

**MOMENTUM, VALUE EFFECT AND PREDICTABILITY OF STOCK
RETURNS ON THE NAIROBI SECURITIES EXCHANGE**

BY

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**A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILMENT OF THE
REQUIREMENT FOR THE AWARD OF THE DEGREE OF MASTER OF
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DECLARATION

I declare that this research project is my original work and has not been submitted for another degree qualification of this or any other university.

Signí í í í í í í í í í ..

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This research project has been submitted for examination with my approval as a University Supervisor

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DEDICATION

This project is dedicated to my mother, Phoebe who taught me that even the largest task can be accomplished if it is done one step at a time. To my son Jimmy who really felt the effect during this journey, it was for your own good son that you had to suffer a little bit. You'dl be happy.

Finally my siblings, Emilly, George and Susan plus all friends who touched my heart in one way or another, I dedicate this project to you.

ACKNOWLEDGEMENT

If it were not for you Lord, I would not have made it this far. Thank you Lord for the strength, good health, wisdom and knowledge that has helped me to complete this project. In your wings only have I soared. Thank you for sending great colleagues my way, learning was interesting because of them.

My sincere appreciation goes to my supervisor Dr. Nixon Omoro and my moderator Dr. Luther Otieno, thank you for your dedicated guidance throughout the project.

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TABLE OF CONTENTS

DECLARATION	ii
DEDICATION	iii
ACKNOWLEDGEMENT	iv
LIST OF TABLES	viii
LIST OF FIGURES	ix
LIST OF ABBREVIATIONS AND ACRONYMS	x
ABSTRACT	xi
CHAPTER ONE: INTRODUCTION	1
1.1 Background of the study.....	1
1.1.1 Momentum Effect.....	3
1.1.2 Value effect.....	4
1.1.3 Predictability of Stock Returns.....	5
1.1.4 Nairobi Securities Exchange (NSE).....	6
1.2 Research Problem.....	7
1.3 Research Objective.....	9
1.4 Value of the Study.....	10
CHAPTER TWO: LITERATURE REVIEW	11
2.1 Introduction.....	11
2.2 Theoretical Foundation.....	11
2.2.1 Efficient Market Hypothesis.....	11
2.2.2 Behavioral Theory.....	12

2.2.3 Random Walk Theory	14
2.3 Momentum, Value Effect and Predictability of Stock Returns.....	15
2.4 Conceptual Framework.....	17
2.5 Chapter Summary of the Literature and Knowledge Gap	18
CHAPTER THREE: RESEARCH METHODOLOGY	20
3.1 Introduction	20
3.2 Research design.....	20
3.3 Population.....	20
3.4 Data Collection.....	21
3.5 Data Analysis	21
CHAPTER FOUR: DATA PRESENTATION AND DISCUSSION OF STUDY FINDINGS.....	24
4.1 Introduction	24
4.2 Data Distribution Using P-P Plots	24
4.3 Test for Linearity.....	26
4.4 Descriptive Statistics.....	27
4.5 Correlation Statistics.....	29
4.6 Regression Results	30
4.6.1 Summary of Regression Model.....	37
4.6.2 Results on Analysis of Variance	37
4.6.3 Results of Regression Coefficients	38
CHAPTER FIVE: SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS	40

5.1 Introduction	40
5.2 Summary of Study Findings	40
5.3 Conclusion and Recommendations	42
5.6 Suggestion for Further Research.....	43
REFERENCES	44

LIST OF TABLES

Table 4.1: Collinearity Statistics	27
Table 4.2: Descriptive Statistics of Study Variables.....	28
Table 4.3: Results of Correlation Analysis.....	30
Table 4.4: Summary of the Regression Model.....	37
Table 4.5: ANOVA Results.....	38
Table 4.6: Results of Regression Coefficients	39

LIST OF FIGURES

Figure 2.1 Conceptual Model.....	18
Figure 4.1: Normal P-P Plot of Momentum Effect.....	25
Figure 4.2: Normal P-P Plot of Value Effect	25
Figure 4.3: Normal P-P Plot of Stock Returns	26
Figure 4.4: Distribution of Stock Returns of NSE (2009 ó 2018)	28

ABBREVIATIONS AND ACRONYMS

AMEX	American Express Company
ASEA	African Securities Exchange Association
CAPM	Capital Assets Pricing Model
CMA	Capital Markets Authority
CRSP	Center for Research in Security Prices
EMH	Efficient Markets Hypothesis
NSE	Nairobi Securities Exchange
NYSE	New York Security Exchange
WFE	World Federations Exchange

ABSTRACT

The relationship between momentum and value effect on predictability of stock prices has been point of focus across various markets and different time periods. Nairobi Securities Exchange has been a vibrant stock market in East African region and one of the fastest-growing economies in sub Saharan Africa. It focuses on the exchange of securities issued, bought and sold by individual and institutions both local and foreign through the services of stock brokers. It provides a trading floor which though available is not commonly in use after being replaced by the automated trading system which enables members to trade at the comfort of their offices. However, despite the developments, the market has not reached the level of developed markets in terms of Efficiency. The aim of this study was to examine the influence of momentum and value effect on predictability of stock returns at the Nairobi Securities Exchange. This study was anchored on the theories of efficient market hypothesis, behavioral finance theory and random walk theory. The study adopted both longitudinal and cross-sectional research design where the target population was all companies which were listed in the NSE for the period 2009 ó 2018. This research employed use of secondary data. The secondary data was collected using a data capture form. This study analyzed collected data through use of descriptive and inferential statistics. The findings indicated that momentum effect statistically influences predictability of stock returns. Value effect was as well found to influence the prediction of stock returns on Nairobi Securities Exchange. The study therefore, recommended that the traders willing to invest in shares at stock market should consult most reputable advisory firms or stock analysts for further support and advice on the proper ways to follow.

CHAPTER ONE: INTRODUCTION

1.1 Background of the study

Scholars have long questioned whether momentum effect and the value effect are capable of predicting the future market returns (De 2018). Some scholars have argued that momentum effect which is derived from the principle that stock with high rate of returns in the near past have higher future rate of returns than stocks with low past rate of returns, is considered as one of the most challenging anomalies in asset pricing (Budoo, 2011). This implies that an effective momentum strategy involves purchasing past winners and disposing off past losers. Other scholars posit that value effect which comprises of value stocks with higher book equity to market equity (B/M) ratios have higher average returns than growth stocks which have low B/M ratios, and stocks with large cumulative returns over the past year continue to do better (Azerdo, 2015). Sharpe (1964) points out that variations on the returns on investment are most dependent on the risk appetite of the investor; the more risk an investor is willing to take on investment, the more the returns to the said investor and vice versa. However, Fama (1970) argues that it cannot be possible for predictability of stock returns since the stock price should always reflect all available information.

This study was anchored on the theories of Efficient Market Hypothesis (Fama, 1970), Behavioral Finance (Jensen & Mecklin 1976) and Random Walk theory (Horne & Parker 1965). The EMH theory posits that prices of shares in the stock market should be a reflection of the fundamental information about companies (Fama 1970). Thus in efficient markets, the market value of the company changes proportionately to that of the

intrinsic value of that particular company. The Behavioral theory postulates that investors have cognitive biases, an imperfection in human perception of reality (Jensen & Mecklin 1976). This paradigm is based on the concept of explaining behavior through biases of information, belief and non-standard preferences to make an argument for irrational behavior among agents that can explain persistent mispricing of assets and other anomalies (Baker, 2010). The random walk theory on the other hand posits that the current market price of a given stock is independent of and is unrelated to previous market price patterns. This theory implies that a series of stock price changes has no memory-that one cannot predict future market prices on the basis of past history of price behavior (Horne & Parker 1965).

Nairobi Securities Exchange (NSE) is the largest stock exchange in East African region in terms of market capitalization and the number of companies listed (CMA, 2018). The Company is the sole securities exchange licensed by the Capital Markets Authority to promote, develop, support and carry on the business of a securities exchange and to discharge all the functions of a securities exchange in Kenya. The NSE profit after tax reduced by 12% from Kshs 216 million in 2017 to Kshs 191 million in 2018 due to increased administrative costs. Operating income increased by 3% from Kshs. 607 million in 2017 to Kshs. 626 million in 2018 mainly due to higher equity turnover (NSE 2018). NSE shareholder base stands at 13,196 shareholders with foreign institutions having the largest percentage of 49.8% and foreign individuals having the least of 1.34%. The products of NSE include 62 equity listings, 86 bond listings which consist of 26 corporate bonds and 60 government bonds (NSE 2018).

1.1.1 Momentum Effect

Various scholars and practitioners have defined the momentum effect in different ways. Jagadeesh & Titman, (1993) defines it as an intermediate horizon of 3 to 12 months where stock prices with strong performance continue to do well while stocks with poor past performance continue to do poorly. Zaremba, (2018) defines momentum effect as the tendency of assets with good (poor) past performance to outperform (underperform) in the future. Budoo (2011) defines it as a positive relationship between the return of a stock during a specific period with its lagged returns, both comparative to the cross-sectional sample mean. Momentum effect is the tendency in which stock prices overreact to information that assets continue in the same direction as their historical performance, (Ljung & Svedberg, 2018). It can also be referred to as a positive autocorrelation in stock prices, where prices drift either up or down (Sondergaard, 2010). This study will adopt the definition by Jagadeesh & Titman,(1993).

