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NEGLECTED FIRM EFFECT AND STOCK RETURNS AT THE NAIROBI SECURITIES EXCHANGE

CHRISPINUS IBALAI
JOAB OOKO
DR. MERCY FLORAH OLUOCH
DR. JOSHUA WANJARE
UNIVERSITY OF NAIROBI

ABSTRACT

Market analysts tend to ignore lesser-known firms because of information deficiency and low liquidity. The objective of this study was to investigate the existence of the neglected firm effect at the Nairobi Securities Exchange and it covered a period of six years from, 2010 to 2015. Three portfolios namely, the popular, normal and neglected were formed on the basis of the monthly trading volumes for firms listed at the NSE. The daily share prices and market index from the NSE were used in determining the actual returns, expected returns and abnormal returns. The results of the study indicated that the popular portfolio earned an average annual abnormal return of 4.48 percent to 3.01 percent earned by the neglected portfolios and thus this study concludes that the neglected firm effect does not exist at the NSE.

KEY WORDS: Arbitrage Pricing Model, Capital Asset Pricing Model, Central Depository and Settlement Corporation, Capital Markets Authority, Efficient Market Hypothesis, Initial Public Offering, London Stock Exchange, Nairobi Securities Exchange

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Market anomalies are empirical results that are inconsistent with the Efficient Market Hypothesis (Silver, 2011). Fama (1970) found out that in an efficient market, the prices of securities reflect publicly available information. This study sought to find out if the

neglected firm effect exists at the NSE. This anomaly explains why lesser-known firms tend to generate higher returns on a risk adjusted basis on their securities than well-known firms. Market analysts and large institutional traders tend to neglect these firms due to information deficiency and low liquidity (Arbel and Strebel, 1982). Whereas some previous studies suggest that investors can earn abnormal returns if they focus their holdings on stocks that market analysts tend to ignore due to information deficiency and low liquidity, other studies have shown evidence that the neglected firm effect does not exist in some of the capital markets across the world.

This study was anchored on the theories of EMH which was espoused by Fama in the 1970s, the Capital Asset Pricing Model (CAPM) and behavioral Finance. The EMH is about securities' prices reflecting publicly available information and as such not able to earn abnormal returns even after conducting technical and fundamental analysis. Behavioral finance on the other hand is about behavioral biases and investors exhibiting certain irrationalities that makes them either process information incorrectly or make sub optimal decisions. Finally, the study was based on the theory of CAPM which was developed by Sharpe (1964). It is an asset pricing model used for estimating, predicting and measuring risk and it shows the relationship between expected return and risk.

The NSE is the sole bourse in Kenya and it is the leading organized securities exchange in Eastern and Central Africa. It offers a platform for listing and trading of securities. It provided the much needed data on stock prices, the market indices and other related information for all the listed companies and as such it was vital for this study.

1.1.1 Neglected Firm Effect

This market anomaly states that market analysts have a tendency of neglecting less known firms at the expense of large sized companies due to information deficiency and low liquidity and as such the former earn on a risk adjusted basis abnormal returns (Arbel and Strebel, 1983). The high abnormal returns exhibited by neglected firms may be either due to the higher risks or limited information associated with them.

Beard and Sias (1997) and Merton (1987) also found out that securities that market analysts ignored earned higher returns than securities the analysts followed and scrutinized a lot more. Amihud and Mendelsohn (1991) showed that less liquid securities exhibited a propensity to earn abnormally high risk adjusted rates of return because investors demanded for a rate of return premium to compensate them for the higher risks associated with such stocks. Carvell and Strebel (1987) found out that the neglected firm effect was not related to the small firm effect and even after controlling for the small firm effect and the January effect, they still found out that the phenomenon still persisted.

1.1.2 Stock Return

A stock return is always quoted as a percentage and it is a gain or a loss arising from investing in a security for a particular period of time (Gartner, 1995). We can use models such as Capital Asset Pricing Model (CAPM), Arbitrage Pricing Theory (APT) and the

Three Factor Model by Fama and French (1993) to determine the stock's rate of return. Abnormal returns are determined by subtracting expected returns from actual returns.

1.1.3 Neglected Firm Effect and Stock Return

Neglected firm effect is a market anomaly in which small-sized firms tend to outperform well known or large-sized firms. The market analysts tend to ignore these firms due to limited information about them and lower liquidity. Findings of past studies conducted in various capital markets across the world have either shown evidence of the existence of this anomaly or not. Neglected firms are deemed to earn higher abnormal returns than highly researched firms by market analysts. Studies by Arbel et al (1983), Carvell and Strebel (1987), Bertin et al (2008) and Elfakhan and Zahar (1998) indicated that less followed or researched firms outperformed highly followed firms by market analysts.

1.1.4 Behavioral Finance

Conventional finance has always ignored how people make decisions and to what extent it affects them. Studies on behavioral finance are on the rise owing to the fact that individuals exhibit several irrationalities, for instance, they sometimes process information incorrectly and thus make sub optimal decisions. Errors in processing information can make the capital markets' players underestimate or overestimate the true probabilities of possible rates of return (DeBondt and Thaler, 1990). These errors include forecasting errors, overconfidence, conservatism and sample size neglect.

Behavioral biases affect how investors perceive risks and returns of securities. Framing of choices may affect how individuals make decisions, for example, some individuals may avoid risks whereas others may loath risks (Kahneman and Tversky, 1979). Sometimes investors may go for stocks with high cash dividends and avoid the losing ones. These biases explains why, for instance, market analysts can opt to follow some stocks and tend to ignore others either because they are less liquid or information about them is limited and thus the theory of neglected firm effect.

1.1.5 Efficient Market Hypothesis

The EMH states that securities will always reflect publicly available information and, therefore, by trying to conduct a technical or fundamental analysis in an attempt to beat the market would result into nothing but wasted time (Fama, 1970). Whereas we have the weak form, the semi strong form and strong form of EMH, this study was based on the semi strong form of EMH which asserts that prices of securities reflect all publicly available information regarding the prospects of the firm. Such information may include the firm's product line, calibre of management and dividends announcements among others. The EMH is as good as the random walk theory which states that changes in stock prices should be random and unpredictable.

1.1.6 Nairobi Securities Exchange (NSE)

Nairobi Securities Exchange (NSE) is the only principal bourse in Kenya, offering a platform for the listing and trading of securities. It has gone through a lot of transformation over the years for example; it began dealing in securities in the early 1920s when trading took place on a 'gentleman's agreement' with no physical trading floor. At the time it did not have formal rules and regulations to guide its operations and dealings.

In July, 1953 the London Stock Exchange (LSE) through its officials saw it necessary to set up the Nairobi Stock Exchange. During this time, it was only the resident European community that was allowed to deal with securities while the Africans and Asians were excluded. When Kenya attained its independence in 1963, this changed and the NSE became a capital market for all.

In 1988 the Government of Kenya disposed off a twenty percent government stake in Kenya Commercial Bank Ltd to the public as a step towards privatization of the bank. The other 80 percent was left to the Government of Kenya.

Electronic trading commenced in September, 2006. This saw an increase in trading hours and enhanced efficiency at the bourse. In July, 2007, the NSE reviewed its Market Index and made an announcement of the firms that would constitute the NSE Share Index.

In 2008, the NSE All Share Index (NASI) was introduced as an alternative index and later in November, 2009, the NSE started the automated trading in government bonds through the Automated Trading System.

