

**SMALL FIRM EFFECT ON STOCK MARKET RETURNS AT THE
NAIROBI SECURITIES EXCHANGE**

BY

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DECLARATION

I declare that this research project is my original work and has never been submitted elsewhere for award of a degree or diploma at the University of Nairobi or any other educational institution.

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This research project has been submitted for examination with my approval as the university supervisors

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.

I am greatly indebted to my family for their prayers, moral encouragement and anchor-like support throughout the course period. I finally thank my friends and colleagues for their encouragement and bridging the gap during my absence.

DEDICATION

I wish to dedicate this project to my mother and sister for their love, prayers, moral and financial support throughout the entire academic period.

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LIST OF ABBREVIATIONS

ANOVA	-	Analysis of Variance
CIC	-	Capital Issue Committee
CMA	-	Capital Markets Authority
EMH	-	Efficient Markets Hypothesis
FTSE	-	Financial Times Stock Exchange
NSE	-	Nairobi Securities Exchange
NYSE	-	New York Stock Exchange

ABSTRACT

The study sought to investigate the existence of small firm effect at the Nairobi Securities Exchange. The secondary data for analysis was gathered from the firms listed at the NSE. The listed stocks were divided into 4 quartiles based on market capitalization. The study used only two quartiles (quartile one and quartile four) in the analysis. Quartile One consisted of the largest firms while Quartile Four consisted of the smallest firms as per market capitalization. Analysis of the data was done with the aid of SPSS (version 21) and Microsoft's Excel (2013). NSE All Index (NASI) was used as the proxy for market stock returns and was regressed against the small firm and big firm stock returns. The study established that there is a very strong relationship ($R= 0.740$) between market returns and small firm stock returns. The adjusted R-Square value of 0.964 implies that 96.4% of the total variance in market stock returns can be attributed to changes in small firm stock returns and big market stock returns. To test the significance of individual parameters, the T-test was used. Further, ANOVA statistics established that the regression model was highly reliable and good for data at 100% confidence. The study established that there is a positive and statistically significant small firm effect on the stock listed at NSE. This study concludes that there is a positive and statistically significant small firm effect at the NSE. This implies that market stock returns are highly influenced by the stock of small firms. The stock investors who want to make profit in stock trading should invest the stocks of small firms. The researcher recommends that investors wishing to make more profit in stock trading should invest more on the stocks of the small firms listed at the NSE.

CHAPTER ONE: INTRODUCTION

1.1 Background of the study

Efficient Markets Hypothesis (EMH) suggests that stock prices reflect fully all available information concerning a stock. This implies that there are no opportunities for an investor to obtain abnormal or excess returns from a stock. According to behavioral finance, efficient market hypothesis has failed to explain observed anomalies that generate excess returns (Fischer, 2011). Financial market anomalies refer to empirical results that are inconsistent with maintained theories of asset pricing.

Research evidence on small firms has generally shown a high stock appreciation coupled with dividend payments that have been stated as abnormal or excess returns. The existence of these excess returns has an implication on stock market returns especially for companies with small market capitalization. In this regard small size effect has been described as the persistent negative relationship between a firm size and returns from stocks from that firm (Annaert & Combez, 2002). Small size effect studies were pioneered by Banz (1981) who conducted a study on the New York Stock exchange market and observed significant excess returns obtained by smaller firms as compared to larger firms and referred this anomaly as the small size effect.

Nairobi Securities Exchange is currently the largest securities exchange in East Africa containing four market segments with 63 listed firms. Capital Markets Authority is the regulatory body that provides oversight authority on the operations at the NSE and it was

constituted through an act of parliament (Cap 485A, Laws of Kenya) in 1990 (CMA, 2016). A stock exchange plays important roles like providing a ready market for sale and purchase of securities. In this role, the exchange provides assurance to investors that their security can be converted to cash whenever they want. However, valuation of shares on a stock exchange is in itself not an easy task. In as much as the stock exchange provides a price discovery mechanism, sound investment decisions are based on a number of factors.

1.1.1 Small Firm Effect

Small firm effect is attributed to the works of Banz (1981) that showed that small listed companies earned higher returns inconsistent with the CAPM by Sharpe (1964). The most common measure of a firm size is its market capitalization. Studies show that small firms as measured by market capitalization earn excess returns as compared to larger firms (Anaert & Combez, 2002). Dimson and Marsh (1986) found out that the yearly returns on stocks of larger firms were far less than those of smaller firms; a market anomaly that was referred to as small effect by Banz (1981). Cheung et al., (1994) also defined the small firm effect as the consistent high stock returns gained by small capitalized firms.

Firm size is a method of categorizing companies for purpose of study. Size of the firm can be determined by market capitalization, output levels, number of employees, sales turnover, market share or asset base (Oluoch, 2003). Market capitalization is the most applied measure and it is given by the stock price multiplied by the total number of shares

outstanding. This has been found to be a reliable measure since it incorporates both internal and external factors affecting a firm. The study of small size effect has impact on investment strategies for many companies and is used in tests of the efficient market hypothesis.

1.1.2 Stock Returns

Stock returns refer to the gain or loss in value of a stock in a given period. Stock market indices are designed to show the performance of the stock market. A stock market index is an indicator of the average change in prices of shares quoted on the stock market (Lee, 1998). Stock returns are affected by many variables including economic performance, political factors and changes in the industry of a particular company. In more developed markets, stock returns are particularly sensitive to available information in line with the efficient market hypothesis. Stock returns are not only affected by income but also by capital gains in the share (Gartner, 1995).

Investors usually use a stock index to judge the overall performance of companies listed on a stock exchange. A good stock index should be able to capture the fluctuations of well diversified and highly liquid stocks. A stock index being a barometer of the overall exchange should ideally include the stocks of organizations that have a substantial market capitalization such that any major change in the index is reflected in the index (Jayen, 2014). Stock market returns are calculated as percentage change in a market index based on the previous closing index.

1.1.3 Small Firm Effect and Stock Returns

According to Moore (2005), the main concern of small firms is building of market share and equity in contrast to large firms and as a result their distribution of earnings is different. A small firm is more likely to plough back its profits increasing the growth of retained earnings to increase in growth and hence the value of common stock rises. On the other hand, a large firm is not likely to use its profits to increase the value of common stockholders since large common stock is expected lessen earnings to the shareholders.

Banz (1981) in his study conducted at the New York Stock Exchange Market observed that the stocks of small sized firms earned excess returns compared to those of larger firms. Fama and French (1996) argued that the tendency of small firms to exhibit abnormal returns can be attributed to the fact that these small stocks contain systematic risk that cannot be adequately measured. Systematic risk cannot be easily captured by empirical models and this contributes to the abnormal returns exhibited by small firms (Bell, 2003). According to Berk (1997), Small firms are considered small because of the use of a high discount rate by the market to discount their future cash flows, or small because of their loss in value due to poor past performance. Due to this, small firms find it difficult to survive tough situations compared to large firms and because these risks may not be taken into account by empirical models, small firms often have higher risk-adjusted returns.

1.1.4 Nairobi Securities Exchange

The NSE is licensed and regulated by the Capital Markets Authority of Kenya (CMA) which was formed in the year 1990; it has the sole authority to provide a trading platform to the firms listed at the NSE. Trading on this market can be traced back to the year 1920 when Kenya was still a British colony. The desire by stock brokers and the government to have a formal trading platform necessitated the need to have a formal trading exchange (Murigi, 2008). The NSE was then formally organized in 1954 as a voluntary association under the societies Act (Miya, 2007). The securities traded during this period included Government stocks, loan stocks, preferential and common shares (Murigi, 2008).

The main indices in the NSE are: the NSE 20 share index, Nairobi all shares index and AIG 27-share index (NSE website 2015). The Local investors hold share totalling 52.39% of shares trading at the NSE with the balance allocated as follows: Local corporate 25.39%, foreign corporate 20.44%, East African Individuals 0.13% and East African Corporate 0.62% (NSE, 2016).