Scholars have documented several types of momentum in empirical studies including industry momentum, earnings momentum, and price momentum. According to Moskowitz & Grinblatt (1999), industry momentum is the phenomenon, whereby industries with strong past performance continue to outperform industries with poor past performance. Thus, industry momentum strategies are more profitable than individual stock momentum strategies. Earnings momentum concentrates on return drifts following good or bad earnings announcements, meaning that positive announcement stocks will outperform negative announcement stocks in the post-announcement period (Chan, Jegadeesh and Lakonishok 1996). Lastly, price momentum refers to the phenomenon where stocks with high past returns continue to outperform stocks with low past returns.

Jegadeesh and Titman (1993) describe price momentum as a strategy of buying past winning stocks and selling past losing stocks. It earns abnormal returns persisting for at least one year after the execution of the strategy. Most scholars have adopted price and volume momentum strategies as first used by (Jegadeesh & Titman, 1993), which this study is going to adopt. Thus, stocks are grouped according to portfolio returns computed with the top quintile representing the winning stocks and bottom quintile representing the losing portfolio (Lishenga, 2011). Returns of the portfolios, winners and losers are determined by use of the log returns (Jegadeesh & Titman, 1993).

1.1.2 Value effect

Scholars have documented empirically the value effect using several different definitions. It is defined as a positive relation that exists between returns security and the accounting base ratio that measures cash flow or value of the market price of the security, (Basu, 1977). According to Note (2012), value effect is the excess return that a portfolio of value stocks (stocks with a low market value relative to fundamentals) has, on average, earned over a portfolio of growth stocks (stocks with a high market value relative to fundamentals). The value effect consists of the outperformance of value stocks characterized by low prices relative to earnings, dividends, book assets or any other measure of fundamental value, versus growth stocks with higher price ratios (Azerdo, 2015).

Most scholars have described value effect using specifications relating to the price of a stock to some measure of fundamental company value such as earnings, cash flow, dividends, sales or book value of assets (Note 2012). Others have narrowly described it in

terms of the accounting-based measures such as earnings per share and book value of common equity per share (Basu 1977). The two common methods most scholars have used in identifying value stocks are price to book value ratio and price earning ratio (Nicholson, 1960). Ball (1978) has described it in terms of Earnings to Price ratio (E/P) as proxies for expected returns. He argued that if CAPM is an incomplete specification of priced risk, it is reasonable to expect that E/P will explain the portion of expected return that is compensation for risk variables. Other scholars have used book-to-Price ratio (B/P) and value ratios that use cash flow (earnings plus accounting depreciation expense) in place of earnings in the numerator of the ratio (Rosenberg, Reid and Lanstein 1985; DeBondt and Thaler 1987). A review of the literature has shown that most scholars have adopted earnings per share, book value to market value and cash flow to price ratio measures as the acceptable framework which this study will adopt.

1.1.3 Predictability of Stock Returns

Stock market returns have been defined by several scholars among them, Ghaem & Tussi, (2007) who defines it as collection of earnings that belongs to a shareholder during a financial period. They further noted that they include dividend per share that is paid after tax deduction, changes of share price over a period of time, advantages resulting from bonus issues or dividends and advantages realized from stock purchase. Alagide et.al. (2010) also defines it as a reflection of cash flow valuations into the future. It is also referred to as the financial and economic signals of development in a country in its current or future state (Hamrita & Trif 2011).

Scholars have identified predictors of stock returns in terms of valuation ratios and time varying investment opportunities in future returns in the long-run (Jegadeesh, 1991). These ratios include the dividend price (dp) ratio, the dividend-yield (d/y) ratio (Fama & French, 1988; Campbell and Yogo, 2006) the book-to-market (b/m) ratio Pontiff and Schall (1998), the earnings-dividend(e/d) ratio (Lamont, 1998), the price-earnings (p/e) ratio (Campbell and Shiller1998). Most of the empirical studies have indicated that these predictors have a common feature in that almost all of them are highly persistent. Therefore, the predictive ability, as measured by R^2 tends to rise as the forecast horizon increases (Wang 2015). For the purpose of this study, stock returns will mean changes in share price or price to earnings ratio

1.1.4 Nairobi Securities Exchange (NSE)

Nairobi Securities Exchange has been a vibrant stock market in East African region and one of the fastest-growing economies in sub Saharan Africa. It was established in 1954 and registered under the companiesø Act in 1991. According to (ASEA, 2018) NSE is classified as the largest in the region in regards to market capitalization and companies listed. It became the first exchange in East Africa to be admitted as a full member of the world Federation of exchanges (WFE), NSE 2018. The listing was done in January 2018. NSE provides main hub for trading in the secondary market. It focuses on the exchange of securities issued, bought and sold by individual and institutions both local and foreign through the services of stock brokers. It focuses on both securities issued by the government and listed firms. It provides a trading floor which though available is not commonly in use after being replaced by the automated trading system which enables members to trade at the comfort of their offices.

In September 2006, Automated Trading System was established, a live trading technique that led to number of daily trading hours increase to 1500Hrs. The live trading technique also led to ease and possibility to trade treasury bonds and immobilized corporate bond. Despite the developments, the market has not reached the level of developed markets in terms of Efficiency. This indicates that the level of momentum results at the security market is different. The level at which it is affected is equally dependent on the existing market microstructure, which provides a good basis for further studies on the level and nature of momentum returns and value effect.

1.2 Research Problem

Various scholars have studied the relationship between momentum and value effect on predictability of stock prices across various markets and different time periods (Jegadeesh & Titman, 1993; Chan, Hamao, & Lakonishok, 1991). However, most of the findings have been equivocal or contradictory (Agathe, 2012). Some studies have shown that financial anomalies predict future market returns (Rouwenhorst, 1998; Stanivuk, Skarica, & Tokic, 2012; Arindam, Anupam, & Gautam, 2018) other scholars however, argue that the level of efficiency and market development informs the level of market returns (Hameed & Kusnadi, 2002; Jarret, 2008; Okpara, 2010). A study conducted by Cakici et al (2013) on the effect of value and momentum over eighteen emerging stock markets confirmed the presence of momentum and value abnormal return. However, a study by Gibbons et.al (1989) rejected the momentum hypothesis since the model used could not explain the nature of portfolio returns.

NSE provides main hub for trading in the secondary market. It focuses on the exchange of securities issued, bought and sold by individual and institutions both local and foreign through the services of stock brokers. It focuses on both securities issued by the government and listed firms. It provides a trading floor which though available is not commonly in use after being replaced by the automated trading system which enables members to trade at the comfort of their offices. In September 2006, Automated Trading System was established, a live trading technique that led to number of daily trading hours increase to 1500Hrs. The live trading technique also led to ease and possibility to trade treasury bonds and immobilized corporate bond. Despite the developments, the market has not reached the level of developed markets in terms of Efficiency.

Past studies have been carried out on market anomalies with major focus on seasonal effects on stock returns. A study by Arindam et al (2018) on momentum, value effect, risk premium and predictability of stock returns in India, established that stock market returns can be predicted by risk premium, momentum and value effect. A study by Lewellen (2000) on the predictability of stock returns: Theory and evidence found out that observable properties of prices and returns can differ significantly from the properties perceived by rational investors. A study by Cao (2015) on the influence of the momentum effect in the UK stock market established that stock market volatility has a negative impact on a momentum trading strategy's return. Regionally, a study by Bundoo (2011) on the analysis of stock market anomalies and momentum Strategies on the stock exchange of Mauritius, determined negative Tuesday returns but positive returns for other days of the week. A study by Bartens & Hassan (2011) on value, size and momentum portfolios in real time in South African Stocks, established that real-time trading strategies

based on size, value and momentum effects would not consistently outperform a passive index of South African stocks. Locally, a study by Otinga (2017) on price volume momentum effect on stock returns at the NSE found out that momentum returns predicted the stock in the short run of three to six months. Onyuma (2011) study on day of the week and month of the year effect on the Kenyan Stock market returns found out that Monday produced the lowest negative returns, while Friday and January produced the largest positive stock returns.

A review of the empirical literature has highlighted a number of conceptual and contextual gaps. This can be explained by the inconclusive results which reveal the complexities of the real market operations. Majority of the studies had not conceptually linked value and momentum effect on predictability of stock prices (Arindam et al., 2018; Bartens & Hassan 2011), had a conceptual gap. A contextual gap emerged since most of the studies had been done in Europe and Asia and none has been carried out in Kenya that has linked momentum and value effect on predictability of stock returns. In order to address these gaps, this study sought to answer the following question: Can value effect and momentum effect predict the future market stock returns in the NSE?

1.3 Research Objective

- i. To examine momentum effect on predictability of stock returns at the Nairobi Securities Exchange.
- ii. To determine the value effect on predictability of stock returns at the Nairobi Securities Exchange.

1.4 Value of the Study

An examination of momentum and value effect on stock returns has an important implications to a number of stakeholders in the market. Fund managers and investment analysts can make investments from an informed opinion using the findings of this study. Since the results of this study are expected to shed more light on the state of market efficiency in Kenya, Capital Markets Authority and Nairobi Securities Exchange could use the findings to come up with better ways of enhancing efficiency and reducing the extent of momentum in the market. Academicians can get more information on the effectiveness of momentum and value effect on stock returns since the study will focus on emerging market.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter covered both the theoretical and empirical review of existing literature. Section 2.2 reviewed theories relevant to this study which includes, Efficient Market Hypothesis, Random Walk Theory and Behavioral Finance. Section 2.3 reviewed the empirical literature as done by previous researchers. This chapter came up with the research gap in section 2.4 and developed conceptual framework in section 2.5.