The Capital Markets Authority (CMA) approved the listing of the NSE stock through an Initial Public Offering (IPO) on 27th June, 2014 and later it self-listed its shares on the Main Investment Market Segment. This saw the NSE become the second bourse to self-list in Africa.

The NSE provides an avenue for investment by investors. Given that it is an emerging market that has witnessed tremendous progress over the years, it is imperative that the Government of Kenya through the regulator and other actors should continue to enact laws, invest in information technology and enforce rules and regulations to make the NSE more efficient. There is, therefore, need to conduct studies to determine whether the theory of EMH holds or not and thus the basis of this study.

1.2 Research Problem

The EMH indicates that prices of securities reflect publicly available information and, therefore, it is not possible to beat the market (Fama 1970). The market anomalies such as neglected firm effect imply market inefficiency.

The NSE comprises of various actors such as the Capital Markets Authority (CMA), the government, individual and institutional investors, brokerage firms and market analysts. From time to time, these actors are bound to engage in illegal activities such as insider trading, make errors or sub optimal decisions which brings about mispricing of securities.

The mispricing of securities at the NSE could also be as a result of behavioral biases such as mental accounting, the limits to arbitrage, and investors' misperception. For example, when Safaricom Ltd and KenGen went public, the NSE witnessed a rush by investors to buy shares of these companies which was a clear indication of market overreactions. These examples among others continue to raise concerns as to the efficiency of the capital markets including the NSE.

Several studies have shown varied findings regarding the neglected firm effect. Arbel et al (1983), for example, conducted a study during the period 1971-1980 with a sample of 510 firms drawn from New York Securities Exchange (NYSE), the American Stock Exchange (AMEX) and over the counter markets and found out that firms ignored by market analysts outdid widely held firms. Another study by Carvell and Strebel (1987) in the United States of America during the period 1976-1982 with a sample of 2000 firms per year, found out that the neglected firm effect was not related to the small firm effect and that less followed firms offered excess returns than highly followed firms by market analysts. Elfakhan and Zaher (1998) examined 972 firms at the NYSE between the years 1986-1990 and they also found out that the neglected firm effect existed. Other studies that showed proof of the existence of the neglected firm effect were by Bertin et al (2008) in Australia.

Studies by Akkoc et al (2009) and Beard and Sias (1997) did not show evidence of the neglected firm effect at the Istanbul Stock Exchange and NYSE respectively. Locally, no study has ever been conducted to determine the existence of the neglected firm anomaly. From the review of this literature, it is clear that there is no general consensus on the existence of the neglected firm effect at the various capital markets across the world. Whereas there is evidence of the existence of the neglected effect in some of the organized securities exchanges across the world, some studies have shown otherwise. Locally, no study on the neglected firm anomaly has ever been conducted and, therefore, this study was essential in determining whether the NSE is efficient or not. However, further research is necessary to determine whether there is a relationship between the small firm effect, the January effect and neglected firm effect. This study, therefore, sought to answer the research question; is there a difference in stock returns between the neglected and highly followed firms?

1.3 Objective of the Study

The objective of this study was to determine the existence of the neglected firm anomaly at the NSE.

1.4 Value of the Study

This study will help the market analysts in formulating portfolio strategies that will enable them advise their clients on the best investments to undertake in the market with a

given level of risk. This study will also help the analysts to consider the behavioral issues while pricing securities and advising on the best investment strategies.

This study will also be beneficial to Capital Markets Authority, the NSE and stock market administrators in formulating policies geared towards developing the market including enforcement of rules and regulations to deal with malpractices such as insider trading.

The study will contribute to the world of academia by enabling researchers to focus on the research gaps of already undertaken studies on the neglected firm anomaly and thereby add knowledge to the existing theories.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter presents the literature review on the market anomalies specifically the neglected firm effect. It also addresses briefly the theories of EMH, CAPM and behavioral finance.

2.2 Theoretical Framework

The theories of Capital Asset Pricing Model, behavioral finance and the Efficient Market Hypothesis provided the basis upon which this study was conducted.

2.2.1 CAPM

CAPM is a financial model used for pricing of financial assets. It predicts the relationship between the projected return of an asset and its risk. It was first developed by Sharpe (1964) and later by Lintner (1965) and Mossin (1966). It defines risk in terms of a security's beta which measures the riskiness of a stock relative to the market as a whole. Neglected firms are deemed to earn higher abnormal returns than their large-sized peers. There is a possibility that this phenomenon could be as a result of CAPM being used inappropriately to adjust portfolio returns for risk and, therefore, we must select between refusing the risk adjustment technique and snubbing the EMH.

Whereas CAPM was a good model for determining asset prices, it faced criticism from different researchers. For example, Ross (1976) introduced the Arbitrage Pricing Model (APT) which states that a security's expected return is a function of several macro-economic influences such as inflation, industrial production, fluctuation in interest rates and risk premiums. Another critic of the CAPM was Fama and French (1993) who came up with the three factor model. They indicated that risk is determined by the sensitivity of a security to three factors that is; market portfolio, a collection of assets that mirrors returns of companies with high versus low ratios of book value to market value and a group of assets that mirrors the comparative returns of small versus big sized firms.

2.2.2 Efficient Market Hypothesis

If asset prices reflect publicly available information at any given time, then a capital market is said to be efficient in determining the prices of such financial assets. This, therefore, means that the market participants cannot profit by carrying out either a technical or fundamental analysis. Technical analysis refers to the search for recurrent and predictable patterns in securities' prices in a bid to identify a trend to be exploited or to make a profit and fundamental analysis is a technique of evaluating the value of a security by studying the company's financial statements, stock splits, dividend announcements and any other information in a bid to identify mispriced securities (Fama, 1970).

There are three levels of EMH, namely; the weak form, the semi strong and strong form of EMH. The weak form is about the current stock prices reflecting past information and as such investors cannot come up with a strategy that will enable them earn abnormal returns on the basis of an analysis of past price patterns. By trying to establish the serial correlation of stock returns, one would be identifying movements in prices of securities. Thomas and Patnaik (2002) argued that there was zero correlation as far as Nifty was concerned and a negative serial correlation at a five minute interval for the 100 individual stocks trading at the New Stock Exchange (NSE), Mumbai.

The semi strong form of EMH asserts that whereas the current prices of securities reflect publicly available information, it also reflects past information and, therefore, investors cannot earn abnormal risk-adjusted returns by conducting a fundamental analysis. Empirical results that are inconsistent and do not agree with the EMH are called market anomalies. They could arise from the faulty CAPM used to adjust portfolio returns for risk or from joint tests which refers to tests of the EMH and risk adjustment procedure. Obaidullah (1991) discovered that portfolios with high Price Earnings (PE) Ratio had lower returns than portfolios with low Price Earnings (P/E) Ratio. One possible reason behind this was that CAPM could have been faulty meaning that the adjustment of securities' returns for risk had not been done properly.

The strong form of EMH states that the current prices of securities not only reflect publicly available information but also private information and, therefore, no one can earn excess returns. Whereas insider trading is prohibited and punishable by law in many countries around the world including Kenya, Studies by Jaffe (1974) showed that insiders can profit from their dealings. Seyhun (1986) contradicted this when he found out that abnormal returns earned as a result of insider transactions were not sufficient enough to overcome transaction costs and as such was a waste of time.

2.2.3 Behavioral Finance

This field of finance is still growing given the fact that it continues to elicit research from scholars and researchers. Behavioral finance is about individuals exhibiting certain

irrationalities and biases which makes them make errors in information processing and affects their decision making abilities.