Currently there are 65 quoted companies representing twelve different sectors. Trading on the stock exchange has become a recognized tool for raising capital. Investors have become increasingly aware of the potential of the Nairobi stock exchange (Miya, 2007). The mid-eighties and early nineties witnessed many firms raising new equity from the stock market for the first time and consequently many investors investing in their shares through primary initial offering and secondary markets. The growth of the NSE has placed it fourth and fifth in terms of trading volume and market capitalization as a ratio of

Gross domestic product respectively. It also participates in cross-listing of some of its equities with neighbouring East African bourses the Uganda Securities Exchange and the Dar es Salaam Stock Exchange in Tanzania. NSE market index comprises of a selection of listed companies which represent a significant portion of market capitalization and trade actively.

1.2 Research Problem

Stock market anomalies are defined as empirical results which are not similar to the existing theories in the stock markets. While the market has accepted the existence of stock market anomalies, use of them by investors to earn surplus returns is still a subject of debate. When evaluating anomalies it is important for investors to understand that the fact that anomalies have existed in the past does not guarantee that they will continue to persist in future. One particular anomaly that has been documented by economists is, “the small firm effect” (Rozeff & Kinney, 1976). The small firm effect/the size effect hold that the risk adjusted annual return of small firms is greater than those of big firms (Banz, 1981). In an efficient market, one would expect that stock prices to rise up to the point where the risk adjusted future returns to investors would become normal.

The NSE has witnessed massive changes which have revolutionized the manner in which business is conducted. The market has witnessed technological changes which have increased the efficiency and effectiveness in trading, trading hours have been increased and the number of listed firms continues to rise. Stock returns at the NSE have exhibited an upward trend with slump in returns only occurring during extreme market conditions

such as, election period and also during the global financial crisis and the collapse of major stock brokerage Firm. On eighteenth February 1994 the NSE, 20-Share Index recorded its highest performance of 5030 points. It was thus rated as the best performing in the world market by the International Finance Corporation (IFC) with an average return of 179% in dollar terms during that year (NSE Website, 2015).

Despite empirical evidence that shows the efficiency of the stock markets, studies have provided strong evidence of persistent anomalies in stock markets which are contrary to the hypothesis that markets are efficient. Internationally, Keim (2003) analyzed the interrelationship of small firm and January effects at the NYSE. The result of the study revealed that small firm effect was present but more pronounced in January in the market. Jacobsen, Mamun and Visaltanachoti (2005) carried out a study to investigate the interaction between the January effects on performance of stocks of different sizes. The findings concluded that January effect is key in the explanation of the small firm effect. Rathinasamy and Matripragada (2006) re-examined the January effect and the small firm effect. The results showed that there was a January effect even after adjusting for risk and small firms do generate abnormal returns.

Locally, Oluoch (2003) conducted a study aimed to determine whether size effect is experienced at the NSE. The results of his study did not to predict any prevalence of the anomaly in the market. Lukale (2007) carried out an empirical investigation on interrelationship of small firm effect and January effect at the NSE. The study found no significant correlation between the two study variables. Mghendi (2014) tested the small

firm effect on stock returns at the NSE. The study established that there was existence of small firm effect on stock returns. The findings of these three local studies are conflicting and the current study seeks to contribute to this debate. The current study take into account dividends when computing average stock returns as recommended by Mghendi (2014). The study also takes into account a longer study period from January 2008 to December 2015. This study therefore seeks to examine the existence of small firm effect on stock market returns at the Nairobi Securities Exchange by seeking to answer the following research question. Does the small firm effect exist at the Nairobi Securities Exchange?

1.3 Objective of the Study

To investigate the existence of the small firm effect at the Nairobi Securities Exchange market.

1.4 Value of the study

This research was valuable to building of existing theory by adding to the already existing pool of knowledge on small firm effect which was helpful to other academicians in the investigation of the small firm effect and its relationship with the efficient market hypothesis and help them to add new knowledge in this field.

It is also be useful to firms' management and financial analysts of small companies in predicting stock returns since it undertakes to explain the gap between returns and firm size and hence help them come up with strategic policies and decisions that enable companies to generate higher returns.

Stock brokerage firms would able to provide efficient advice to their clients on the benefits of investing in small firms and their expected performance on the capital markets. They would also be in a position to understand the variability of stock returns from companies based on firm size differences and thus be able to give their clients quality advice. Investors are also be able to benefit from this study in their portfolio allocation and investment decisions by understanding the effect of firm size on stock returns.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter brings together available literature on small firm effect both locally and internationally. The chapter is divided into five sections, the first section cover the theories in the study, the second section cover the determinants of stock returns, the third section cover empirical studies, the fourth section covers the conceptual framework and the last section cover the summary of the theoretical and empirical reviews.

2.2. Theoretical Review

This presents a review of the theories that explain the small firm effect on stock returns. The theoretical review provide detailed knowledge of what has been done and form a framework within which the research findings are to be interpreted and also to overcome the limitations of previous studies. The following section describes and discusses different theories such as the Efficient Markets Hypothesis theory, the Random walk theory and the Capital Asset Pricing Model.

2.2.1 Efficient Markets Hypothesis

According to this theory market prices of stocks should fully reflect all the available information if markets are efficient. The theory traces its origin back to the 19th century. Gibson (1989) argued that the prices of stocks were a reflection of the smartest participants. He viewed stock valuation to be a result of the voting process in which participants' vote would determine the direction of the price change in stocks. The origin

of the theory can also be identified in the works of Samuelson and Fama in the 1960s, who stated that in an informational efficient market, price changes should be constant if they fully incorporate all information and expectations of various market participants. In 1970 Fama distinguished three forms of market efficiency; the weak form, semi-strong form and the strong form.

In the weak form efficiency, it is suggested that stock prices reflect information contained in the record of past prices, trading volumes, rates of return and market generated information, Fama (1970). The semi-strong form of the market suggests that stock prices adjust rapidly to the release of all public information which is relevant for the purpose of valuing a firm. The strong form efficiency states that stock prices fully reflect all information; public and private about a particular stock. The existence of seasonality in stock returns however has been seen to violate the assumptions of the hypothesis.

Various studies have been conducted to test the EMH theory around the globe. Dickinson and Muragu (1994) carried a study to test the EMH at the Nairobi Securities exchange. When conducting their study, they used a series of correlational tests and run tests to test this efficiency. The results of their study showed that the NSE showed a weak form of EMH. Shleifer (2000) carried out a study on how investors react to corporate news and concluded that the market followed semi-strong form of market efficiency. In his claims, he stated that stock prices started drifting before the actual announcement was made an indication of market anticipation or information leaks and on the day of announcement stock prices would adjust to reflect the new intrinsic value and would remain relatively constant for about one month.

Despite of these many researchers have documented results contrary to the EMH. Kendall (1953) in his analysis of time series of 22 stocks concluded that stock returns were random. Other researchers such as Grossman & Stieglitz (1980) claimed that markets could not be efficient because of the existence of costs of information. In their analysis, the Return on an investment must be higher than the cost of information; otherwise the propensity to invest would disappear. Several other researchers have criticized the EMH stating that predictability of stock returns are a reflection of the irrationality in the market.

2.2.2 Random Walk Hypothesis

This theory dictates that the returns of stocks are unpredictable and random behaviour (Kendall, 1953). According to Bodie (2009) the prices of securities depend on factors that influence the expected returns and expected risk and that information on these two factors are released In the market at different times causing a different reaction from the various investors. It has been therefore concluded by supporters of this theory that no one can predict accurately the direction and the magnitude of price changes. The earliest contributions to this theory can be traced back to Bachelier (1900) who concluded from his study that changes in prices have independent and identical distributions. According to Fama (1970) the theory has an implication that, the past prices of stock cannot be used to determine future prices in any logical consistent manner.

One of the pioneer tests of the Random Walk Hypothesis was by Cowles and Jones (1937), who compared how the historical stock returns were frequent and their sequence.

The hypothesis presumes that there is free information which is also readily available and there are enough participants with resources to take advantage of profitable opportunities arising from price movements of stocks. These participants compete against each other making all non-random fluctuations too small to be exploited profitably (Seelenfreund, 1968). Panas (1990) stated that news is unpredictable and as such price changes tend to be random because they are as a result of information. As a result of this, prices contain all information that is known and investors who are not well informed buy portfolios that give generous returns (Panas, 1990).