2.2 Theoretical Foundation

Different theories have been used to advance studies on market anomalies. This research was anchored on three theories namely the Efficient Market Theory, Random Walk Theory and Behavioral Finance Theory. The EMH was applied to evaluate the behavior of stock market returns in respect to momentum and value. The Behavioral finance was used to shade more light on the extent to which behavioral aspects of an investor influence the momentum value effect of returns. Finally, Random Walk theory gave an insight on how stock returns behave in the market or whether they follow a particular pattern of behavior.

2.2.1 Efficient Market Hypothesis

This theory postulates that prices of shares in the stock market reflect fundamental information about companies (Fama 1970). Thus in efficient markets, the market value of the company changes proportionately to that of the intrinsic value of that particular company. Brealey, Myers, & Allen, (2011) argue that it is impossible to earn a return rate greater than the return rate of the market. Thus, the value of shares reflect the fair value of the company and is equal to the future cashflows discounted by an alternative cost of

capital. The theory explains that in a weak form of efficient market, the current stock price reflects all the information related to the stock price changes in the past (Degutis & Navickyte, 2014). It further states that in a semi-strong efficient current stock prices reflect not only information about historical prices but also all current publicly available information such as announcement of acquisitions, dividend pay outs, changes in accounting policies (Fama, 1970).

In strong form efficient market however, current share prices reflect all possible information which doesn't necessarily have to be public. This form of market efficiency implies that it is not possible to earn excess return while trading on insider information which is not very likely, (Malkiel, 2003). However, since insider trading is not illegal, some scholars have argued that strong form of market efficiency is possible, (Schwert, 2003). However, other researchers like argue that EMH has a major weakness in that not all market participants behave rationally future securities return. In agreement, Jensen & Mecklin, (1976) state that EMH can only be viewed as a frictionless idea that would exist if there were no capital market imperfections like institutional rigidities, taxes and transaction costs. The implication of this theory to the present study is that security prices reflect past and current information in the market (Mboya & Ndegwa, 2015).

2.2.2 Behavioral Theory

This theory explains the influence of psychology on the behavior of financial investors and its subsequent impact on stock market (Jensen & Meckling, 1976). This paradigm is based on the concept of explaining behavior through biases of information, belief and non-standard preferences to make an argument for irrational behavior among agents that

can explain persistent mispricing of assets and other anomalies (Baker, 2010). Behavioral finance sets a challenge for the prospect of efficient markets, putting an accent on the ways in which investors interpret information at their disposal. Thus, it enables a better understanding of investors' behavior and events taking place on financial markets. The use of behavioral finance helps investors make better decisions concerning their investments on financial markets that are becoming more complex and challenging (Baker, 2010).

According to Kahneman and Tversky (1973), investors usually forecast future uncertain events by focusing on recent history and pay less attention to the possibility that such short history could be generated by chance. Rabin (1998) argues that investors tend to weigh heavily on salient, memorable, or vivid evidence even if they have better information and once strong hypothesis is formed, they are often inattentive to new information contradicting their hypotheses, but they often misinterpret the new evidence as additional support for their initial hypotheses. In addition, Kahneman and Riepe (1998) find that investors' deviations from the maxims of economic rationality are pervasive and systematic. Along the similar line is that investors tend to overweight recent information and under weigh base rate information. De Bondt & Thaler (1987) find that investors overreact to drastic or unexpected events or information. They find that portfolios of prior losers outperform that of prior winners in the long run. Haugen (1999) argues that inefficient market will lead to positive payoff to cheapness resulting from the market's overreaction to success or failure.

2.2.3 Random Walk Theory

The theory posited that current market price of a given stock was independent of and unrelated to previous market price patterns. This theory implies that a series of stock price changes has no memory since one cannot predict future market prices on the basis of past history of price behavior (Horne & Parker, 1965). Due to the nature of price random changes, investors are unable to take advantage of the market prices in order to realize super abnormal profits (Kendal, 1953). According to Kendal, (1953) the current market price of a given security is not dependent upon the previous price patterns in the market.

The theory contends that price sequences do not demonstrate predictive patterns over a period of time but can be best described by a random walk. According to the theory, a definite lack of correlation between the precedent and current prices can easily be seen; hence, if a share increases at a particular time, no market partaker is able to precisely foresee that it will go up again the following day (Fama, 1965). Thus, changes in stock prices have the same distribution and are independent of each other and that past movement or trend of a stock price or market cannot be used to predict its future movement. Thus, the theory explains that it's impossible to outperform the market without assuming additional risk. This theory will contribute to this study changes in stock prices contain similar distribution and are sovereign, so a precedent tendency of a stock price cannot be effectively used to forecast its upcoming movements. Given that the authorities thrive now and again to improve the stock market, particularly in the areas of efficiency as an efficient stock market attracts investors, it becomes apparent to seek evidence for or against the random walk hypothesis of the NSE so as to determine whether it is efficient in terms of behavior and be able to forecast of the stock prices.

2.3 Momentum, Value Effect and Predictability of Stock Returns

Evidence from different global, regional and local studies have shown that anomalies have significant effect on stock returns. Globally, Jagadeesh & Titman (2001) documented momentum abnormal profits during the period beginning 1965 to 1988 in the US stock and identified negative cumulative returns of the momentum portfolio from the 13th to 60th months. Habib & Faid, (2007) studied stock returns predictability focusing on Pakistan Equity Market. They collected data for the period between July 1999-December 2015 in which they divided study sample into pre and post financial crisis of 2007-2008. The study applied panel regression for the data analysis. In their results, they concluded that momentum, earnings growth rate and size are the significant predictors of stock return. A study by Fama & Fench, (2008) aimed at investigating the effect on average stock of anomalies; size, growth, profitability, value, momentum, accruals and net stock issues found out that the premier anomalies are momentum, accruals and net stocks issues while less robust ones are profitability and asset growth. Arindam, Anupam, & Gautam (2018) in their study explored the predictability of Indian stock market on the basis of risk premium, value effect and momentum effect. They applied multiple discriminant analysis model to determine whether the sentiments of investors significantly affect performance of the stock returns. Their result showed that the risk premium, momentum and value effect may have significant power for predicting the Indian stock market returns. The validity test of the model also corroborated the impact of financial anomalies over predictability of stock returns.

Regionally, Griffin et.al (2003) in their study sought to examine if momentum profits can be explained by macroeconomic risk internationally. The study included African countries

like South Africa and Egypt. Non-US data were sourced from International Data stream that has more than 50 stocks. On the other hand US monthly stocks returns data were collected from NYSE, AMEX and CRSP. Their findings revealed that the profits are highly significant in all regions except Asia. Budoo (2011) investigated momentum investment strategies by using the equity stocks of Mauritius for the period 2004-2006. The study adopted the model developed by Carhart (1977) which included additional momentum factor besides the Farma and French factors. The study adopted descriptive statistics about the market in general and data collected from companies' annual reports for individual companies for secondary data source. His findings concluded that momentum factor is statistically significant and stronger than the market, size and book equity to market equity factors.

In Kenya, studies on anomalies have also been done in at the Nairobi Securities Exchange. Wainaina, (2007) in his study established the existence of momentum for a period 1999 to 2016 in the NSE. He used 52-week high method for the period, basing his formation strategies on 3, 6, 9 and 12 month. He ranked all stocks with a return history of 12 months in ascending order using 52-week high trading strategy and assigned the stocks to one of three portfolios based on the ratio of their J-month. To calculate the ratio he divided the average holding price at month J with the highest price in the preceding 52-weeks. The study came up with a positive result of all zero cost that was ranging between 0.05% and 1.13% with the least average month return being 3-6month strategy and highest monthly return being 9-12month strategy. Lishenga et al. (2011) sought out to study the profitability of strategies of momentum at the NSE for the period 1995-2007. They employed Weighted Relative Strength strategy and Relative Strength strategy for

implementing trading strategies for momentum. The methodology they adopted was descriptive statistics. Their analysis revealed that momentum is driven by continuation in the component of individual security rather than by cross-sectional differences in the expected risk and return.

Kuria and Riro (2013) in their study even though focusing on different aspects of stock market anomalies; seasonal effects on average returns of NSE, found out that momentum, calendar and day of the week anomalies existed at the market. Otinga (2017) examined the existence of price volume momentum in NSE. The period of his study was between 2011 and 2016 though he divided it into 2011-2013 and 2014-2016. He further assessed perception of trading participants on price volume momentum using Jagadeesh and Titman methodology in which portfolios were formed based on past returns as well as past volume. His findings indicate that investors stand a chance to make better returns when they buy into the winning stock and go short on the losing stock. He further alluded that his result can only happen in the short run, over a period of three to 6 months.

2.4 Conceptual Framework

This section conceptualizes the study by bringing out the major variables under investigation. Dependent variable is the Stock Market returns and independent variables being, Momentum Effect and Value Effect.