Errors such as forecasting errors, overconfidence, conservatism and sample size neglect in processing information can influence individuals to either underestimate or overestimate the exact probabilities of the likely rates of return (DeBondt and Thaler, 1990). Forecasting errors may arise when individuals assign relatively too much weight to latest events compared to old events or experiences when making decisions, for instance, a firm may ignore its historical performances and base its forecasts for future earnings on the recent performances and thus overestimating its abilities. DeBondt and Thaler (1990) argued that the Price Earnings (P/E) effect may have been explained by earnings expectations that were too high. Overconfidence arises when investors tend to overestimate their abilities. Barber and Odean (2001) found out that women did not trade more actively than men and that the heightened trading is predictive of poor investment performance. Conservatism means that investors are too conservative and may take them a long time to respond to recent happenings, for example, they may at first underreact to news pertaining a particular product. Finally, the sample size neglect refers to a situation where investors may ignore the size of the sample thinking that it is representative of the whole population.

Mental accounting is of one of the behavioral biases and it refers to a scenario where investors may either choose to make decisions and discriminate against others for instance, investors may opt to undertake highly risky investments and at the same time adopt a conservative approach on others. The appropriate way is to look at the two scenarios as part of one's portfolio by analyzing the risks and returns of each. Regret avoidance refers to the way investors make decisions in a way that allows them to avoid feeling emotional pain in the event of an unfavorable outcome, for example, an investor who invests in stocks of a blue chip company and the stocks plunge into losses would not be at a loss than had he invested in less liquid securities.

These behavioral biases and errors in information processing could explain why market analysts tend to follow some firms and neglect others on the basis of limited information and low liquidity and thus the neglected firm anomaly.

2.2.4 Neglected Firm Effect

Arbel and Strebel (1982) and Merton (1987) indicated that small-sized firms neglected by market analysts due to limited information and lower liquidity earned superior returns than well-known firms.

Beard and Sias (1997) found out that securities that market analysts ignored did not offer higher returns than securities the analysts followed and scrutinized heavily. Amihud and Mendelsohn (1991) showed that less liquid securities exhibited a tendency to earn higher returns than highly liquid securities because investors demanded for a higher rate of return as compensation for risks associated with these firms.

Carvell and Strebel (1987) found proof of the existence of the neglected firm effect but was not related to the small firm effect. However, after controlling for the both the January effect and size effect, they still found out that the neglected firm effect was still present. On the contrary, Akkoc et al (2009) did not find evidence as to the existence of the neglected firm effect at the Istanbul Stock Exchange.

Elfakhani and Zaher (1998) found out that investors earned superior returns on those financial assets that were less tracked by market analysts between the years 1986-1990. Bhardwaj and Brooks (1992a) found out that the neglected firm effect was strong in January but became weak after the share price was controlled. In the period 1977 to 1982, they showed that there was a buoyant neglected firm effect in the stocks with the lowest market capitalization and between the years 1983 to 1988, they also showed the presence of the same in the stocks with the highest market capitalization.

2.3 Empirical Review

Arbel, Carvell and Strebel (1983) studied firms listed at NYSE, the AMEX and over the counter markets with a sample of 510. The study run for a period of ten years, from 1971 to 1980. The firms were divided into three broad Institutional Concentration Rankings (ICR) according to institutional holding data published by Standard & Poor. The first grouping consisted of the securities widely held by institutions and the third grouping consisted of the institutionally neglected securities. Their findings indicated that firms abandoned by institutions outdid those commonly held by firms. This phenomenon still persisted even after controlling for the size effect.

Arbel and Strebel (1982) argued that higher returns were required on investment for which there was little available information and market analysts showed little interest. They did a study that covered five years, from 1972 to 1976. Their findings indicated that companies that were relatively ignored by market analysts displayed superior market performance than those that were highly researched by the securities analysts. The neglected group recorded an average annual return including dividends of 18 percent to 7 percent recorded by the highly followed group. In addition, even after they brought in market risk as a measure by the beta coefficients, the neglected firm effect persisted in every year throughout the study period and did not disappear.

Carvel and Strebel (1987) carried out a study that covered a period of 7 years, from 1976 to 1982. Their interest was to investigate if there was any relationship between the small size effect, the January effect and neglected firm effect. They examined an average of 2000 companies per year. They grouped these firms into highly explored, moderately researched and neglected portfolios. Their findings indicated that the neglected firm effect was autonomous of the size effect. However, even after controlling for the small size effect and the January effect, they still found out that the neglected stocks offered higher returns than the other portfolios.

Beard and Sias (1997) conducted a study between the years 1982 and 1995 using data for 3752 firms on AMEX. The sizes of firms formed the basis of forming the ten portfolios. They showed that the neglected firm effect vanished when the size of the firm was taken into consideration. Even after controlling for capitalization, they still found out that there was no presence of a neglect premium.

To establish if the neglected firm effect was at Istanbul stock exchange, Akkoc, Kayali and Ulukoy (2009) conducted a study between the years 1999-2008. They examined an average of 200 firms per year and these firms were grouped into three portfolios namely; neglected, normal and popular. The monthly average monthly returns of -1.00% for neglected, 0.88% for normal and 2.89% popular portfolios were the findings of their study and they concluded that there was no indication of the presence of the neglected firm effect at the Istanbul Stock Exchange.

Akhter et al (2015) examined an average of 200 firms per annum listed at the Karachi Stock Exchange, Pakistan in a bid to find the relationship between the neglected effect premium and equity returns. The study ran from June, 2006 to July, 2012. These firms were grouped into the neglected and popular portfolios on the basis of recommendations made by the analysts and monthly turnover. They showed the presence of the neglected firm effect at the Pakistan stock market.

Bertin, Michayluk and Prather (2008) conducted a study covering 1,544 firms, they grouped these into two different neglect groupings. The first group contained those firms with no analyst following and the second group consisted of firms with only one analyst, firms with two to five analysts and firms with six or more analysts. They observed that when measuring neglect on the basis of the number of analysts following a stock, there was a positive relationship between the number of analysts and liquidity of the stock. They concluded that the neglected group exhibited higher returns than the group that had more analysts.

Elfakhani and Zaher (1998) carried out a study covering the period 1986 to 1990. They examined 972 companies listed at the NYSE with the objective of finding out if there was a connection between the January effect and size anomaly and the analysts' neglect of small firms. They found out that there was evidence for the presence of size effect in January, but only for groups of large stocks. They also showed that investors again earned greater returns on stocks that were less tracked by analysts.

While trying to test the neglected firm effect, Bhardwaj and Brooks (1992b), found out that the neglect firm effect was relatively strong in January but got weak after the share price was controlled. They also showed that there was a strong neglect effect in the stocks with the lowest market capitalization during the period 1977-82. This was replicated again during the period, 1983 to 1988 but with the stocks with the highest market capitalization.

2.4 Summary of Literature Review

The literature review consisted of both the theoretical framework and empirical review. The former focused on the important theories of CAPM, EMH, behavioral finance and the neglected firm effect. The empirical review focused on studies carried out to investigate the existence of the neglected firm effect in various organized securities exchanges across the world. Whereas some studies as indicated in the literature review have shown proof of the existence of neglected firm effect in various capital markets across the world, in some that evidence did not exist and, therefore, this still gives room for further research in this field.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter provides a description of the research design, the population, sampling procedure, how the subjects of study were identified and the reasons for their selection, types of data, data collection instruments and data analysis.

