative return on Wednesday is not substantial, NSE should investigate why the negative return is higher. They should also see why the market volatility on Tuesday was highest. This will increase investor trust and further expand the Kenyan capital market. Traders should ensure that they familiarize themselves with strategies that will maximize returns while reducing on transaction costs.

The policy makers, specifically CMA, should ensure that they formulate rules and regulations to ensure fair trading rules to protect investors, specifically retail investors whom may not have non-public material or with little or no knowledge on trading on the stock market.

This study only concentrated on one form of calendar anomaly, that is, day of the week effect. Further research should be conducted on other forms of calendar anomaly namely; the weekend effect, the January effect. Other anomalies like price anomaly and firm size anomaly can also be investigated.

Research should also be carried out to see the effect on returns at the Nairobi Securities Exchange in Kenya after every election cycle. It is known that in Kenya, the economy plummets after every election. Research should also be carried out to see the effect on returns at the Nairobi Securities Exchange in Kenya after the COVID-19 pandemic on the Kenyan economy including the government placed protocols to help curb it.

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