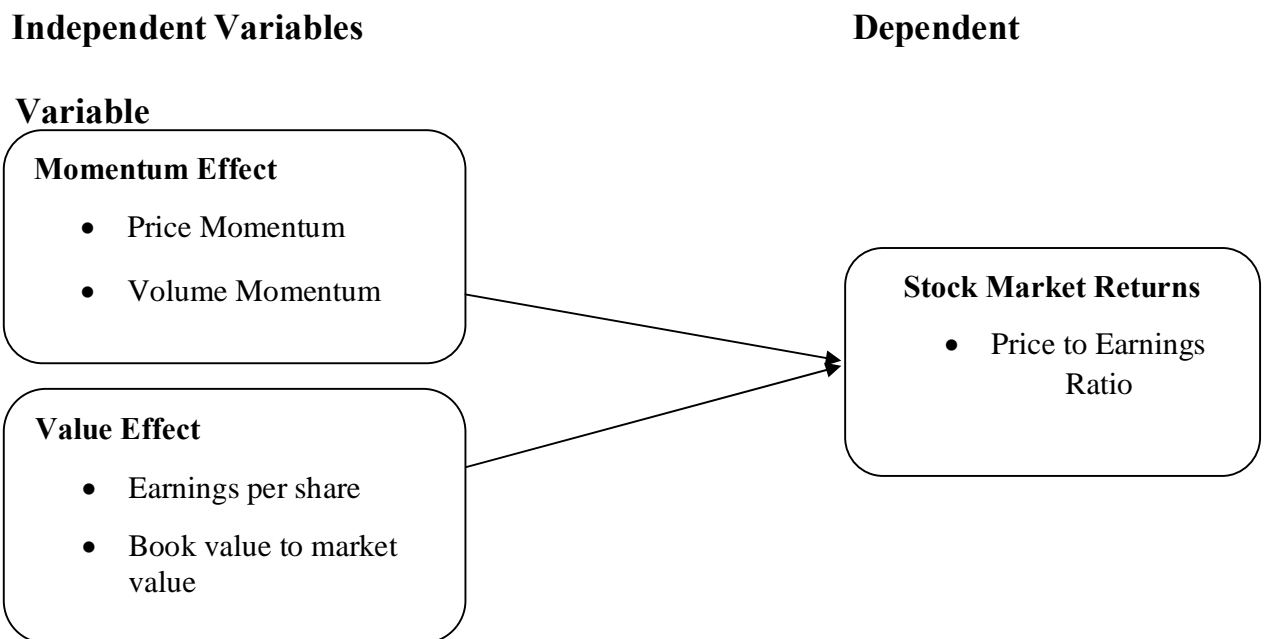


Figure 2.1 Conceptual Model

Source: Author (2019)

2.5 Chapter Summary of the Literature and Knowledge Gap

A review of cited studies has revealed a number of knowledge gaps that this study will attempt to address. Most of the cited studies did not link momentum and value effect respectively and predictability of stock returns (Habib & Faid, 2007; Lishenga et al. 2011), thus revealing a conceptual gap. Another conceptual gap has been revealed in a study by Kuria & Riro, (2013) as it focused on the effect of seasonal anomalies on average returns in NSE. This present study will focus on the momentum and value effects on predictability of stock returns in the NSE. A methodological knowledge gap has been revealed from cited studies like, Otinga, (2017) who assessed the perception of trading participants on price volume momentum using Jagadeesh & Titman methodology.

This present study however adopted both descriptive and inferential techniques. Contextual knowledge gap has been realized from the study by Zaremba, (2018) whose study focused on global equity markets, this study will focus on a particular security market exchange, NSE. There have been different studies done on effect of market anomalies on stock returns. However, no study has investigated momentum and value effect on stock returns particularly in the NSE. This chapter discussed the different theories and exact studies that have been done drawing out lack of consistencies in the results. Therefore, the study seeks to assess the momentum and value effect on the predictability of stock returns in Nairobi Securities Exchange. This chapter finally presented conceptual framework in diagrammatic form.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter outlined the methodology that was used to carry out the study. It spelled out the following aspects; research design, target population, sample design, data collection and data analysis.

3.2 Research design

This study adopted both longitudinal and cross-sectional research design. Longitudinal studies employ continuous or repeated measures to follow particular individuals over prolonged periods of time (Caruana et al., 2015). Since the study covered a ten year period of time, longitudinal study was ideal for an extended period with advantage of tracking changes over time. This research design was particularly useful for evaluating the relationship between variables and their influence over different lengths of time. In addition, since data was collected for given individual firms within a predefined group, appropriate statistical testing may be employed to analyze the influence over time for the group as a whole, or for particular firms. This method was successfully used by Jagadeesh and Titman (2001) and Otinga (2017).

3.3 Population

The target population of this study was all companies listed in the NSE for the period 2009 ó 2018. According to CMA (2018), a total of 64 companies are listed in the NSE. However, this study only focused on companies which have been consistently trading throughout the period of study (2009 ó 2018). Any company therefore that was delisted or suspended during the period did not form part of the sample. According to CMA (2018),

four companies were suspended during the period therefore leaving 60 companies that formed the population of this study.

The companies included must have been listed at least one year before the test period starts so as to prevent return-effects after the listing of the stock. Therefore, the stocks listed must fulfill the above listing requirements.

3.4 Data Collection

This research employed use of secondary data. The data was collected using secondary data capture form (Appendix I) whereby the source of data captured included CMA reports, individual firm's published financial reports, NSE handbooks for the listed companies and annual reports for the period 2009 ó 2018. The kind of data collected included; daily share prices, index performance and trade volumes. Data from published financial statements of the listed category of firms also formed part of secondary data. The nature of secondary data collected were the monthly data of various variables in the model.

One stock per company was included in the data so that if a company had more than one stock outstanding, only one was selected. This was important when testing for value effect since the book value for the company with more than one stock was not be used twice.

3.5 Data Analysis

Data analysis entailed; organizing, accounting for and explaining the data in terms of the respondents' definition of the situation using patterns, themes and categories, Gay (1992).

This study used descriptive and inferential statistics. Mugenda and Mugenda (2003)

observed that descriptive statistics simplify description of results thereby enabling the researcher to summarise and categorize the research results. It also helped the researcher to describe the research data by disseminating the results into understandable form. Descriptive technique included the use of arithmetic mean, standard deviations and percentages. Inferential statistical techniques was used to enable the researcher make judgement about the implication of the observed associations among the study variables. Inferential techniques to be applied includes, correlation regression analysis, t-test and Analysis of Variance (ANOVA). After collecting data and checking for their completeness, they will be keyed into SPSS (Statistical Package for Social Sciences) for analysis. Regression analysis will be applied to show the nature and strength of the relationship between variables and to test hypothesized relationship. The regression model will be as follows:

$$R = \alpha + \beta_1 ME + \beta_2 VE + \epsilon$$

Where:

R ó Stock returns

β₂. Regression coefficient for VE

α ó Regression constant

ε - error term

ME ó Momentum Effect

β₁ ó Regression coefficient for ME

VE ó Value Effect

$$R = \frac{(P1 \text{ ó } P0) + D}{P0}$$

Po

Where:

P1 - Ending stock price

Po - Initial stock price

D - Dividends

$$ME = V - Vx$$

Where:

V ó Latest Price

Vx - Closing Price

x ó Number of days.

Value Effect (VE): The ratio of the companies' book value of equity and the market value of equity. It is calculated as:

$$VE = \frac{BV}{MV}$$

Where:

BV ó Book value of equity for a company at a given time

MV ó Market Value of equity at the same time

CHAPTER FOUR: DATA PRESENTATION AND DISCUSSION OF STUDY FINDINGS

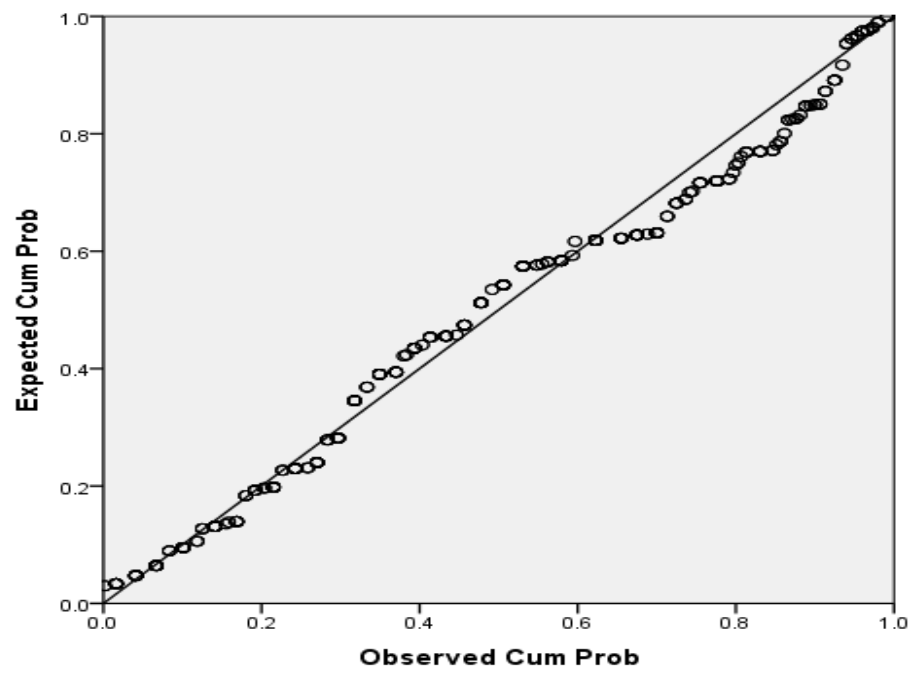
4.1 Introduction

The initial aim of this study was to determine the effect of momentum and value effect on predictability of stock returns on the Nairobi Securities Exchange. The independent variables in this case were momentum effect and value effect. Stock returns was in this case used as dependent variable. Therefore, this chapter is comprised of various statistics done to estimate the test of normality, collinearity, descriptive statistics, correlation analysis, as well as regression statistics.