3.2 Research Design

A descriptive research design was adopted in this study, it is used when data is collected to describe persons, a phenomenon, organizations and settings (Creswell, 2003). The research design covered firms listed at the NSE from 1st January 2010 to 31st December, 2015.

3.3 Population of the Study

The population of the study consisted of all 67 companies listed at the NSE from 1st January, 2010 to 31st December, 2015. Securities which were either discontinued or began trading in the middle of the year or were delisted and/or had missing data for whatever reasons in a particular year were not included in that year for the analysis. The firms that had been delisted from the NSE such as Unilever Tea Kenya Ltd, Access Kenya Ltd, Cooper Motors Corporation Holdings, A. Bauman Company Ltd among others during the period of study were excluded. Firms that had missing data for some years for whatever reasons were Uchumi Supermarkets, Kurwitu Ventures, NSE Ltd, Stanlib Fahari, Atlas Development Support Services, Liberty Kenya Holdings among others were also excluded from the study.

3.5 Data Collection

This study sought to determine the existence of the neglected firm effect at the NSE. It covered a period of six years from 1st January, 2010 to 31st December, 2015. The NSE library, the respective companies and the NSE website (www.nse.co.ke) provided the secondary data that was used for the study.

3.6 Data Analysis

Akkoc et al (2009) used time series averages when they investigated the existence of the neglected firm anomaly at the Istanbul Stock Exchange. This was considered appropriate for this study. They ranked the firms in ascending order based on the monthly trading volumes which resulted in the formation of three portfolios, namely; popular, normal and neglected. This was done at the beginning of every month. The neglected portfolio consisted of firms that recorded the lowest trading volume per month whereas the popular portfolio comprised of stocks that recorded the highest trading volume. Ten percent of the total number of securities traded in a month was used as a basis for determining the number of stocks each portfolio would have, for example, if in a month 50 stocks traded actively, then the popular portfolio will have 5 securities and the neglected portfolio will also have the bottom five securities based on the trading volumes in that month (Akkoc et al, 2009).

To assess the neglected firm effect at the NSE, a regression analysis was conducted. The market model was as follows:

$$R_T = \alpha + \beta_1 N + \beta_2 P + \varepsilon_T$$

Where R_T stands for the monthly returns, β_1 and β_2 denote the neglected firm coefficients, α represented the intercept, ε_T denotes the error term and N and P denote the neglected firms and popular firms respectively.

The monthly return data was used to measure the performance of the portfolios formed. The monthly returns were used as opposed to daily returns because the later might be prone to biasness and estimation problems associated with shorter period returns. The monthly returns were calculated using the following formula:

$$R_{it} = (P_{it+1} - P_{it}) / P_{it}$$

Where:

R_{it} = Normal return on stock i for month t ,

P_{it} = Price of stock i at the start of the month.

P_{it+1} = Price of stock i at the end of the month

The expected returns were determined as follows:

$$R_{jt} = \alpha_j + \beta_j R_{mt}$$

Where; R_{jt} is the expected rate of return for stock j at month t , β_j is the security's beta and R_{mt} is the market return.

The abnormal returns were determined by subtracting the expected returns from the actual returns as follows;

Abnormal returns = Actual returns - Expected returns.

3.7 Test of significance

In order to measure means of the monthly average abnormal returns for popular and neglected portfolios, a t-test was applied.

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

The analysis, findings and discussion of the study on the existence of the neglected firm effect at the NSE is presented in this chapter.

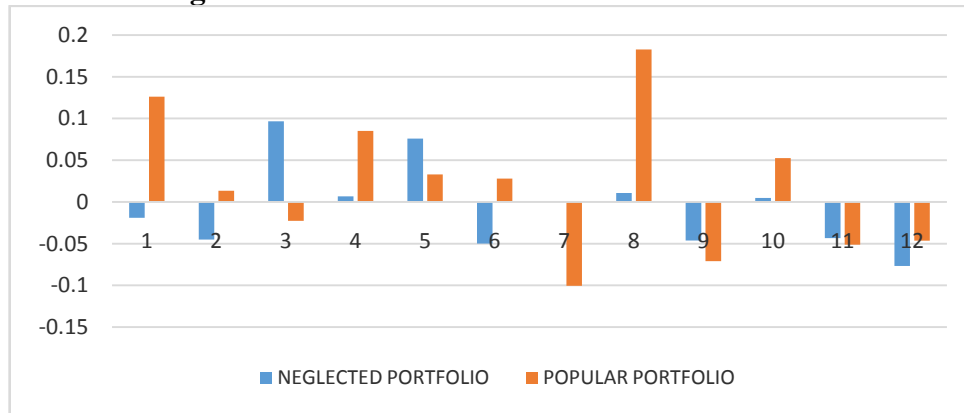
4.2 Abnormal Returns

The study made use of the monthly stock prices and the market index to determine the actual, expected and abnormal returns. The later were determined by subtracting the expected returns from the actual returns. The abnormal returns for the years 2010-2015 for the neglected and popular portfolios are shown in Table 4.1

Table 4.1: Summary of Abnormal and Cumulative Abnormal Returns for the Polar and Neglected Portfolio for the year 2010

MONTH	NEGLECTED PORTFOLIO		POPULAR PORTFOLIO	
	ABNORMAL RETURN	CUMULATIVE ABNORMAL RETURN	ABNORMAL RETURN	CUMULATIVE ABNORMAL RETURN
JANUARY	-0.018964891	-0.018964891	0.126119672	0.126119672
FEBRUARY	-0.045143744	-0.064108635	0.01348732	0.139606993
MARCH	0.096543929	0.032435294	-0.022561658	0.117045334
APRIL	0.006701027	0.039136321	0.085147846	0.20219318
MAY	0.075898658	0.115034978	0.033013647	0.235206827
JUNE	-0.049982014	0.065052965	0.028013094	0.263219921
JULY	0.000407865	0.065460829	-0.100571879	0.162648042
AUGUST	0.010718443	0.076179273	0.182664316	0.345312358
SEPTEMBER	-0.046333589	0.029845683	-0.071054204	0.274258154
OCTOBER	0.004717633	0.034563316	0.052524025	0.326782179
NOVEMBER	-0.04330254	-0.008739224	-0.051272683	0.275509496
DECEMBER	-0.076765228	-0.085504452	-0.046474962	0.229034534

Source: Research Data, 2016

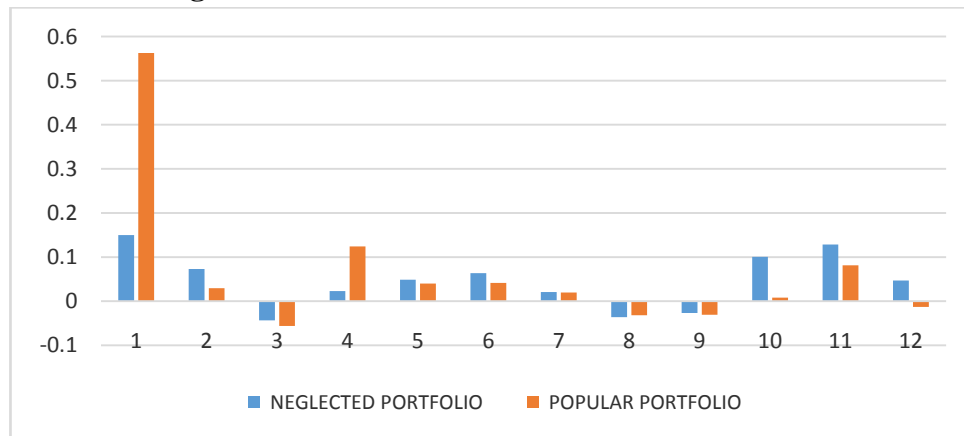
Figure 4.1: Abnormal Returns for the Year 2010

The monthly abnormal returns of popular and neglected portfolios for the year 2010 are presented in Figure 4.1. The popular portfolio shows higher abnormal returns than the neglected portfolio in all the months but not in the months of March, May and December.