2.2.3 Capital Asset Pricing Model

The capital asset pricing model was a model developed by Sharpe (1964) as a continuation of the portfolio theory by Markowitz (1953). The CAPM model provides a prediction on the expected returns of a portfolio in which risk is a key determinant. The model makes an assumption that there are no imperfections in the market and that investors can lend and borrow at the risk free rate among other assumptions. The model also implies that if investors hold well diversified portfolios unsystematic risk was zero and systematic risk was the only risk of importance to the investors. This means that there was no identifiable inefficiency in the market and all securities lie along the market security line. The proponents of this theory argue that the sole determinant of returns to a financial asset is the systematic risk as measured by beta. The beta measures this relative to the market portfolio. CAPM argue that the systematic risk denoted by Beta is the only factor that affects stock returns.

2.3 Determinants of Stock Returns

The stock returns of various firms are a function of many factors both internal and external to a company. Factors such as the small firm effect, Inflationary factors, level of interest rates and Investor perceptions regarding stocks are seen as factors that determine the stock returns of many listed Firms.

2.3.1 Small Firm Effect

The small firm effect has been categorized as a market anomaly (Kuhn, 1970). He referred to this as patterns in the returns of securities that could not be explained by theory. The small firm effect as a market anomaly has disregarded the provisions of the efficient markets hypothesis (Fama, 1991). It has been noted in many stock exchange markets around the world that stocks of small listed firms report higher returns or excess returns as compared to stocks of larger firms. Research evidence on small firms has generally shown a high stock appreciation coupled with dividend payments that have been stated as abnormal or excess returns. The existence of these excess returns has been seen as determinants of stock returns.

2.3.2 Inflation

Research conducted show a correlation between returns to a stock and inflation which is measured by the consumer price index (CPI). Studies reveal that inflation has a negative effect on stock returns. Bodie (2009) in his research noted that since equities represent a claim to real assets, they hedge against increases in price level thus their prices are not affected. Adrangi et al., (2000) studied the relationship between inflation rates and stock

returns in Brazil. Using correlational analysis, the study found there was a negative correlation between inflation and individual stock returns. In their conclusion, they stated that inflation may adversely affect real stock returns because such pressures threaten future profits.

2.2.3. Interest Rates

Interest rates play a key role in the macroeconomic environment because they determine the rates or return that was required by investors on their investments and the rates at which lenders lend their funds to firms. The effect of interest rates on stock returns has been the subject of many studies most of which focus on its effect on stock returns. An increase in interest rates has been found by most researchers to cause a decline in stock prices hence making the discounted cash flows of firms to be less valuable. The overall effect of an increase in the level of interest rates has therefore been seen to reduce the level of investments and level of market returns (Eita, 2011).

2.3.4 Investor's Perceptions

Stock returns are also explained by the perceptions of the investors. The perceptions of investors are usually demonstrated during many seasons. For example during the festive season, a fall in prices of shares is usually expected and because of this, some shareholders are compelled to redeem their share before the festive season starts (Sunde & Sanderson 2009). Investor's level of confidence in the direction of the economy and policies are also determinants of the share prices. Shauna (2003) stated that the land reform program, social unrest and policy reversals experienced in the period between

1997 and 2001 had a negative effect on the stock market and because of this uncertainty investors predicted a fall in the stock returns.

2.4 Empirical review

Banz (1981) in his study on the relationship between return and market value of common stock selected a portfolio similar to that of Black and Scholes and studied the relationship over a forty year period (1926-1975) on the New York Exchange market (NYSE) common stocks. The results showed on average small NYSE firms had a significantly larger risk adjusted return than larger NYSE firms over a forty year period. This effect was not linear in the market proportion but it was more pronounced in smaller firms. In his conclusion he suggested that it could not be determined whether it was size alone or the size factor could be a proxy for other factors which were not tested in the model. Roll (1991) suggested that stocks of larger firms were traded more frequently than those of smaller firms and this could provide an explanation why the estimates of systematic risks of the daily stocks would be biased downwards.

Similar results were recorded by Reinganum (1998). He undertook a study of 1200 us stocks for the period 1962- 1975 on the size, prices and dividends of the selected stocks and categorized them into ten size categories. In his results, he found out that the smallest stocks yielded a 12.5 percent abnormal returns on an annual basis and the larger stocks had negative abnormal returns of 8.6 percent and He termed this as size effect. Keim (2003) examined the empirical relation between abnormal returns and market values of AMEX and NYSE. The study period covered was between 1963 and 1979 at the NYSE

market on the NYSE and AMEX common stocks. A ranking of the firms was made based on the market value of common equity. In his results, he found out that there was evidence of a negative relationship between abnormal returns and firm size. Other studies conducted examined more closely the time-series patterns of portfolio returns as measured by market capitalization.

Brown et al., (2014) undertook to study this effect on an annual basis and from his analysis his results showed that both the magnitude and the direction of the size effect kept on changing from one period to the other. Lakonishok and Smidt (2005) in their study used the daily stock data of the Chicago tape for the period 1970-1981. Stocks were divided into 10 categories and returns were calculated daily over the last five days and the first four days around the turn of the year. Their findings showed that the returns of small companies were high around the turn of the year as compared to the returns of larger firms around the turn of the year.

Stehle (2013) took to study the small size effect on the German stock market. He selected the study period between 1954 and 2000. His study sample was between 106 and 297 stocks listed on the market. In his results he noted that the size effect in Germany was only modest in the international comparison and relatively volatile. However he also noted that the German stock market had a relatively small number of firms hence even the “small” firms belonged to the top 300 by size. Berges, McConnell and Schlarbaum (1984) undertook a study to examine monthly returns of a sample of 391 stocks listed and traded on the Toronto and Montreal Stock Exchanges for the period ranging from 1950 to

1980. The study 13 estimated average returns to five portfolios ranked on the market values of outstanding stock. The results of the study showed that average returns were high in January and most especially for stocks of small firms.

Jayen (2014) in his study of the comparison between performance of small and large firms in both developing and developed markets over a twelve year period (1967-1979) sought to explore the size effect over time. He used T-tests to test the difference between returns on the different stocks. The results of the study showed that small firms no longer generate significantly different returns as compared to large firms. Similar results were found out by Brown, Kleidon and Marsh (2014) who took to examine the behaviour of size effect over time. The study used data from 1967-1979 and found that the risk-adjusted average returns to portfolio ranked on size are linearly related to the logarithm of the size variable, but that the magnitude and sign of that relation are not constant within that period. The size effect seemed to imply a negative excess return for small firm stocks between 1969-1973 and a positive excess returns between 1974-1979.

Ndungu (2003) undertook an empirical investigation of the size effect at the NSE. The study period selected was from January 1991 to December 2002 and the sample data was all the equity stocks listed and traded at the market. Securities were ranked and divided into five groups according to the betas as estimated in order that equally weighted control portfolios for each group would be calculated and the market betas for all securities were determined. Size of the firm was determined by market capitalization which was given by multiplying the total outstanding number of shares at the end of the previous period by

the market value of quoted shares. The analysis concluded that there was presence of the small firm effect consistent with the findings of Banz (1981).

Oluoch (2003) conducted a study aimed to determine whether the small size effect is present at the NSE. The study sampled the firms listed on the equity section of the NSE. Data analysis was conducted using the Ordinary Least Squares regression model. From the result findings, He showed that there was no prevalence of the market anomalies at the NSE. However utilized the firms quoted at the equity section of the NSE and used OLS regression. However, descriptive mean statistics indicate that small firms have higher mean returns than the medium sized firms and the large firms and the market on average.

Lukale (2007) in his study undertook an empirical investigation to examine the relationship between size effect and January effect at the NSE. The study period selected was from 1999 to 2006 a period of 8 years. Out of a population of 54 firms, 46 companies were selected to form the study sample. Monthly returns were then calculated for each of the ten portfolios selected. His research findings show that there is an inverse relationship between the size of the firm and the stock returns and that stock returns in January were higher than any other returns recorded in the other months.