4.2 Data Distribution Using P-P Plots

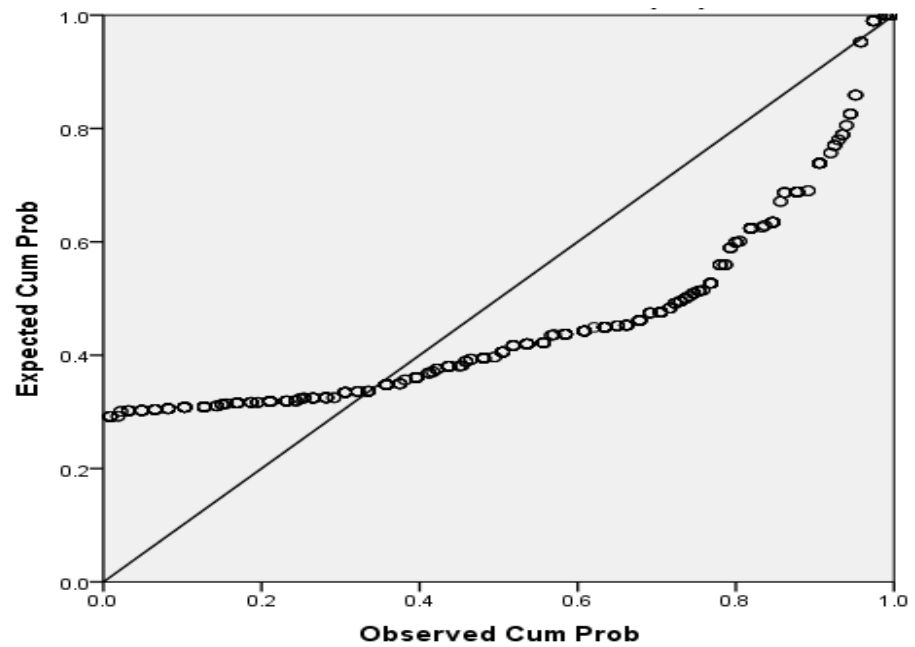
The probability-probability plot also known as P-P plot was used to help in determining how well distribution of data points fitted on a regression line. Therefore, the plot was said to be linear when the variable data points distribution is the correct model. The results reported in Figure 4.1, 4.2, and 4.3 indicates there was significant variation in distribution of data points of constructs under study. For instance, the findings revealed that normal P-P plot of momentum effect and stock returns were perfectly fitted, since the functions estimation of both location and scale parameters were found to be distributed normally. On the hand, the output on value effect indicated that the data points of this construct was not perfectly fitted.

Figure 4.1: Normal P-P Plot of Momentum Effect



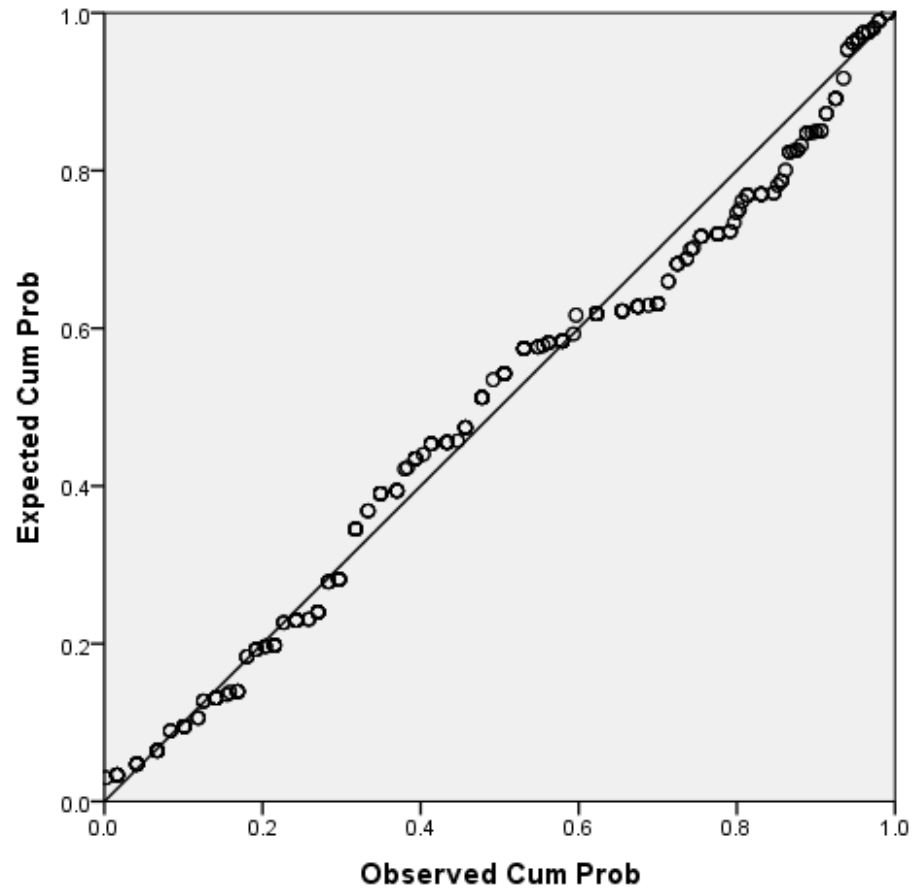
Source: Research Data

Figure 4.2: Normal P-P Plot of Value Effect



Source: Research Data

Figure 4.3: Normal P-P Plot of Stock Returns



Source: Research Data

4.3 Test for Linearity

Multicollinearity may exist when the independent variables are extremely inter-associated or inter-correlated. This can cause disturbance in the data, and therefore making the statistical inferences to be made on data not to be reliable. Multicollinearity problem may occur when the tolerance of a given variable is less than 0.20 or 0.10. Likewise, this problem can be reported when a construct reports a Variance Inflation Factor (VIF) value of 5 or 10 and above (Robinson, Brown & Currie, 2009). The results provided in Table 4.1

below show that the independent variables of this study reported tolerance value 0.993 for both momentum and value effect. Similarly, the VIF for both variables was found to be same (1.007). This could be interpreted to mean that momentum effect as well as value were not highly correlated and therefore fit for further analysis.

Table 4.1: Collinearity Statistics

Model		Collinearity Statistics	
		Tolerance	VIF
1	Momentum Effect	0.993	1.007
	Value Effect	0.993	1.007
a. Dependent Variable: Stock returns			

Source: Research Data

4.4 Descriptive Statistics

The study established the magnitude of the entire items used in computations of variables data ratios. This included stock returns, momentum effect, as well as value effect. The results show that in the range of a ten year period under investigation (2009 ó 2018), the average annual stock returns was 288,194.69 with minimum being 7,204.00 and maximum of 888,600.00. The aspect of momentum effect reported a minimum value of -2.10, a maximum value of 9.30 and a mean value of 1.85. This could imply that the rate of speed at which the security's price or volume change in the period under study was found to 1.85. In addition, the ratio of value effect ranged from 1.02 to 37.82 with an average of 2.81. The presence of low value effect can be interpreted to mean that the market value earned over a portfolio of growth stocks as indicated in Table 4.2.

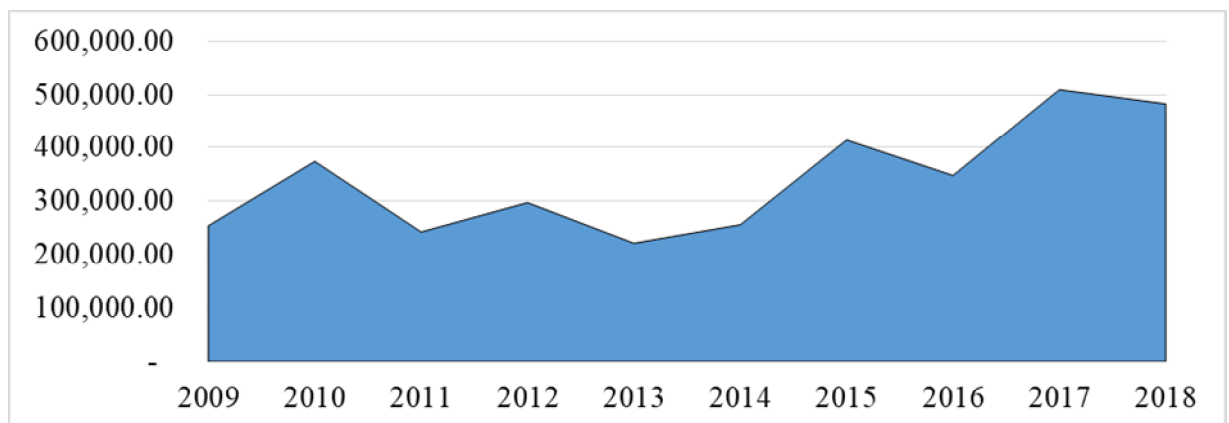
Table 4.2: Descriptive Statistics of Study Variables

Items	N	Minimum	Maximum	Mean	Std. Deviation
Stock returns	600	7,204.00	888,600.00	288,194.69	209593.52
Momentum effect	600	-2.10	9.30	1.85	2.10
Value effect	600	1.02	37.82	2.81	3.28

Source: Research Data

Figure 4.4 is an illustration of how stock of Nairobi Securities Exchange has developed throughout the ten year period under study ranging from 2009 to 2018. The depiction shows that the stock returns varied over different years. It can be construed that in the years 2009, 2011, 2013, 2014, 2016 and 2018, the study reported fall in stock returns of Nairobi Securities Exchange. On the other hand, stock returns of NSE were reported to have gone up in a number of years namely, 2010, 2012, 2015 as well as 2017.