Table 4.2: Summary of Abnormal and Cumulative Abnormal Returns for the Popular and Neglected Portfolio for the Year 2011

MONTH	NEGLECTED PORTFOLIO		POPULAR PORTFOLIO	
	ABNORMAL RETURN	CUMULATIVE ABNORMAL RETURN	ABNORMAL RETURN	CUMULATIVE ABNORMAL RETURN
JANUARY	0.149855	0.14985451	0.562513	0.56251339
FEBRUARY	0.073028	0.22288216	0.029662	0.59217491
MARCH	-0.04329	0.17958941	-0.05622	0.53595659
APRIL	0.022848	0.2024372	0.123993	0.65994958
MAY	0.048703	0.25114012	0.039956	0.69990602
JUNE	0.063505	0.31464469	0.041486	0.7413918
JULY	0.020798	0.33544251	0.01975	0.76114201
AUGUST	-0.03622	0.29921786	-0.03198	0.72916265
SEPTEMBER	-0.02662	0.27259844	-0.03061	0.69855003
OCTOBER	0.100522	0.37312049	0.007961	0.7065111
NOVEMBER	0.128415	0.50153526	0.081207	0.78771826
DECEMBER	0.046971	0.54850654	-0.0128	0.77491956

Source: Research Data, 2016

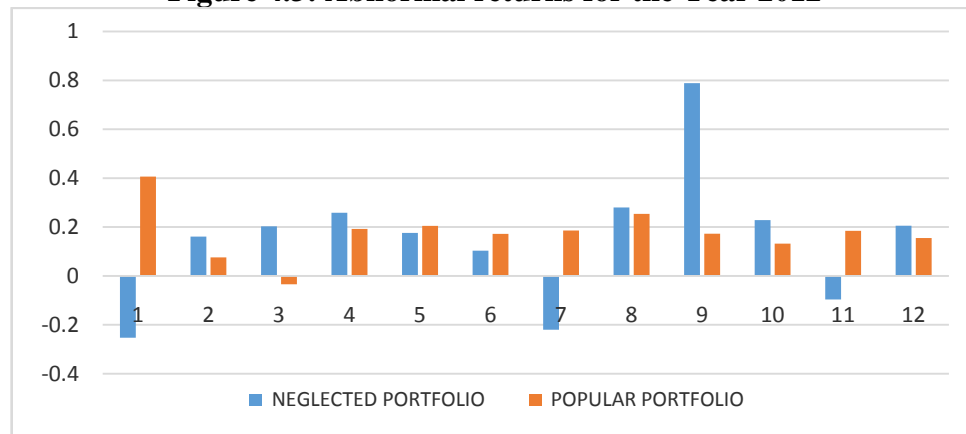
Figure 4.2: Abnormal Returns for the Year 2011

The monthly abnormal returns for the popular and neglected portfolios for the year 2011 are presented in Figure 4.2. The popular portfolio reveals higher abnormal returns than the neglected portfolio in all the months but not in the months of February, May, June, August, October, November and December.

Table 4.3: Summary of Abnormal and Cumulative Abnormal Returns for the Popular and Neglected Portfolio for the Year 2012

MONTH	NEGLECTED PORTFOLIO		POPULAR PORTFOLIO	
	ABNORMAL RETURN	CUMULATIVE ABNORMAL RETURN	ABNORMAL RETURN	CUMULATIVE ABNORMAL RETURN
JANUARY	-0.252531231	-0.252531231	0.406434675	0.406434675
FEBRUARY	0.161214795	-0.091316436	0.075924812	0.482359487
MARCH	0.203117495	0.11180106	-0.034252232	0.448107255
APRIL	0.258280436	0.370081495	0.192145528	0.640252783
MAY	0.175810605	0.545892101	0.204855942	0.845108726
JUNE	0.103154452	0.649046552	0.172023492	1.017132217
JULY	-0.219726632	0.42931992	0.185975057	1.203107275
AUGUST	0.280038946	0.709358866	0.253557132	1.456664407
SEPTEMBER	0.788662052	1.498020918	0.172736561	1.629400967
OCTOBER	0.228160791	1.726181709	0.132328522	1.761729489
NOVEMBER	-0.096451236	1.629730473	0.184739851	1.94646934
DECEMBER	0.205585843	1.835316315	0.154872002	2.101341342

Source: Research Data, 2016

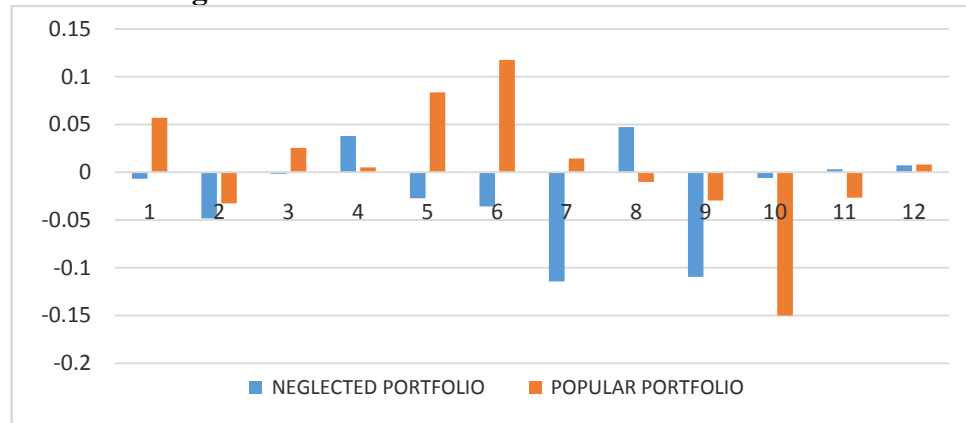
Figure 4.3: Abnormal returns for the Year 2012

The monthly abnormal returns of popular and neglected portfolios for the year 2012 are presented in Figure 4.3. The neglected portfolio displays greater abnormal returns than the popular portfolio in entirely all the months apart from in the months of January, May, June, July and November.