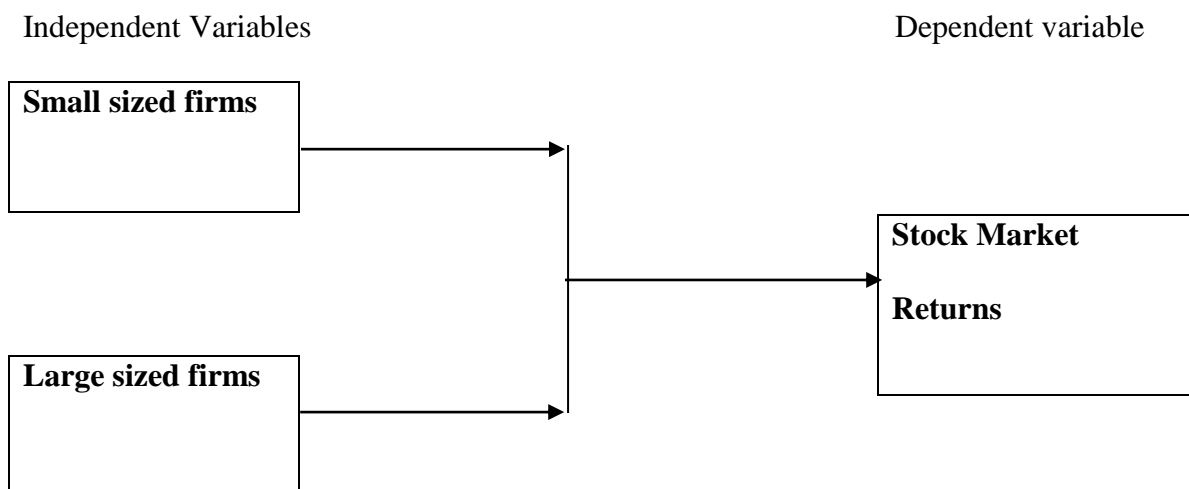
Locally, Mghendi (2014) tested the small firm effect at the Nairobi Securities exchange (NSE) market using a descriptive research design. The total population of the study consisted of 62 firms listed at the NSE as at 31st December 2013. She used the quartile

portfolio as used by Berk (1997) whereby listed companies were arranged in an ascending order according to market value and then divided into four portfolios. She then used the NASI (Nairobi Securities exchange All share Index) secondary data for the years 1st January 2008 to 31st 16 December 2013. Data analysis was conducted using the regression model in which the size variable was determined by market capitalization of the listed firms. The results of the analysis showed that there is indeed a small firm effect at the Nairobi Securities exchange.

2.5 Conceptual Framework

Based on previous studies, research shows that in some instances there exists a small firm effect in stock markets and other researches show that the small firm effect is not present. The generally expected relationship between these variables, which is assumed by this study, is that small-sized firms are likely to produce higher stock market returns as compared to large-sized firms.

Figure 2.1: The Conceptual



Source: Author, 2016

Size of the firm is the dependent variable and was measured by market capitalization. The firms were classified into two categories, small sized firms and large sized firms. Monthly stock market returns was the dependent variable.

2.6 Summary of Literature Review

This chapter has presented literature as reviewed by other scholars and researchers on subjects related to the existence of small firm effect on stock market returns at the international and local level. Existing studies (Banz, 1991, Keim, 2003; Lakonishok and Smidt, 2005; Brown, Kleidon and Marsh, 2014; Jayen, 2014) have been done on international arena studied the small size effect on the various Stock exchange markets. Locally, a number of studies have been done (Oluoch, 2003; Lukale, 2007 and Mghendi, 2014). The studies show that little has been done in relation to the small firm effect especially at the Nairobi Securities exchange. This study is hence aimed at establishing whether the small firm effect exists at the NSE.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This study aimed at investigating the small firm effect at the Nairobi Securities Exchange market. This chapter explains the overall methodology that was used to collect the data to meet the objectives of the study.

3.2 Research Design

The study adopts a descriptive design. Descriptive design approach involves calculating measures of central tendency like mean and variability like (Cooper & Schindler, 2003). Kothari (2004) observe that descriptive research is normally outlined with the aim of providing a general picture of a given situation as it unfolds naturally. It is normally used to make a justification of current practice and make objective judgment and also help develop key theories. This design allows the researcher to measure and analyze the data. The relationship between the variables was studied in detail so as to make an objective and conclusive findings of the research problem.

3.3 Population

The target population for this study is all the 65 firms listed at the Nairobi Securities Exchange Equity section as at 31st December 2015.

3.4 Sample Design

To come up with the sample size, the study used quartile portfolios as used by Berk (1997). All the 65 listed equity firms as at 31st December 2015 was arranged in descending order based on market values and then divided into four Categories. Category one consisted of the largest firms according to market capitalization while category four consisted of the smallest firms. These two categories formed the sample size of the study. Category two and three was eliminated to ensure significant differences between the two size classes.

3.5 Data Collection

The study used secondary data which is obtainable from the Nairobi Securities Exchange database. The researcher collected monthly stock prices for all the sampled stocks. The data to be obtained covered the period from 1st January 2008 to 31st December 2015. The researcher consulted the annual financial reports of sampled firms to get data on dividends.

3.6 Data Analysis

Data analysis is developed to deal with manipulation of the information that has been gathered so as to present the evidence (Singleton et al., 2003). The data was examined using descriptive, correlation and regression analyses. Regression and correlation analysis was applied to show the relationship between variables. Various tables, charts and bar graphs and diagrams were used to present the data for easy interpretation.

3.6.1 Analytical Model

Using the collected data, the researcher conducted a regression analysis to establish the extent of the effect of small size on stock market returns. The population of the 65 listed stocks is divided into 4 quartiles as per market capitalization (Berk, 1997). Market capitalization is calculated as the average shares outstanding multiplied by the closing price for each month. We used 2 quartiles; Category One consisting of the largest firms as per market capitalization and Category Four consisting of the smallest firms as per market capitalization. The researcher considered the monthly stock and portfolio returns (category returns) and compare them to the market return derived from the NASI. We are using the NASI as our market proxy.

The study used the Sharpe- Linter model below for stock returns:-

$$R_s = R_f + \beta_s (R_m - R_f)$$

Where: R_s = Return on the stock
 R_f = Risk free rate of return
 R_m = Expected market return
 β_s = Beta of security

Where:
$$\beta_s = \frac{\text{Cov}(R_s, R_m)}{\text{Var}(R_m)}$$

Monthly indices points into monthly market returns as per below:-

$$R_m = \frac{NASI_{t+1} - NASI_t}{NASI_t}$$

Where: R_m = NASI return for month t, where t=1, 2,.....12

$NASI_{t+1}$ = NASI at the end of the month

$NASI_t$ = NASI at the beginning of the month

The researcher used 24 months of former stock and market return data to establish pre-ranking betas for each portfolio. This is so as to differentiate between the small size effect and the systemic risk effect and determine excess returns as per Fama and French (1995). The weighted average returns of the stocks and portfolios then calculated over the study period. The researcher then regress the beta portfolio returns against the market returns and rank them. The same was tested for significance.

3.6.2 Tests of Significance

Correlation Coefficient (r) was computed to determine the strength and direction of the relationship between the dependent variable (stock market returns) and each of the Independent variables. Coefficient of determination (R square) was used to measure the percentage of change in the explained variable that that is caused by the explanatory variables. If F calculated was less than the table value then the decision will be there will be no statistical evidence of significance correlation at 5% level of significance. T test was used to test for the significance of the association between stock market returns and each of the explanatory variables.

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents the analysis and discussion of the findings from the secondary data collected from the Nairobi Securities Exchange. The study sought to investigate the existence of small firm effect at the Nairobi Securities Exchange. The secondary data for analysis was gathered from the firms listed at the NSE. The listed stocks were divided into 4 quartiles based on market capitalization. The study used only two quartiles (quartile one and quartile four) in the analysis. Quartile One consisted of the largest firms while Quartile Four consisted of the smallest firms as per market capitalization. Analysis of the data was done with the aid of SPSS (version 21) and Microsoft's Excel (2013). Regression and correlation analysis were used to show the relationship between market returns and small firm stock returns. The findings of the study presented in form of tables and charts for easy interpretation.

4.2 Descriptive Statistics

The section discusses the stock returns of the small firms, big firms and the market returns. The study further discusses the abnormality of the market stock returns and the cumulative abnormality. The detailed stock returns, abnormal returns and cumulative stock returns are as discussed in the subsequent sub-sections.