Figure 4.4: Distribution of Stock Returns of NSE (2009 – 2018)



Source: Research Data

4.5 Correlation Statistics

Pearson correlation method of analysis was used in this study in estimating the degree of association that existed between the variables under study. Correlation coefficient (r) was provided and the test for significance was based on p values, where the study used a confidence interval of 95%. Therefore, correlation results could be considered significant if the p value ≤ 0.05 and to be insignificant if otherwise (>0.05).

The correlation results given in Table 4.3 show that momentum effect has a positive association towards stock returns of companies listed on NSE given an r value of 0.165 and p - value of 0.000. This can also be interpreted to mean that an increase in rate of change in momentum effect is statistically associated with 16.5% increase in change of stock returns. The results further show that the ratio of value effect is significantly associated with improvement of stock returns among the listed firms since the relationship provided an r value of 0.354 and an acceptable p - value of 0.000. This has an implication that both momentum and value effect contribute to prediction of stock market.

Table 4.3: Results of Correlation Analysis

		Stock returns	Momentum Effect	Value Effect
Stock returns	Pearson Correlation	1	-0.165**	0.354**
	Sig. (2-tailed)		0.000	0.000
	N	600	600	600
Momentum Effect	Pearson Correlation	0.165**	1	0.086*
	Sig. (2-tailed)	0.000		0.035
	N	600	600	600
Value Effect	Pearson Correlation	0.354**	0.086*	1
	Sig. (2-tailed)	0.000	0.035	
	N	600	600	600

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

4.6 Regression Results

The study further carried out regression analysis to estimate the effect between variables. The results on model summary was determined based on the R squared, F test and p value (Sig) in the Analysis of Variance (ANOVA) output were used to establish the joint significance of all predictor variables on dependent variable. Moreover, the regression model provided the coefficients of variables together with t tests and p values which were used as a measure of significance level of coefficients of each independent variable

on dependent variable. This done based on confidence interval of 95% where the p óvalue was ≤ 0.05 indicated significant effect and when p ó value was found to be >0.05 indicated insignificant effect as advocated by Kendall and Gibbons (1990) and Krijnen (2004).

4.6.1 The Relationship Between Momentum Effect and Stock Returns

The aim of the first objective was to estimate the relationship between momentum effect and predictability of stock returns at the Nairobi Securities Exchange. This was done through use of a regression equation that follows:

$$R = \alpha + \beta_1 ME + \epsilon$$

Where: R represented stock returns, α was for regression constant, ME meant momentum effect, β_1 denoted regression coefficient for ME, while ϵ was for error term.

Model Summary

The study's regression model provided a model summary an R value of 0.165 and an R ó squared value of 0.027 as shown in Table 4.4. This could imply that momentum effect has ability of explaining only 2.7% of variation in predictability of stock returns.

Table 4.4: Summary of the Regression Model

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.165 ^a	0.027	0.026	201267.40935

a. Predictors: (Constant), Momentum Effect

Analysis of Variance

Table 4.5 provided evidence on results of ANOVA where the model gave a regression sum square of 676287704861.96 with the same mean value and a slightly higher residual sum square of 24224124899496.41 with a mean score of 40508570066.05. With an F – value of 16.70 and a p – value 0.000 is an indication that the study rejects any null hypothesis that moment effect does not predict stock returns since the error we make by doing so is <0.05 .

Table 4.5: ANOVA Results

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	676287704861.96	1	676287704861.96	16.70	.000 ^b
	Residual	24224124899496.41	598	40508570066.05		
	Total	24900412604358.37	599			

a. Dependent Variable: Stock returns

b. Predictors: (Constant), Momentum Effect

Regression Coefficient

The results on regression coefficients provided in Table 4.6 show that momentum affects stock returns significantly given that it has a beta value of 15476.68 (t – value of 4.09) and a significant p – value of 0.000. This could imply that moment effect predicts stock returns of Nairobi Securities Exchange by 15476.68.

Table 4.6: Results of Regression Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
1 (Constant)	282741.63	10829.97		26.11	.000	261472.23	304011.04
Momentum Effect	15476.68	3787.79	0.16	4.09	.000	22915.66	8037.70

a. Dependent Variable: Stock returns

4.6.2 The Relationship Between Value Effect and Stock Returns

The second objective was to determine the value effect on predictability of stock returns at the Nairobi Securities Exchange. The regression analysis was done guided by the following equation:

$$R = \alpha + \beta_1 VE + \epsilon$$

Where: R represented stock returns, α was for regression constant, VE was a representation of value effect, β_1 stood for regression coefficient for VE , while ϵ was for error term.

Model Summary

The regression model summary on prediction of relationship between value effect and stock returns given in Table 4.7 revealed an R value of 0.201. The goodness of fit gave an R^2 value of 0.040 and indication that value effect has ability of explaining only 4% of variation in predictability of stock returns. This could further mean that there exist other factors which can predict stock returns but are not in the current model.

Table 4.7: Summary of the Regression Model

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.201 ^a	0.040	0.039	199883.89

a. Predictors: (Constant), Value Effect (VE)

Analysis of Variance

The output in Table 4.8 show that the regression model gave a sum square of regression of 1008177794704.41 with the same regression mean value. The ANOVA results further gave a residual sum square of 23892234809653.95 accompanied by a mean value of 39953569915.81. Moreover, the model's F value is 25.23 supported by a strong p value of <0.05 which could be interpreted to mean that the study should reject the null hypothesis that value effect does not predict stock returns of Nairobi Securities Exchange as the error we make by doing so is zero.

Table 4.8: ANOVA Results

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	1008177794704.41	1	1008177794704.41	25.23	.000 ^b
Residual	23892234809653.95	598	39953569915.81		
Total	24900412604358.37	599			

a. Dependent Variable: R ó Stock returns

b. Predictors: (Constant), Value Effect

Regression Coefficient

In the third stage of the model the results on regression coefficients are given. It can be deduced that value effect has a beta value of 12506.87 support by a t ó value of 5.02 and a significant p – value of 0.000. The results could imply that an increase in value effect increase chances of stock prediction by a margin of 12506.87.

Table 4.9: Results of Regression Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
1 (Constant)	218646.71	10764.88		20.31	0.000	197505.15	239788.27
Value Effect	12506.87	2489.76	0.20	5.02	0.000	7617.13	17396.61

a. Dependent Variable: Stock returns

4.6.3 The Joint Relationship Between Momentum Effect and Value Effect on Predictability of Stock Returns at the Nairobi Securities Exchange

The main aim of the research project was to establish the relationship of momentum effect and value effect on predictability of stock returns at the Nairobi securities exchange. This was done through a regression model with the guide of the equation indicated below:

$$R = \alpha + \beta_1 ME + \beta_2 VE + \epsilon$$

Where: R represented stock returns, α was for regression constant, ME meant momentum effect, VE was a representation of value effect, β_1 denoted regression coefficient for ME, β_2 stood for regression coefficient for VE, while ϵ was for error term.

Summary of Regression Model

The summary results given in Table 4.4 indicate that the regression model provided a combined correlation R -value of 0.404 and an R squared value of 0.364. This indicates that momentum effect and value effect put together, have ability of explaining 36.4% of change in stock returns.

Table 4.10: Summary of the Regression Model

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.404 ^a	0.364	0.361	192007.76786

a. Predictors: (Constant), Value Effect, Momentum Effect

Results on Analysis of Variance

The output of ANOVA shown in Table 4.5 gave a regression sum square of 4304149576674.91 and a slightly higher residual sum square of 22009588802411.27 with a mean squares of 2152074788337.46 for regression and 36866982918.61 for residual. The model further provided an F statistics of 58.37 and a significant p - value of 0.000. This has implication that the independent variables used in this study were acceptable and fit in determining the dependent variable and therefore an indication that the study should reject any null hypothesis that momentum effect and value effect jointly, do not predict stock returns of firm listed on Nairobi Securities Exchange.

Table 4.11: ANOVA Results

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	4304149576674.91	2	2152074788337.46	58.37	0.000 ^b
Residual	22009588802411.27	597	36866982918.61		
Total	26313738379086.18	599			

a. Dependent Variable: Stock returns

b. Predictors: (Constant), Value Effect, Momentum Effect

Results of Regression Coefficients

The model further gave estimations on the effect of individual predictor variable under investigation on the dependent variable. The findings of the regression coefficients shown in Table 4.6 revealed that momentum effect significantly influence prediction of stock returns of companies listed on Nairobi Securities Exchange, this is so because the variable provided a positive beta value of 19650.92 accompanied by a strong t value of 5.24 supported by significant value (p value) of 0.000.