Table 4.4: Summary of Abnormal and Cumulative Abnormal Returns for the Popular and Neglected Portfolio for the Year 2013

MONTH	NEGLECTED PORTFOLIO		POPULAR PORTFOLIO	
	ABNORMAL RETURN	CUMULATIVE ABNORMAL RETURN	ABNORMAL RETURN	CUMULATIVE ABNORMAL RETURN
JANUARY	-0.00689	-0.00689	0.057057	0.057057
FEBRUARY	-0.04831	-0.0552	-0.03258	0.024476
MARCH	-0.00155	-0.05675	0.025431	0.049907
APRIL	0.03789	-0.01886	0.00504	0.054947
MAY	-0.02733	-0.04619	0.083711	0.138658
JUNE	-0.03578	-0.08197	0.117746	0.256405
JULY	-0.11445	-0.19641	0.014459	0.270864
AUGUST	0.047282	-0.14913	-0.0101	0.260768
SEPTEMBER	-0.10959	-0.25872	-0.02966	0.231107
OCTOBER	-0.00605	-0.26477	-0.15015	0.080953
NOVEMBER	0.003126	-0.26165	-0.02667	0.054282
DECEMBER	0.00731	-0.25434	0.008164	0.062445

Source: Research Data, 2016

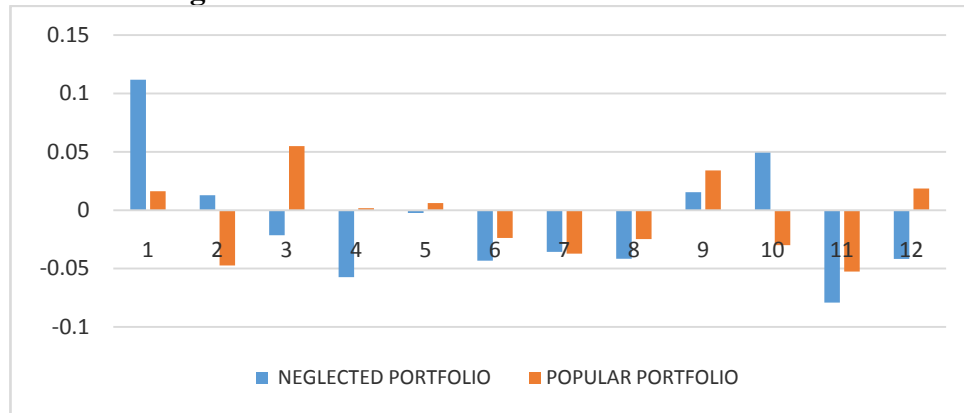
Figure 4.4: Abnormal Returns for the Year 2013

The month to month abnormal returns of the popular and neglected groups for the year 2013 are presented in Figure 4.4. The former shows greater abnormal returns than the neglected portfolio in all the months apart from in the months of February, April, July, August and November.

Table 4.5: Summary of Abnormal and Cumulative Abnormal Returns for the Popular and Neglected Portfolio for year 2014

MONTH	NEGLECTED PORTFOLIO		POPULAR	
	ABNORMAL RETURN	CUMULATIVE ABNORMAL RETURN	ABNORMAL RETURN	CUMULATIVE ABNORMAL RETURN
JANUARY	0.111752	0.111752	0.016178	0.016178
FEBRUARY	0.012805	0.124556	-0.0473	-0.03112
MARCH	-0.02146	0.103093	0.054824	0.023703
APRIL	-0.05731	0.045783	0.001637	0.02534
MAY	-0.00243	0.043351	0.006083	0.031424
JUNE	-0.04328	7.09E-05	-0.02385	0.007572
JULY	-0.0357	-0.03563	-0.03726	-0.02969
AUGUST	-0.04168	-0.07731	-0.02481	-0.0545
SEPTEMBER	0.015424	-0.06189	0.034104	-0.02039
OCTOBER	0.049234	-0.01266	-0.02993	-0.05032
NOVEMBER	-0.07922	-0.09188	-0.05263	-0.10295
DECEMBER	-0.04179	-0.13367	0.018568	-0.08438

Source: Research Data, 2016

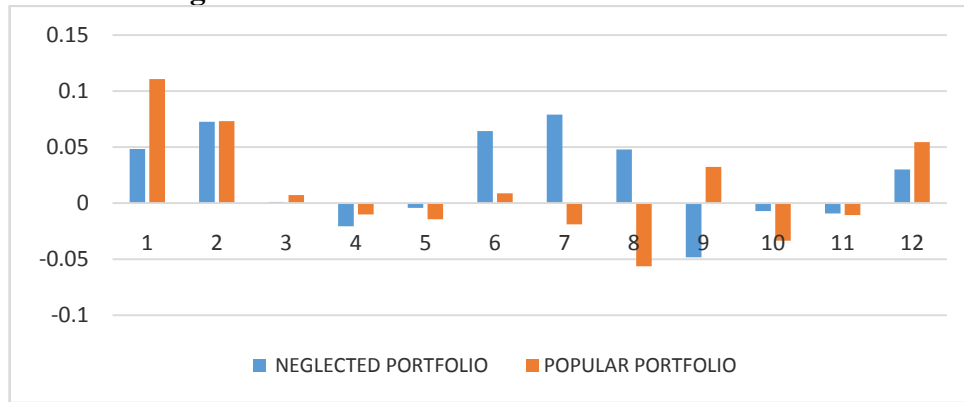
Figure 4.5: Abnormal Returns for the Year 2014

The month to month abnormal returns of popular and neglected groups for the year 2014 are presented in Figure 4.5. The neglected group displays greater abnormal returns than the popular group in all the months except in the months of March, April, May, July, September, and December.

Table 4.6: Summary of Abnormal and Cumulative Abnormal Returns for the Popular and Neglected Portfolio for the Year 2015

MONTH	NEGLECTED PORTFOLIO		POPULAR PORTFOLIO	
	ABNORMAL RETURN	CUMULATIVE ABNORMAL RETURN	ABNORMAL RETURN	CUMULATIVE ABNORMAL RETURN
JANUARY	0.048404	0.048404	0.11067	0.11067
FEBRUARY	0.072668	0.121072	0.073225	0.183895
MARCH	0.00114	0.122212	0.007171	0.191066
APRIL	-0.02067	0.101541	-0.01002	0.181046
MAY	-0.00419	0.097347	-0.01432	0.166726
JUNE	0.064341	0.161688	0.008856	0.175582
JULY	0.078996	0.240684	-0.01891	0.156673
AUGUST	0.047967	0.288651	-0.0563	0.100372
SEPTEMBER	-0.04831	0.240337	0.032342	0.132714
OCTOBER	-0.00704	0.233298	-0.0334	0.099319
NOVEMBER	-0.00917	0.224127	-0.01057	0.088746
DECEMBER	0.030053	0.25418	0.054535	0.143281

Source: Research Data, 2016

Figure 4.6: Abnormal Returns for the Year 2015

The monthly abnormal returns for the popular and neglected groups for the year 2015 are presented in Figure 4.6. The popular portfolio shows higher abnormal returns than the neglected portfolio in all the months apart from in the months of April, June, July and August.

Table 4.7: Monthly Average Abnormal Returns for the Period 2010-2015

YEAR	POPULAR PORTFOLIO	NEGLECTED PORTFOLIO
2010	0.0191	-0.0071
2011	0.0646	0.0458
2012	0.1751	0.1529
2013	0.0052	-0.0212
2014	-0.0070	-0.0112
2015	0.0119	0.0212

Source: Research data, 2016

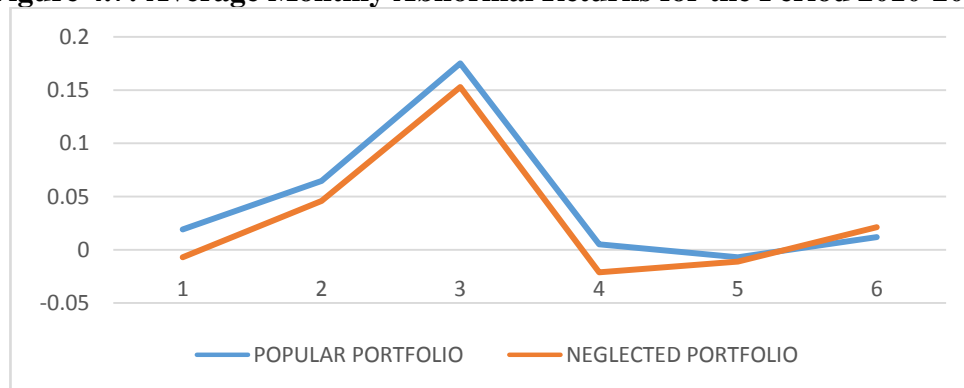
Figure 4.7: Average Monthly Abnormal Returns for the Period 2010-2015

Figure 4.7 presents the average monthly abnormal returns for the popular and neglected portfolios for the period 2010 to 2015. The popular portfolio outperformed the neglected portfolio in all the years except in the year 2015. In the years 2010, 2013 and 2014, the neglected portfolio shows an abnormal return of -0.7, -2.12 and -1.12 percent respectively meaning that its returns are negatively related to the market return. The popular portfolio shows a positive return relative to the market for all the years except in the 2014 which shows an abnormal return of -0.7 percent.