4.2.1 Small Firms Stock Returns

The study sought to evaluate the stock returns of the small firms listed at the NSE based on their capitalization. The study findings are as shown in Table 4.2.1.

Table 4.2.1: Small Firms Stock Returns

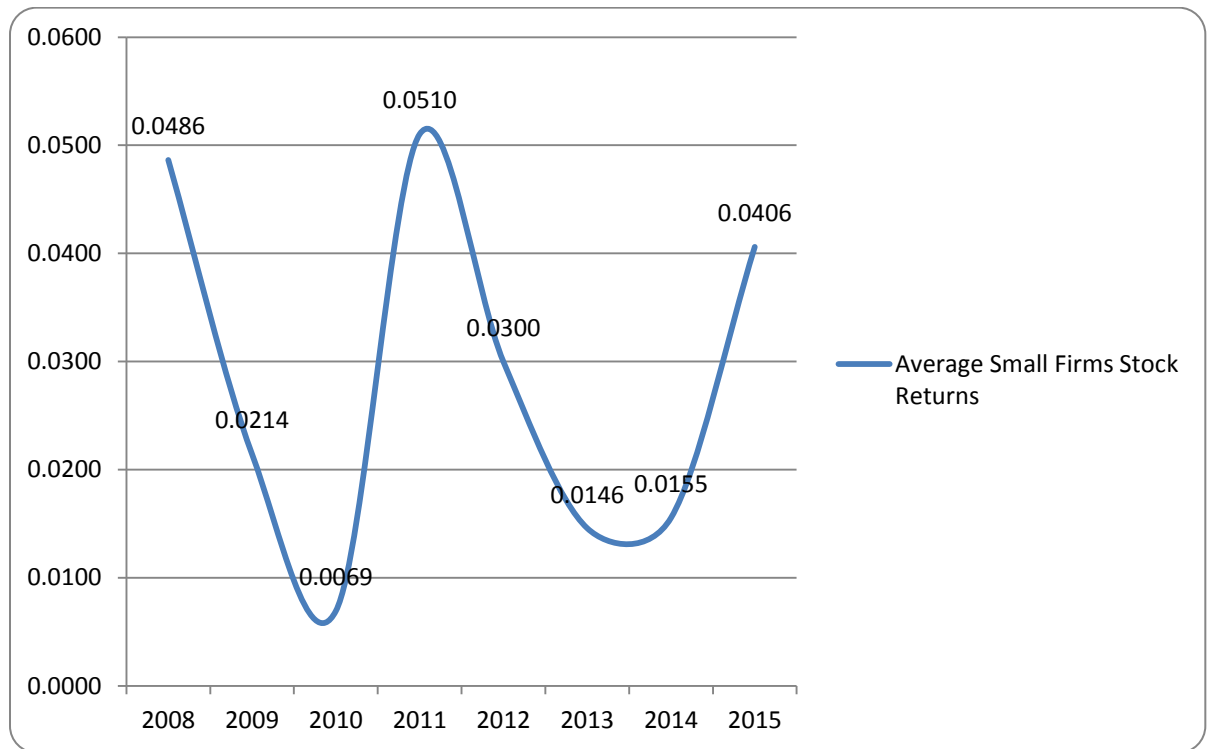
Month	2008	2009	2010	2011	2012	2013	2014	2015
Dec	0.0382	(0.0005	0.0205	0.0194	0.0348	0.0432	0.0360	0.0239
Nov	0.0071	0.0206	0.0209	0.0110	0.0299	0.0517	0.0271	0.0223
Oct	0.0030	(0.0114	0.0506	0.0958	0.0463	(0.0108	0.0082	0.0028
Sep	0.2193	0.0142	(0.0040	(0.0036	0.0159	(0.0024	0.0441	0.0822
Aug	0.1051	0.0351	(0.0017	0.0968	0.0277	(0.0121	0.0019	0.0134
Jul	0.0571	0.0616	0.0327	0.1036	0.0379	0.0454	(0.0022	0.0604
Jun	0.0983	0.0194	0.0006	0.0869	0.0284	(0.0088	0.0194	0.1086
May	0.0065	(0.0866	(0.0009	0.0427	0.0298	0.0916	0.0247	0.0233
Apr	0.0203	0.0136	0.0028	0.0358	0.0355	(0.0197	0.0298	0.0808
Mar	(0.0583	0.0315	(0.0248	(0.0063	0.0182	0.0276	(0.0080	0.0407
Feb	0.0563	(0.0545	(0.0240	0.0845	0.0362	(0.0368	0.0117	0.0354
Jan	0.0308	0.2142	0.0104	0.0456	0.0191	0.0062	(0.0062	(0.0064
Mean	0.0486	0.0214	0.0069	0.0510	0.0300	0.0146	0.0155	0.0406
Std dev	0.0695	0.0727	0.0218	0.0410	0.0090	0.0373	0.0172	0.0353
Max	0.2193	0.2142	0.0506	0.1036	0.0463	0.0916	0.0441	0.1086
Min	(0.0583	(0.0866	(0.0248	(0.0063	0.0159	(0.0368	(0.0080	(0.0064
Skewnes	1.226	1.556	0.434	-0.057	-0.050	0.699	0.109	0.657
Kurtosis	2.754	4.723	0.209	-1.672	-0.366	-0.106	-1.225	-0.481

Source: Research Findings (2016)

The stock returns for small firms had been fluctuating heavily over the study period (2008-2015). The year 2010 recorded the lowest stock returns of ($M= 0.0069$, $SD= 0.0218$) while the year 2011 recorded the highest stock returns ($M= 0.0510$, $SD= 0.0410$). Most of the values recorded skewness and kurtosis values within the range of ± 1.96 indicating that the data was normally distributed. This was with the exception of the years 2008 and 2009 where kurtosis values of 2.754 and 4.723 were recorded respectively indicating possible presence of outlier values. It also implies that the values are not

widely spread around the mean. The trend of small firms' stock returns over the study period is as shown in Figure 4.2.1.

Figure 4.2.1: Small Firms Stock Returns



Source: Research Findings (2016)

4.2.2 Big Firm Stock Returns

The study sought to evaluate the stock returns of the big firms listed at the NSE based on their market capitalization. The study findings are as shown in Table 4.2.2.