Likewise, the results show that a change in value stock increase chances of predicting stock returns of listed firms positively given a coefficient value of 23670.78 ($t = 9.86$) ($p = 0.000$). This could therefore imply that both momentum and value effect have ability of predicting stock returns of Nairobi Securities Exchange. The study findings are both supported and contrary to other researches done based on global, regional and local context. For instance, the results are in agreement with that of Arindam, et. al. (2018) who established that stock market returns can be predicted by risk premium, momentum and

value effect within stock market in India. Moreso, a study carried out by Otinga (2017) found out that momentum returns predicted the stock companies listed on NSE.

Table 4.12: Results of Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
		(Constant)	257925.92	12143.375				21.24
1	Momentum Effect	19650.92	3744.993	0.197	5.24	0.000	27005.89	12295.96
	Value Effect	23670.78	2400.287	0.371	9.86	0.000	18956.75	28384.81

a. Dependent Variable: Stock returns

On the other hand, the findings of this study were found to be contrary to that of Cao (2015) who carried out study determining the influence of the momentum effect in the UK stock market and established that stock market volatility had a negative impact on a momentum trading strategy's return. Another study which seem to have a contradictory results is that of Bartens and Hassan (2011) whose findings revealed that real-time trading strategies based on size, value and momentum effects was not able to consistently outperform a passive index of South African stocks.

CHAPTER FIVE: SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the study's summary of the key findings based on analytical methods used. Conclusions are also made with focus on the results of the research as well as recommendations are made which can be considered and put in practice by the relevant authorities.

5.2 Summary of Study Findings

The main goal of this research was to determine the effect of momentum, value effect on predictability of stock returns on the Nairobi securities exchange. Specifically, the study sought to examine momentum effect on predictability of stock returns at the Nairobi Securities Exchange, and determine the value effect on predictability of stock returns at the Nairobi Securities Exchange.

The findings on correlation statistics revealed that all the predictor variables used in this study namely, momentum effect and value effect were found to be statistically associated to prediction of stock returns. The regression results on estimation of the relationship between momentum effect and predictability of stock returns at the Nairobi Securities Exchange revealed a regression model summary with an R value of 0.165 and an R^2 value of 0.027. This model further provided an F value of 16.70 and a p value 0.000 which indicated that the study rejected the null hypothesis that momentum effect does not predict stock returns since the error we make by doing so is <0.05 . Momentum

effect was found to have a significant effect on prediction of stock returns given that it has a beta value of 15476.68 (t value of 4.09) and a significant p value of 0.000.

To determine the relationship between the value effect on predictability of stock returns at the Nairobi Securities Exchange, the regression model summary provided an R value of 0.201. The goodness of fit gave an R^2 value of 0.040 which implied that value effect has ability of explaining only 4% of variation in predictability of stock returns. The ANOVA results of the model gave an F value of 25.23 supported by a strong p value of <0.05 which could be interpreted to mean that the study was able to reject the null hypothesis that value effect does not predict stock returns of Nairobi Securities Exchange as the error we make by doing so is zero. In addition, its regression coefficient revealed in this model indicated that value effect had a beta value of 12506.87 supported by a t value of 5.02 and a significant p value of 0.000.

Regression analysis indicated that the two aspects used in this model to test prediction of stock returns namely momentum effect and value effect combined had ability of explaining 36.4% of change in prediction of stock returns. The model gave an F value of 58.37 ($p = 0.000$), which implied that the momentum and value effect were significant in predicting stock market of firms on NSE. This therefore indicated that the null hypothesis that momentum effect and value effect do not predict stock returns of firm listed on Nairobi Securities Exchange should be rejected since the error we make by doing so is zero.

The findings further revealed that both momentum and value effect were able to predict stock returns of Nairobi Securities Exchange. It was revealed that momentum effect

significantly impacted prediction of stock returns of companies listed on Nairobi Securities Exchange, this was so due to the fact that the variable provided a positive beta value of 19650.92 accompanied by a strong t value of 5.24 supported by significant value (p value) of 0.000. Ultimately, the findings on regression coefficients indicated that a change in value stock increased chances of predicting stock returns of listed firms positively given a coefficient value of 23670.78 ($t = 9.86$) $p = 0.000$).

5.3 Conclusion and Recommendations

The findings of the study established that momentum effect is one of the key variables in predicting stock returns of firm listed on NSE. The aspect of momentum is essential on decisions made before investing and trading on stock market. This helps both the existing and potential investors in observing the tendency in the rise and fall of asset prices. The momentum effect is determined by change in prices of stock within a particular period of time based on other stocks. Therefore, the study recommends that the traders willing to invest in shares at stock market should follow some viable strategies in order to grow their investments. Alternatively, they should consult most reputable advisory firms or stock analysts for further support and advice on the same.

The value effect was also found to influence the prediction of stock returns. The strength of value effect normally varies from one sector or company to another, where by some are found to have strong value and other seem to have weak value effect in stock market. The value effect is comprised of the outperformed stock value characterized by low prices relative to dividends, earnings, book assets or any other measure of fundamental value that lead to growth in stock returns with higher price ratios. The study recommends

that companies should ensure that they put in proper strategies to enable them have consistency growth their market value. Potential investors or traders are advised to study and analyze the trends of value effect of companies on stock market before trading with them.

5.6 Suggestion for Further Research

This research focused on determining the influence of momentum, value effect on predictability of stock returns on the Nairobi securities exchange. The research focused on the following variables: momentum effect and value effect as independent, and stock returns as dependent. The study therefore, suggests that a similar research should be done based on different variables other than those used in this study to establish how stock returns would be predicted.

REFERENCES

- Agathe, S. (2012). Momentum strategies on the stock exchange of Mauritius. *African Journal of Economic and Management Studies* 3(2), 227-239.
- Akintoye, I. R. (2008). Efficient Market Hypothesis & behavioral finance. A review of Literature. *European Journal of social sciences volume 7 No.2*, 8-12.
- Ansari, V. A., & Khan, S. (2012). Momentum anomaly: evidence from India. *Managerial finance* (38)2, 206-223.
- Arindam, B., Anupam, D., & Gautam, B. (2018). Momentum effect, Value effect, Risk premium and predictability of stock returns. *Asian Economic and Financial Review*, 670.
- Arkelof, George, E., & Shiller, R. J. (2009). *Animal spirits: How human psychology drives the economy and why it matters for global capitalism*. Princeton University Press.
- Azerdo, M. (2015). The Value and Momentum Effect on the Portuguese Stock Market. *U.PORTO*, 9-10.
- Baker, K. H. (2010). *Behavioral Finance: Investor Corporations & Markets*. New Jersey: Wiley & Sons.
- Ball, R. (1978). Anomalies in relationships between securities "Yields and Yield Surrogates". *Journal of Financial Economics*, 103-126.

- Barberis, Nicholas, & Thaler, R. (2003). *A survey of behavioral finance*. In *financial markets and asset pricing*. Amsterdam: Milton Harris.
- Bartens, R., & Hassan, S. (2010). Value, size and momentum portfolios in real time: the cross section of South African stocks. *Australian Journal of Management*, 35(2), 181-202.
- Basu, S. (1977). Investment performance of common stocks in relation to their price earnings ratio: A test of Efficient Hypothesis. *The Journal of AMERICAN FINANCE ASSOCIATION*, 6-9.
- Bollen, J., Mao, H., & Zeng. (2011). Twitter mood predicts the stock market. *Journal of computational science* 2(1), 1-8.
- Borges, M. R. (2010). Efficient market hypothesis in European stock markets. *The European Journal of Finance*, 711-726.
- Brealey, R. A., Myers, S. C., & Allen, F. (2011). *Principles of Corporate Finance*. New York: Mc Graw-Hill/Irwin.
- Bryman, A., & Bell, E. (2011). *Business Research Methods*. UK: Oxford Text Books.
- Budoo, S. k. (2011). An Analysis of Stock market anomalies and momentum strategies on the stock exchange of Mauritius. *AERC Research paper* 227, 10-14.

- Bugul, C., & Brorsen, B. (2003). Testing Weak form market efficiency: Evidence from the Instabul Stock Exchange. *International review of finance analysis Vol.12*, 579-590.
- Chan, K., Hamao, Y., & Lakonishok, J. (1991). Fundamentals and stock returns in Japan. *Journal of Finance* 52(1), 1739-1764.
- Chan, L. K., & Chen, N. (1991). Structural & return characteristics of small & large firms. *Journal of Finance* , 1467-1484.
- Chen, S. S. (2012). Revisiting the empirical linkages between stock returns and trading volume. *Journal of Banking and Finance*,36(6), 1781-1788.
- De Gennes, P. G. (2018). *Superconductivity of metals and alloys*. CRC Press.
- Degutis, A., & Navickyte, L. (2014). The Efficient Market Hypothesis ; A critical Review of Literature & Methodology ISSN 1392-1258. *EKONOMIKA 2014 VOL.93(2)*, 8-14.
- Fama, E. F., & French, K. R. (1988). Permanent and Temporary components of stock prices. *The Journal of Political Economy*, 96(2), 246-273.
- Fama, E. (1970). Efficient Capital Markets: a review of theory and empirical work. *Journal of Finance* 25, 387-417.
- Fama, E. F., & French, K. R. (1993). Common risk factors in the returns of stock and bonds. *Journal of finance Economics*, 33-56.