4.3 Regression Results

A regression analysis was conducted on the stock returns relative to the market index for neglected and popular portfolios for the period 2010 to 2015.

4.3.1 Coefficient of Determination

Table 4.8: Model Summary

Model	R	R ²	Adjusted R Square	Std. Error of the Estimate
1	.961 ^a	.924	.905	.2559517

Source: Research Data, 2016

The coefficient of determination explains the magnitude to which changes in the dependent variable (Returns) can be explained by the change in the independent variables. The neglected and the popular portfolio which are the independent variables explain 90.5 percent of variation in returns as indicated by R². This means that there could be other factors not covered in this study that can explain the difference of 9.5 percent of variation in the dependent variable.

4.3.2 Regression Coefficients

Table 4.9: Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.087	.027		3.240	.048
	POPULAR	.094	.111	.090	.848	.059
	NEGLECTED	-1.203	.117	-1.087	-10.288	.002
	D					

a. Dependent Variable: Return

The following equation is obtained after the regression findings and it is shown in Table 4.9.

$$R_T = 0.87 + 0.094P - 1.203N + 0.027$$

Where R_T is the return (dependent variable), P is the popular portfolio and N is the neglected portfolio.

4.3.3 Analysis of Variance

Table 4.10: Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.026	2	.013	1039.199	.000 ^b
	Residual	.000	3	.000		
	Total	.026	5			

a. Dependent Variable: RETURN

b. Predictors: (Constant), NEGLECTED, POPULAR

To establish the strength of the model in explaining the relationship between the variables, the Analysis of Variance (ANOVA) was conducted. The results are shown in table 4.10.

Whether the regression model predicts the dependent variable significantly well or not, the model summary confirms that. The F test indicates the statistical significance of the regression model and as such the P value which is equal to 0.000 is less than 0.001 meaning the regression model statistically and significantly predicts the outcome variable that is a good fit for the data.

4.3.4 Regression Coefficients

Table 4.11: Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.087	.027		3.240	.048
	POPULAR	.094	.111	.090	.848	.039
	NEGLECTED	-1.203	.117	-1.087	-10.288	.002
	D					

a. Dependent Variable: Return

Source: Research Data, 2016

The test of significance was carried out using the T-test which produced values of less than 0.05 implying significance of all the variables individually. To test the overall fit of the model the F-test was conducted.

4.4 Discussion of the Findings

The objective of this study was to investigate the existence of neglected firm effect at the NSE and the study covered six years from 2010-2015. The abnormal returns were calculated for both the neglected and popular portfolios. The portfolios were formed on the basis of the monthly trading volumes for the firms listed at the NSE. The popular group earned greater abnormal returns than the neglected portfolio in all the years but not in the year 2015. The popular portfolio earned an average annual return of 4.48 percent compared to 3.01 percent earned by the neglected portfolio. This, therefore, means that this study did not find evidence of the existence of the neglected firm effect at the NSE.

CHAPTER FIVE: SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents a summary of the findings of the study, conclusions arrived at based on the findings and highlights recommendations, limitations encountered during the study and gives proposals for more research.

5.2 Summary of Findings

The objective of this study was to investigate the existence of neglected firm effect at the NSE. The study adopted a descriptive study design to investigate why less-known firms earn greater abnormal returns than well-known firms. The popular portfolio earned abnormal returns higher than those of the neglected portfolios for all the years except in 2015.

The neglected portfolio earned an average annual abnormal return of 3.01 percent compared to 4.48 percent earned by the popular portfolio. This, therefore, means that there is no proof of the neglected firm effect at the NSE and as such the NSE could be an efficient market.

The coefficient of determination implies that other factors other than neglected firm effect could have contributed to the varying change on the stock market returns. The T-test produced values of less than 0.05 which implies significance of all the studied variables.

5.3 Conclusion

This study concludes that there is no existence of the neglected firm effect at the NSE. This, therefore, means that the NSE could be an efficient market based on this market anomaly. However, a lot still needs to be done in terms of developing the market and as such making it more efficient. The Capital Markets Authority (CMA) being the regulator, the government and other market players should continue to invest in information communication technology to enhance service delivery, enact laws and enforce trading and listing rules and regulations. The NSE should also consider cross listing its securities in other capital markets such as the NYSE.

5.4 Recommendations

The study findings indicate that the neglected firm effect does not exist at the Nairobi Securities Exchange. It is for this reason that the study recommends that the regulator and other stakeholders should develop more robust measures meant to improve the efficiency of the stock market. The government should continue to enact and enforce laws that will ensure the stock market is free from exploitation and malpractices. The NSE should also consider cross listing the securities of the listed firms in other capital markets across the world.

5.5 Limitation of the Study

It was hard to get information of some of the listed firms at the NSE. Some had missing data either after being delisted for whatever reasons or had been taken over by other firms through mergers and takeover arrangements. Putting information together for the study was also time consuming because the stock returns had to be adjusted for dividends and stock splits.

Stock returns are influenced by various factors and, therefore, it is possible that they might have been affected by other factors other than the market anomalies exhibited by the capital markets such as the NSE. The variability in stock returns could also be as a result of illegal activities such as insider trading.

The study covered a period of six years from 1st January, 2010 to 31st December, 2015. It was not possible to do a study covering prior years before 2008 because the NASI was introduced as an alternative index in the year 2008. As a result, the shortened period could have affected the results of the study.

The NSE is still an emerging market with only 67 firms listed and this does not compare well with established capital markets such as the NYSE, AMEX and Istanbul Securities Exchange in terms of availability of information, enforcement of listing and trading rules and regulations and, therefore, this might have affected the findings of the study.

5.4 Suggestion for Further Research

This study covered a period of six years from 1st January 2010 to 31st December 2015. It is important that a similar study is conducted for a longer period to examine the behavior exhibited by stocks in terms of returns. There is a possibility that studies covering longer periods can record different results.

In trying to determine what constitutes the neglected firms, alternative measures such as monthly stock turnover and the number of market analysts following certain stocks should be used. This study used the monthly trading volume as a basis of forming the neglected, normal and popular portfolios.

Further research is necessary to establish the relationship among the market anomalies of the neglected firm effect, the small firm effect and the January effect. Further research can also be conducted to investigate why less-known firms tend to generate higher returns than well-known firms at the NSE.

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APPENDICES

Appendix I: List of the NSE Constituent Companies as At December 2015

MANUFACTURING

1. Unga Group Ltd
2. Mumias Sugar Company Ltd
3. Kenya Orchards Ltd
4. Eveready East Africa
5. East African Breweries Ltd
6. Carbacid Investment Ltd
7. British American Tobacco Kenya Ltd
8. BOC Kenya Ltd
9. A. Bauman Company Ltd
10. Flame Tree Group Holdings Ltd.