Table 4.2.2: Big Firm Stock Returns

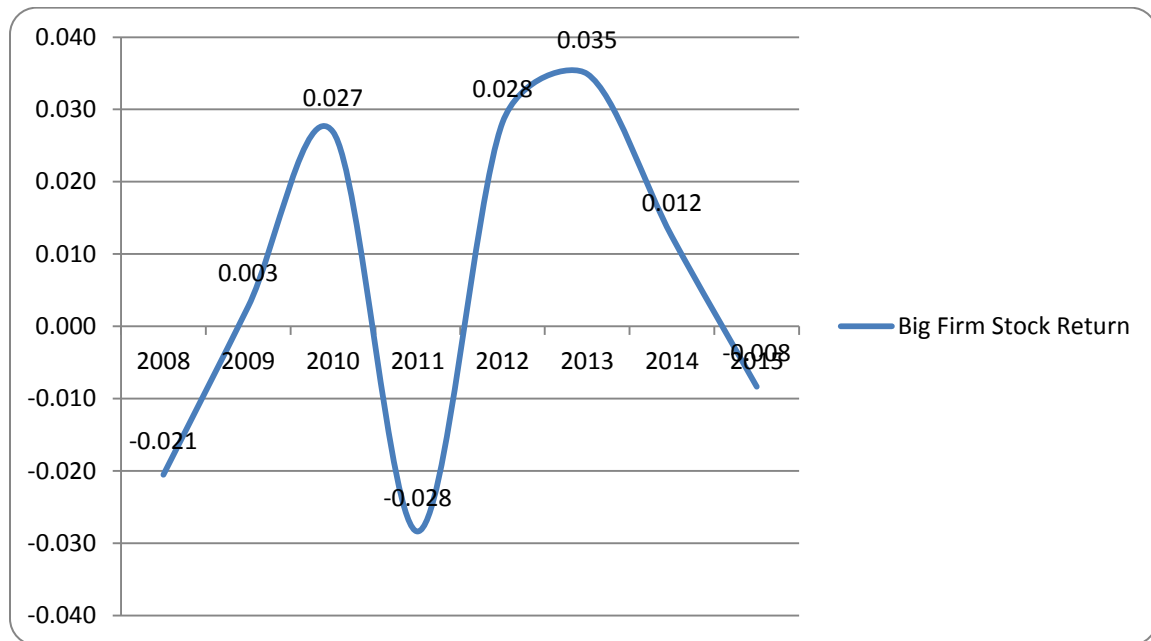
Month	2008	2009	2010	2011	2012	2013	2014	2015
Dec	0.0293	0.0049	(0.0019)	0.0256	0.0289	(0.0320)	(0.0023)	0.0155
Nov	0.0354	0.0533	(0.0425)	(0.0877)	0.0046	0.0595	0.0254	0.0451
Oct	(0.2155)	0.0142	0.0348	0.0480	0.0504	0.0463	(0.0258)	(0.0656)
Sep	(0.1004)	(0.0156)	0.0312	(0.0889)	0.0321	0.0616	0.0349	0.0289
Aug	(0.0413)	(0.0510)	(0.0185)	(0.0969)	0.0168	(0.0236)	0.0412	(0.0377)
Jul	(0.0925)	0.0066	0.0278	(0.0771)	0.0311	0.0563	0.0088	(0.0974)
Jun	0.0302	0.1876	0.0300	(0.0198)	0.0289	(0.0827)	0.0011	0.0141
May	0.0096	0.0151	0.0244	(0.0103)	0.0204	0.0739	(0.0062)	(0.0639)
Apr	0.1388	(0.0106)	0.0675	0.0523	0.0468	0.0014	0.0503	(0.0109)
Mar	(0.0402)	0.1263	0.0663	(0.0741)	0.0194	0.1029	0.0201	(0.0034)
Feb	0.0000	(0.2136)	0.0132	(0.0238)	0.0454	0.0329	0.0475	0.0597
Jan	0.0000	(0.0845)	0.0909	0.0123	0.0134	0.1226	(0.0461)	0.0155
Mean	(0.0205)			(0.0284)				
Std dev								
Max				0.053				
Min		(0.214)	(0.0425)	0.0969)		(0.0827)	(0.0461)	
Skewne	-	-	-	0.15320	0.13730	-	-	-0.5156
Kurtosi	1.627	1.729	0.049	-1.585	-0.752	-0.087	-0.354	-0.674

Source: Research Findings (2016)

The study found out that the big firms recorded relatively poor results compared to the returns of the small firms. For instance, the big firms recorded negative average returns of ($M = -0.0205$, $SD = 0.0883$) and ($M = (0.0284)$, $SD = 0.0553$) for the years 2008 and 2011. The small firms recorded average negative stock returns for the years 2008 and 2011 of ($M = 0.0486$, $SD = 0.0695$) and ($M = (0.0510)$, $SD = 0.0410$). The big firms recorded the highest stock returns ($M = 0.0349$, $SD = 0.0592$) in the year 2010. Through all the years, skewness and kurtosis values recorded were within the range of ± 1.96 indicating that the data extracted from the big firms listed at the NSE was normally distributed with no

possibility of extreme values. The trend of small firms' stock returns over the study period is as shown in Figure 4.2.2.

Figure 4.2.2: Big Firm Stock Returns



Source: Research Findings (2016)

4.2.3 Market Stock Returns

In this sub-section, the study sought to establish the market stock returns. NSE All Stock Index (NASI) was used as the proxy for the market stock return. The study analyzed the stock returns of the big firms for the years 2008-2015. The results of the study are as shown in Table 4.2.3 below.

The study established that the market recorded both positive and negative stock returns over the study period. The highest market return was recorded in the year 2011 with an

average stock return of ($M= 0.0510$, $SD= 0.0410$) followed by the year 2008 when a stock return of ($M= 0.0486$, $SD= 0.0695$). The lowest stock return were recorded in the year ($M= 0.0486$, $SD= 0.0695$).

Table 4.2.3: Market Stock Returns

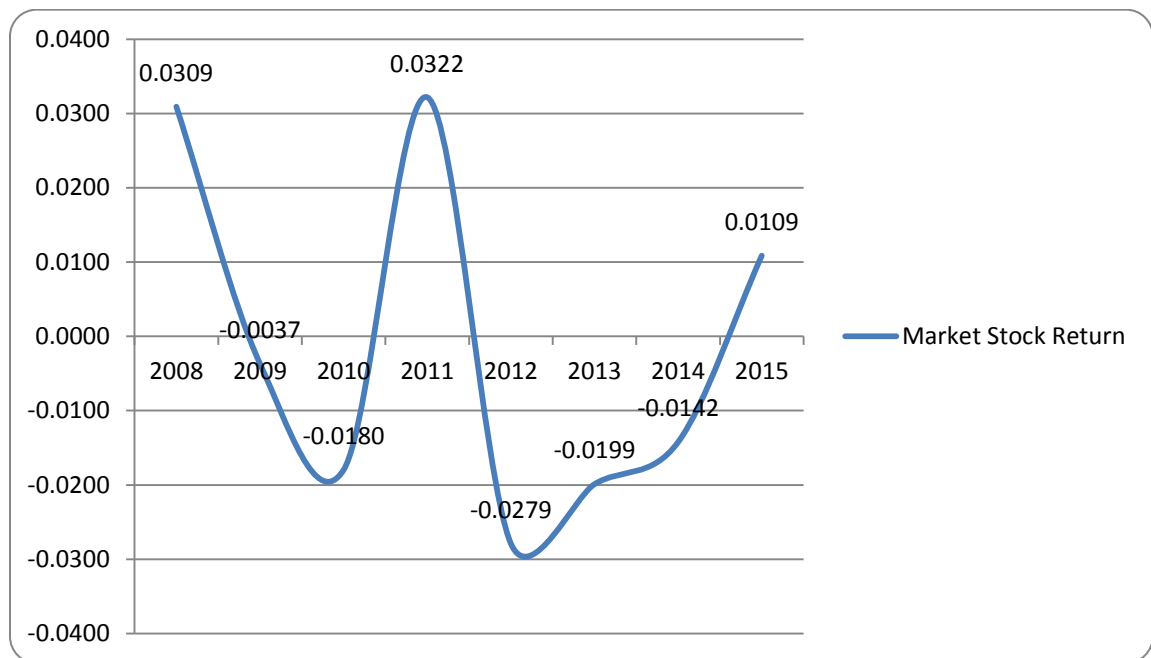
Month	2008	2009	2010	2011	2012	2013	2014	2015
Dec	0.0160	-0.0350	0.0014	-0.0130	-0.0210	0.0210	0.0150	-0.0130
Nov	-0.0285	-0.0049	0.0019	-0.0250	-0.0280	0.0331	0.0023	-0.0153
Oct	-0.0342	-0.0506	0.0444	0.0962	-0.0046	-0.0562	-0.0247	-0.0431
Sep	0.2747	-0.0140	-0.0336	-0.0458	-0.0479	-0.0442	0.0265	0.0702
Aug	0.1116	0.0159	-0.0302	0.0976	-0.0311	-0.0580	-0.0337	-0.0280
Jul	0.0431	0.0537	0.0189	0.1073	-0.0165	0.0242	-0.0396	0.0391
Jun	0.1019	-0.0066	-0.0270	0.0835	-0.0301	-0.0533	-0.0087	0.1080
May	-0.0293	-0.1580	-0.0291	0.0202	-0.0281	0.0902	-0.0011	-0.0139
Apr	-0.0096	-0.0149	-0.0238	0.0104	-0.0200	-0.0688	0.0062	0.0683
Mar	-0.1219	0.0107	-0.0632	-0.0497	-0.0447	-0.0014	-0.0479	0.0110
Feb	0.0418	-0.1121	-0.0622	0.0800	-0.0191	-0.0933	-0.0197	0.0034
Jan	0.0054	0.2717	-0.0130	0.0244	-0.0434	-0.0319	-0.0453	-0.0563
Mean	0.0309	(0.0037)	(0.0180)		0.0279)	(0.0199)	(0.0142)	0.0109
Std dev	.0993							0.0504
Max	.2747	0.2717			0.0046)			0.1080
Min	(0.1219)	(0.1580)	(0.0632)	(0.0497)	(0.0479)	(0.093)	(0.0479)	(0.0563)
Skewnes	1.226	1.556	0.434	-0.0575	-0.0497	0.699	0.109	0.657
Kurtosis	2.754	4.724	0.209	-1.672	-0.366	-0.106	-1.225	-0.433

Source: Research Findings (2016)

The study recorded skewness and kurtosis values falling within the acceptable range of ± 1.96 indicating that the data for market return was normally distributed except for the years 2008 and 2009 where kurtosis values of 2.754 and 4.724 were registered implying

that the stock returns for those two years were not normally distributed. The trend of market stock returns as proxied by NASI is as shown in Figure 4.2.3.