- Girard, E., & Omran, M. (2009). On the relationship between trading volume and stock price volatility in CASE. *International Journal of Managerial Finance*,5(1), 110-134.
- Glaser, Marcus, Thomas, L., Jens, R., & Martin, W. (2007). Framing Effects in stock market forecasts: The difference between asking for prices and asking for returns. *Review of Finance* 11:2, 325-357.
- Graham, B., & Dodd, D. L. (1965). *The Intelligent Investor*. New York: Harper Row.
- Hameed, A., & Kusnadi, Y. (2002). Momentum strategies: Evidence from Pacific Basin stock markets. *Journal of Financial Research*,25(3), 383-397.
- Hameed, A., & Kusnadi, Y. (n.d.). Momentum strategies: Evidence from Pacific Basin stock markets. *Journal of Finance Research* 90.
- Bunescu, L. (2014). The impact of external debt on exchange rate variation in Romania. *Economics & Sociology*, 7(3), 104.
- Horne, V., C, J., & Parker, C. (1965). The Random walk theory: an empirical test . *Financial Analysis Journal*;23, 87-92.
- Jegadeesh N, T. S. (1993). Profitability of momentum strategies. *Evaluation of Alternative Explanations*, 50-73.
- Jegadeesh, N., & Titman, S. (1993). Profitability of Momentum Strategies. *An Evaluation of Alternative Explanations*, 50-71.

- Jegadeesh, N., & Titman, S. (2001). Profitability of momentum strategies: An evaluation of alternative explanations. *Journal of Finance Vol 56 no.2*, 699-720.
- Jegadeesh, N., & Titman, S. (2001). Profitability of momentum strategies: An evaluation of alternative explanatios. *Journal of Finance*, 699-720.
- Jarret, J. E. (2008). Random walk,capital market efficiency and predicting stock returns for Hong Kong Exchanges and clearing Limited. *Management Research News*, (31) 2, 142-148.
- Jensen, M. C., & Mecklin, W. H. (1976). Theory of the Firm:managerial behaviour, agency costs and ownership structure. *Journal of Financial Economics*, 3(4), 305-360.
- Jureviciene, D., & Diga, I. (2013). Behavioral Finance: Theory & Survey. 20-28.
- Kahneman, D., & Tversky, A. (1979). Prospect Theory, analysis of decision under risk economics. 263-292.
- Kendal, M. (1953). The analysis of Economic Time Series. *Journal of the Royal Statistical Society;116*, 219-234.
- Kim, D. (1995). The error in the variables problem in the cross section of expected stock returns. *Journal of Finance 50(5)*, 1605-1634.
- Kothari, C. R. (2004). *Research Methodology: Methods and Techniques*. New Age International.

- Kuria, M. A., & Riro, G. K. (2013). Stock market anomalies: A study of seasonal Effects on Average returns of NSE. *Research Journal of Finance and Accounting*, 4(7), 207-216.
- Lishenga, L. (2011). An Empirical analysis of Risk and Size factors in Momentum Profitability at the NSE. *Operation Research Society of East Africa*.
- Ljung, C., & Svedberg, M. (2018). A study of momentum effects on the Swedish stock market using Time Series REgression. *Degree project in Technology*, 20-27.
- Lakonishok, J., Chopra, N., & Ritter, J. R. (1992). Measuring abnormal performance: do stocks overreact? *Journal of Financial Economics*, 235-268.
- Malkiel, B. G. (2003). The Efficient Market Hypothesis and its critics. *Journal of Economic perspectives-volume 17 no.1*, 59-82.
- Mboya, J. K., & Ndegwa, J. N. (2015). Testing of consistent Trends in Stock performance in the Nairobi Securities Exchange. 212-221.
- Mugenda, O., & Mugenda, A. (2003). *Research Methods Quantitative and Qualitative Approaches*. Nairobi: Nairobi Acts Press.
- Nicholson, S. F. (1960). Price Earnings Ratio. *Financial Analyst Journal*, 43-50.
- Okpara, G. C. (2010). Stock market prices and the random walk hypothesis: Further evidence from Nigeria. *Journal of Economics and International Finance*, 2(3), 49-57.

- Onyuma, S. O. (2011). Day of the week and month of the year effect on the Kenyan Stock market returns. *Eastern Africa Social Science Research Review*, volume 25, 54-60.
- Otinga, N. K. (2017). Effect of price volume momentum on stock returns at the Nairobi Securities Exchange. *Electronic Thesis and Dissertations*, 7-20.
- Pandey , A. (2011). Mutual Fund Industry- Analysis of recent trends. *Asia Pacific Business Review* vol.7, 60-73.
- Rouwenhorst, K. G. (1998). International momentum strategies. *Journal of Finance* (53)1, 267-284.
- S, K. B. (January 2011). Analysis of stock market anomalies and momentum strategies on the stock exchange of Mauritius. *AERC Research paper* 227, 10-14.
- Schnusenberg, O., & Madura , J. (2001). Do U.S stock market indexes over or underreact? 179-204.
- Schwert, W. (2003). Anomalies & market efficiency. *Handbook of the Economic of Finance*, 939-974.
- Sehgal, S., & Vasishth, V. (2015). Past price changes, trading volume and prediction of portfolio returns. *Journal of Advances in Management Research* 8(1), 99-122.
- Sharpe, W. F. (1964). Capital Asset Prices: A theory of market equilibrium under conditions of risk. *Journal of Finance* 19, 425-442.

Stanivuk, Skarica, & Tokic. (2012). The analysis of predictability of share price changes using the momentum model. Croatian Operational Research Review, 256-268.

Zaremba, A. (2018). The momentum Effect in County-level stock market anomalies. Economic Research, 1-5.

Appendix 1 – List of Firms Listed at NSE

COMPANY	SUMBOL	SECTOR
1. BOC Kenya materials	BOC	Basic
2. Bamburi Cement	BAMB	Industrials
3. Bamburi Bank of Kenya	BBK	Financials
4. BK Group	BKG	Financials
5. Britam (Kenya)	BRIT	Financials
6. BAT (Kenya) goods	BATK	Consumer
7. Carbacid Investments Materials	CARB	Basic
8. Cars & General Goods	CG	Consumer
9. Centum Investments	ICDC	Financials
10. CIC Insurance Groups	CIC	Financials
11. Co-operative Bank Of Kenya	COOP	Financials
12. Crown Paints Kenya Materials	BERG	Basic
13. Diamond Trust Bank Kenya	DTK	Financials
14. Eagads Goods	EGAD	Consumer
15. East African Breweries Goods	EABL	Consumer
16. East African Cables	CABL	Industries
17. East African Portland Cement	EAPC	Industrials
18. Equity Group Holdings	EQT	Financials
19. Eveready East African Goods	EVRD	Consumer
20. Express Kenya Services	XPRS	Consumer
21. Flame Tree Group Holdings Materials	FTGH	Basic
22. HF Group	HFCK	Financials
23. Home Africa	HAFR	Financials
24. I&M Holdings	IM	Financials
25. Jubilee Holdings	JUB	Financials
26. Kakuzi Goods	KUKZ	Consumer

27. Kapchorua Tea Kenya Goods	KAPC	Consumer
28. KCB Group	KCB	Financial
29. Kengen Company	KEGN	Utilities
30. Kenya Airways Services	KQ	Consumer
31. Kenya Orchards Services	ORCH	Consumer
32. Kenya Power & Lighting	KPLC	Utilities
33. Kenya Re-Insurance Corporations	KNRE	Financials
34. Kurwitu Ventures	KURV	Financials
35. Liberty Kenya Holdings	CFCI	Financials
36. Limuru Tea Goods	LIMT	Consumer
37. Longhorn Publishers Goods	LKL	Consumer
38. Mumias Sugar Company Goods	MSC	Consumer
39. Nairobi Business Ventures Goods	NBV	Consumer
40. Nairobi Securities Exchange	NSE	Financials
41. Nation Media Group Services	NMG	Consumer
42. National Bank of Kenya	NBK	Financials
43. NIC Group	NICB	Financials
44. Olympia Capital Holdings	OCH	Industrials
45. Safaricom Telecommunications	SCOM	
46. Sameer Africa Goods	FIRE	Consumer
47. Sanlam Kenya	PAFR	Financials
48. Sasini Goods	SASN	Consumer
49. Stanbic Holdings	CFC	Financials
50. Standard Chartered Bank Kenya	SCBK	Financials
51. Standard Group Services	SGL	Consumer
52. Stanlib Fahari I-REIT	FAHR	Financial
53. Total Kenya	TOTL	Oil & Gas
54. TPS Eastern Africa Services	TPSE	Consumer

55. Trans Century	TCL	Industrials
56. Uchumi Supermarkets Services	UCHM	Consumer
57. Umeme	UMME	Utilities
58. Unga Group Goods	UNGA	Consumer
59. Williamson Tea Kenya Goods	WTK	Consumer
60. WPP Scangroup Goods	SCAN	Consumer

Companies Delisted/Suspended

1. ARM Cement
2. Deacons
3. Kenol Kobil
4. Atlas

Source.....NSE database (2019)