AGRICULTURAL

11. Williamson Tea Kenya Ltd
12. Sasini Ltd
13. Rea Vipingo Ltd
14. Limuru Tea Ltd
15. Kapchorua Tea Company Ltd
16. Kakuzi
17. Eaagads Kenya Ltd

AUTOMOBILES AND ACCESSORIES

18. Sameer Africa Ltd
19. CMC Holdings Ltd
20. Marshalls East Africa Ltd
21. Car and General Ltd

BANKING

22. Co-operative Bank of Kenya Ltd
23. Standard Chartered Bank Ltd
24. NIC Bank Ltd
25. National Bank of Kenya Ltd
26. Kenya Commercial Bank
27. I & M Holdings
28. Housing Finance Corporation of Kenya Ltd
29. Equity Bank Ltd
30. Diamond Trust Bank Ltd
31. CFC Stanbic
32. Barclays Bank of Kenya Ltd

COMMERCIAL AND SERVICES

33. Uchumi Supermarket Ltd
34. TPS Eastern Arica
35. Standard Group Ltd
36. Scan Group Ltd
37. Nation Media Group

38. Nairobi Business Ventures Ltd
39. Longhorn Publishers
40. Kenya Airways
41. Hutchings Biemer Ltd
42. Express Kenya Ltd
43. Deacons
44. Atlas Development and Support Services

CONSTRUCTION AND ALLIED

45. East African Portland Cement Ltd
46. East African Cables Ltd
47. Crown Berger Ltd
48. Bamburi Cement Ltd
49. Athi River Mining

TELECOMMUNICATION AND TECHNOLOGY

50. Safaricom Ltd

REAL ESTATE INVESTMENT TRUST

51. Stanlib Fahari

ENERGY AND PETROLEUM

52. Umeme Ltd
53. Total Kenya Ltd
54. Kenya Power and Lighting Company Ltd
55. Kenol Kobil Ltd
56. KenGen Ltd

INSURANCE SERVICES

57. Pan Africa Insurance Holdings Ltd
58. Liberty Kenya Holdings Ltd
59. Kenya Re-Insurance Corporation Ltd
60. Jubilee Holdings Ltd
61. CIC Insurance Group Ltd
62. BRITAM Ltd

INVESTMENT

63. Trans-Century Ltd
64. Olympia Capital Holdings ltd
65. Kurwitu Ventures
66. Home Afrika Ltd

INVESTMENT SERVICES

67. Nairobi Securities Exchange Lt

Appendix 2: The Monthly Stock Returns for the Popular and Neglected Portfolios for the Period 2010 to 2015

2010

MONTH	PORTFOLIO		
	POPULAR	NORMAL	NEGLECTED
JANUARY	0.14598	0.04964	0.00276
FEBRUARY	0.04084	0.00863	-0.00037
MARCH	0.00496	0.04346	0.14184
APRIL	0.10659	0.02201	0.03329
MAY	0.05524	0.09325	0.10492
JUNE	0.04993	0.05078	-0.02193
JULY	-0.08518	0.04957	0.00837
AUGUST	0.20506	0.06817	0.04025
SEPTEMBER	-0.04815	0.01246	-0.01524
OCTOBER	0.06453	0.02977	0.00227
NOVEMBER	-0.03355	-0.00161	-0.02814
DECEMBER	-0.02674	-0.05530	-0.05544

Source: Research Data, 2016

2011

MONTH	PORTFOLIO		
	POPULAR	NORMAL	NEGLECTED
JANUARY	0.51287	0.03781	0.10281
FEBRUARY	-0.02556	-0.04116	0.02377
MARCH	-0.09741	-0.06454	-0.08699
APRIL	0.07585	-0.02483	-0.02361
MAY	-0.00925	-0.00461	0.00183
JUNE	-0.01407	-0.04209	0.01411
JULY	-0.06123	-0.03753	-0.03867
AUGUST	-0.08885	-0.04816	-0.08614
SEPTEMBER	-0.07228	-0.03326	-0.07051
OCTOBER	-0.04878	-0.01408	0.05066
NOVEMBER	0.03705	-0.02728	0.08354
DECEMBER	-0.05831	-0.03807	0.00156

Source: Research Data, 2016

2012

MONTH	PORTFOLIO		
	POPULAR	NORMAL	NEGLECTED
JANUARY	0.05098	0.03887	0.06115
FEBRUARY	0.02927	-0.00737	0.03681
MARCH	0.18972	0.04643	0.01210
APRIL	-0.03694	0.04263	0.06051
MAY	0.04457	0.05459	-0.01979

JUNE	0.01671	0.06916	0.05189
JULY	0.03088	-0.00351	0.01919
AUGUST	0.01233	-0.00629	0.05974
SEPTEMBER	0.03945	0.04471	-0.02990
OCTOBER	0.02272	0.03807	0.02933
NOVEMBER	0.02945	0.02658	-0.09916
DECEMBER	0.00104	0.11972	-0.02590

Source: Research Data, 2016

2013

MONTH	PORTFOLIO		
	POPULAR	NORMAL	NEGLECTED
JANUARY	0.06818	0.07514	0.02680
FEBRUARY	0.02973	0.01884	-0.02588
MARCH	0.01343	0.10041	0.03723
APRIL	0.04616	0.04964	0.06499
MAY	0.01015	-0.03127	0.02499
JUNE	-0.03938	0.01900	0.03492
JULY	-0.01582	-0.00870	-0.07165
AUGUST	0.02200	0.00918	0.07636
SEPTEMBER	-0.00881	-0.01937	-0.07803
OCTOBER	0.06134	0.01762	-0.01643
NOVEMBER	0.01491	0.05879	0.03012
DECEMBER	0.00182	0.05516	0.04485

Source: Research Data, 2016

2014

MONTH	PORTFOLIO		
	POPULAR	NORMAL	NEGLECTED
JANUARY	0.03175	0.07018	0.15022
FEBRUARY	-0.03090	0.03429	0.03773
MARCH	0.07032	-0.00636	0.01838
APRIL	0.01882	0.01410	-0.04537
MAY	0.02305	0.05611	0.01311
JUNE	-0.00712	-0.04263	-0.02393
JULY	-0.02150	0.01903	-0.00035
AUGUST	-0.00885	-0.04481	-0.00944
SEPTEMBER	0.05188	0.01368	0.01768
OCTOBER	-0.01369	-0.00675	0.07678
NOVEMBER	-0.03556	-0.02319	-0.06536

Source: Research Data, 2016

2015

MONTH	PORTFOLIO		
	POPULAR	NORMAL	NEGLECTED
JANUARY	0.10312	0.00468	0.02746
FEBRUARY	0.05886	0.00946	0.06011
MARCH	-0.00801	-0.02401	-0.01041
APRIL	-0.03092	-0.01802	-0.02517
MAY	-0.02680	0.00373	-0.01906
JUNE	-0.01567	0.03745	0.06430
JULY	-0.03711	-0.00219	0.07117
AUGUST	-0.06704	-0.01009	0.03096
SEPTEMBER	0.01126	-0.07762	-0.05259
OCTOBER	-0.04253	0.13023	-0.02604
NOVEMBER	-0.02290	0.02476	-0.02424
DECEMBER	0.03394	-0.07733	0.02517

Source: Research Data, 2016