Figure 4.2.3: Market Stock Returns



Source: Research Findings (2016)

4.2.4 Abnormality of Stock Returns

In order to establish the abnormal returns of the market, the difference between the market actual stock returns and expected returns were computed using Sharpe- Linter model. The study findings revealed that there were high levels of variability in abnormal returns over the study period. This implies that the stocks were highly volatile. The highest abnormal return of 0.0579 was recorded in the year 2012 while the lowest abnormal return (0.0188) was recorded in the year 2011. However, these abnormal

returns were less than 1 implying that none of the investors benefited during this period.

The results for the abnormal returns are as shown in detail in Table 4.3.

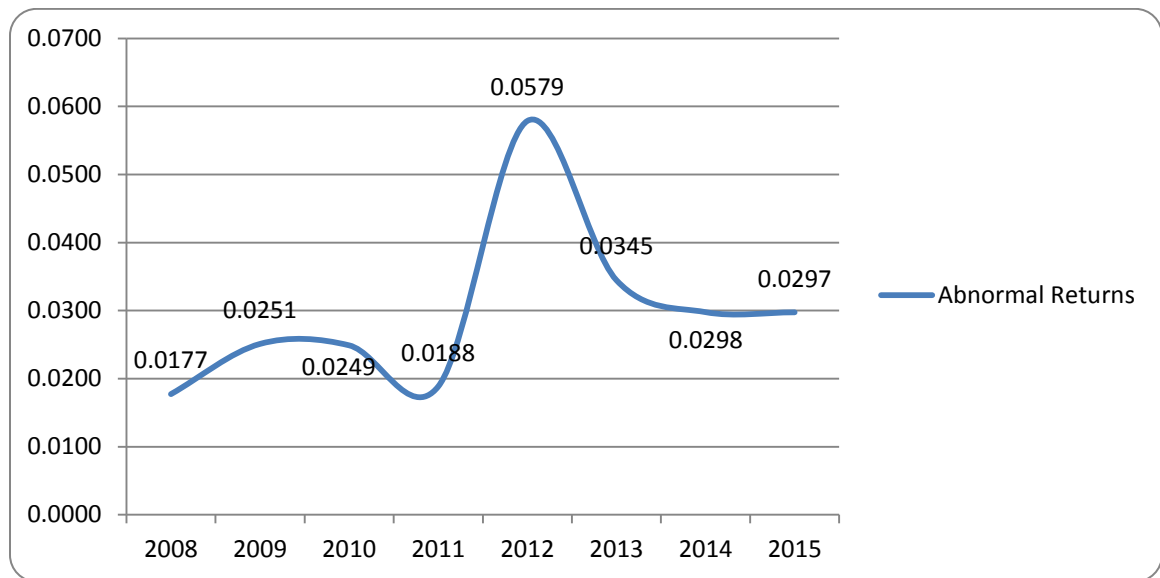
Table 4.3: Abnormality of Stock Returns

	2008	2009	2010	2011	2012	2013	2014	2015
Dec	0.022	0.035	0.019	0.032	0.056	0.022	0.021	0.037
Nov	0.036	0.025	0.019	0.036	0.058	0.019	0.025	0.038
Oct	0.037	0.039	0.006	0.000	0.051	0.045	0.033	0.046
Sep	-	0.028	0.030	0.042	0.064	0.042	0.018	0.012
Aug	-	0.019	0.029	-0.001	0.059	0.046	0.036	0.041
Jul	0.014	0.008	0.014	-0.004	0.054	0.021	0.037	0.021
Jun	-	0.026	0.028	0.003	0.059	0.044	0.028	0.001
May	0.036	0.071	0.028	0.022	0.058	0.001	0.026	0.037
Apr	0.030	0.028	0.027	0.025	0.056	0.049	0.024	0.013
Mar	0.064	0.021	0.038	0.043	0.063	0.029	0.040	0.030
Feb	0.014	0.058	0.038	0.005	0.055	0.056	0.031	0.032
Jan	0.025	-0.058	0.023	0.021	0.063	0.038	0.039	0.050
Mean	0.018	0.025	0.025	0.019	0.058	0.034	0.030	0.030
Std dev	0.030	0.031	0.009	0.018	0.004	0.016	0.007	0.015

Source: Research Findings (2016)

The trend of the abnormality over the study period is as shown in shown in Figure 4.3.

Figure 4.3: Average Abnormal Returns



Source: Research Findings (2016)

4.5 Inferential Statistics

The research sought to establish the relationship between market returns and small firm stock returns. NSE All Index (NASI) was used as the proxy for market stock returns and was regressed against the small firm and big firm stock returns. Regression analysis was conducted using Statistical Package for Social Sciences (SPSS Version 21).

4.5.1 Model Summary

The general findings of the study are as shown in the model summary Tables 4.5.1.

Table 4.5.1 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.982 ^a	.965	.964	.0121114
a. Predictors: (Constant), Big Firm Returns, Small Firm Returns				

Source: Research Findings (2016).

The results of regression analysis revealed that there is a very strong relationship ($R=0.982$) between market returns and small firm stock returns. The adjusted R-Square value of 0.964 implies that 96.4% of the total variance in market stock returns can be attributed to changes in small firm stock returns and big market stock returns.

4.5.2 Coefficients of Determination

Coefficients of determination were used to indicate the direction of the relationship between the dependent and the independent variables. A significant level of less than 5% was used to signify statistically significant findings. The findings are shown in Table 4.3.2.

Table 4.5.2: Coefficients of Determination

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.041	.001		-27.745	.000
	Small Firm Returns	1.398	.028	.981	50.257	.000
	Big Firm Returns	-.014	.020	-.014	-.695	.489
a. Dependent Variable: Market Returns						

Source: Research Findings (2016).

It can be said with 95% confidence that only Small Firm Stock Returns ($t= 50.257$, $p= 0.000$) has a positive and statistically significant effect on market stock return. Big Firm Returns ($t= 0.580$, $p= -0.695$) was found to have a negative but statistically insignificant effect on market stock return.

The equation for the regression model is expressed as:

$$Y = \beta + \beta_1 X_1 + \beta_2 X_2 + \epsilon$$

$$Y = -0.041 + 1.398X_1 - 0.014X_2$$

Where:

Y= Market Return

X_1 = Small Firm Return

X_2 = Big Firm Return

These findings indicate that there is a positive and statistically significant small firm effect on the stock listed at NSE. The constant value of -0.041 implies that market stock return would be negative 0.041 in the absence of small firms stocks in the market. Increase in small firm return by 1 unit would lead to increase in market return by 1.398 while a unit increase in big firm return would lead to decrease in market return by 0.014. For the purpose of estimating the regression equation, the researcher estimated the stochastic error term to be zero.

4.5.3 Analysis of Variance (ANOVA)

In order to verify the goodness of fit and the reliability of the regression model, the researchers carried out an analysis of variance (ANOVA). The findings are as tabulated in Table 4.5.3.

Table 4.5.3: Analysis of Variance (ANOVA)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.375	2	.188	1.279E3	.000 ^a
	Residual	.014	93	.000		
	Total	.389	95			
a. Predictors: (Constant), Big Firm Returns, Small Firm Returns						
b. Dependent Variable: Market Returns						

Source: Research Findings (2016).

The results of the ANOVA statistics revealed that the regression model had a significance level of 0.0%. This implies that the researcher can be 100% confident that the regression

model is highly reliable and is fit for the data collected in regard to how small and big firms returns affects the market return.

4.6 Discussion of the Research Findings

The study sought to investigate the existence of small firm effect at the Nairobi Securities Exchange. NSE All Index (NASI) was used as the proxy for market stock returns and was regressed against the small firm and big firm stock returns. The study established that there is a very strong relationship ($R= 0.983$) between market returns and small firm stock returns. The adjusted R-Square value of 0.964 implies that 96.4% of the total variance in market stock returns can be attributed to changes in small firm stock returns and big market stock returns. Further, ANOVA statistics established that the regression model was highly reliable and good for data at 100% confidence. The study established that there is a positive and statistically significant small firm effect on the stock listed at NSE.

These findings corroborate existing literature. Ndungu (2003) undertook an empirical investigation of the size effect at the NSE and concluded that there was presence of the small firm effect at the NSE. Oluoch (2003) conducted a study aimed to determine whether the small size effect is present at the Nairobi Securities Exchange (NSE) and established that small firms have higher mean returns than the medium sized firms and the large firms and the market on average. Mghendi (2014) tested the small firm effect at the Nairobi Securities Exchange (NSE) market using a descriptive research design found out that there is indeed a small firm effect at the Nairobi Securities exchange.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter discusses the summary of findings, the conclusions drawn by the study, recommendations for policy change and suggestions for future research. The study then presents the major limitations of the study.

5.2 Summary of Findings

The study sought to investigate the existence of small firm effect at the Nairobi Securities Exchange. The secondary data for analysis was gathered from the firms listed at the NSE. The listed stocks were divided into 4 quartiles based on market capitalization. The study used only two quartiles (quartile one and quartile four) in the analysis. Quartile One consisted of the largest firms while Quartile Four consisted of the smallest firms as per market capitalization. Analysis of the data was done with the aid of SPSS (version 21) and Microsoft's Excel (2013). NSE All Index (NASI) was used as the proxy for market stock returns and was regressed against the small firm and big firm stock returns.

The study established that there is a very strong relationship ($R = 0.983$) between market returns and small firm stock returns. The adjusted R-Square value of 0.964 implies that 96.4% of the total variance in market stock returns can be attributed to changes in small firm stock returns and big market stock returns. Further, ANOVA statistics established that the regression model was highly reliable and good for data at 100% confidence. The

study established that there is a positive and statistically significant small firm effect on the stock listed at NSE.

These findings corroborate existing literature. Ndungu (2003) undertook an empirical investigation of the size effect at the NSE and concluded that there was presence of the small firm effect at the NSE. Oluoch (2003) conducted a study aimed to determine whether the small size effect is present at the Nairobi Securities Exchange (NSE) and established that small firms have higher mean returns than the medium sized firms and the large firms and the market on average. Mghendi (2014) tested the small firm effect at the Nairobi Securities exchange (NSE) market using a descriptive research design found out that there is indeed a small firm effect at the Nairobi Securities exchange.

5.3 Conclusion

This study concludes that there is a positive and statistically significant small firm effect at the NSE. This implies that market stock returns are highly influenced by the stock of small firms. The stock investors who want to make profit in stock trading should invest the stocks of small firms.

5.4 Limitation of the Study

The researcher found it difficult to obtain the secondary data because the contact people at the NSE had busy working schedules which derailed the completion of the data collection process. The researcher makes extra effort in reminding respondent on the urgency of the data in order to meet academic deadlines.

The study was mainly dependent on secondary data available. This means that the accuracy of the data provided was dependent on the information available. This is however a general problem when dealing with secondary data. We countered the problem by crosschecking data from NSE and Capital Markets Authority.

This study was being undertaken within a limited period of 8 years. In order to come up with more conclusive findings and recommendations, the research should have been conducted over a longer period of time.

5.5 Recommendations

This study established that there exists small market effect at the Nairobi Securities Exchange. The researcher recommends that investors wishing to make more profit in stock trading should invest more on the stocks of the small firms listed at the NSE. In order to come up with more conclusive findings, a study should be undertaken considering a longer period of time such as 15 years as this might yield different results. This is because stock returns keep changing over time.

5.6 Suggestions for Further Research

In future, scholars should consider other ways of determining firm size other than using market capitalization only. For instance, firm size can be also established using total asset value. Moore (2005) successfully used this method in his study.

Further, this study should be replicated using value added portfolios to check small firm effect still exists. A reference would be when Mamun and Visaltanachoti (2005) used value added portfolios in their study; they established that there was no small firm effect.

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APPENDIX I: LARGE SIZE FIRMS

Quarter One	Capitalization
Kenya Commercial Bank RW	8.59M
Mumias Sugar	1.83M
Co-operative B	1.19M
Barclays Kenya	838.90K
Equity Bank	803.70K
Nic Bank	720.80K
Safaricom	495.00K
Kenya Airways TZ	340.50K
Cfc Stanbic	235.60K
Kengen	199.90K
East Africa Breweries	174.90K
British American	76.70K
Kenya Oil Co	60.70K
Diamond Ken	50.10K
Ea Cables	40.70K
Centum Invest	37.70K

Source: NSE (2016)

APPENDIX II: SMALL SIZE FIRMS

Small size firms	Capitalization
CarbacidInv	3.80K
Nairobi Exchange	3.30K
National bank Kenya	3.00K
Housing Finance	2.90K
Std Chartered Kenya	2.10K
Sasini	1.90K
Standard Group	1.90K
Sameer Africa	1.60K
Scangroup	1.20K
Olympia Capita	0.80K
Bamburi	0.40K
Ea Portland	0.20K
Limuru Tea	0.20K
Pan Africa Insurance	0.20K
Bat Kenya	0.10K
Total Kenya	0.10K

Source: NSE (2016)

APPENDIX III: NSE ALL STOCK INDEX (NASI)

Month/Year	Price	Month/Year	Price
Dec-08	73.37	Dec-09	71.64
Nov-08	71.28	Nov-09	71.29
Oct-08	68.84	Oct-09	67.68
Sep-08	87.75	Sep-09	66.73
Aug-08	97.54	Aug-09	67.79
Jul-08	101.74	Jul-09	71.43
Jun-08	112.11	Jun-09	70.96
May-08	108.82	May-09	59.75
Apr-08	107.78	Apr-09	58.86
Mar-08	94.64	Mar-09	59.49
Feb-08	98.6	Feb-09	52.82
Jan-08	99.13	Jan-09	67.17
Month/Year	Price	Month/Year	Price
Dec-10	97.82	Dec-11	68.03
Nov-10	98.01	Nov-11	66.33
Oct-10	102.36	Oct-11	72.71
Sep-10	98.92	Sep-11	69.38
Aug-10	95.93	Aug-11	76.15
Jul-10	97.74	Jul-11	84.32
Jun-10	95.1	Jun-11	91.36
May-10	92.33	May-11	93.21
Apr-10	90.13	Apr-11	94.18
Mar-10	84.43	Mar-11	89.5
Feb-10	79.18	Feb-11	96.66
Jan-10	78.15	Jan-11	99.02
Month/Year	Price	Month/Year	Price
Dec-12	94.86	Dec-13	136.65
Nov-12	92.2	Nov-13	141.17
Oct-12	91.78	Oct-13	133.24
Sep-12	87.38	Sep-13	127.35
Aug-12	84.66	Aug-13	119.96
Jul-12	83.26	Jul-13	122.86
Jun-12	80.75	Jun-13	116.31

May-12	78.48	May-13	126.8
Apr-12	76.91	Apr-13	118.07
Mar-12	73.47	Mar-13	117.91
Feb-12	72.07	Feb-13	106.91
Jan-12	68.94	Jan-13	103.5
Month/Year	Price	Month/Year	Price
Dec-14	162.89	Dec-15	145.7
Nov-14	163.27	Nov-15	143.47
Oct-14	159.23	Oct-15	137.28
Sep-14	163.45	Sep-15	146.92
Aug-14	157.94	Aug-15	142.8
Jul-14	151.69	Jul-15	148.39
Jun-14	150.37	Jun-15	164.41
May-14	150.2	May-15	162.13
Apr-14	151.13	Apr-15	173.2
Mar-14	143.89	Mar-15	175.11
Feb-14	141.05	Feb-15	175.7
Jan-14	134.66	Jan-15	165.8

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