IOSR Journal of Economics and Finance (IOSR-JEF)
e-ISSN: 2321-5933, p-ISSN: 2321-5925.Volume 10, Issue 3 Ser. III (May. – June 2019), PP 73-83
www.iosrjournals.org

The Effect of Firms' Inclusion in the NSE 20 Share Index on Share Performance in Kenya

Faith N. Nkuru[1], Stephen M.A. Muathe[2], Eddie Simiyu[3]
[1]*School of Business Kenyatta University*
[2]*School of Business Kenyatta University*
[3]*School of Business Kenyatta University*
Corresponding Author: Faith N. Nkuru

Abstract: *This paper provides an empirical analysis of Kenya as an emerging market that has a lot of potential of investment and is getting attention from investors both locally and internationally. Nairobi Securities Exchange 20 Share index represents a tool to measure market performance, market growth and facilitates maximisation of return on investment over a long – run perspective. The Nairobi Securities Exchange 20 Share index is constituted by the best performing firms. This paper analysed the effect of firms' inclusion in the Nairobi Securities Exchange 20 share index on share performance in Kenya. The study was anchored on Efficient Market Hypothesis supported by The Price Pressure Hypothesis and Traditional Information Hypothesis. The study employed explanatory research design. Target population of the study was 30 firms included in the Nairobi Securities Exchange 20 share index in the period between 2002 and 2014. The study used secondary data, collected from Nairobi Securities Exchange 20 share index markets report. The secondary data was collected using abstraction tool. The data which was obtained was analyzed using descriptive statistics, Buy and Hold event methodology. This study found out Average Cumulative Buy and Hold Abnormal Share Return after the firm inclusion in the Nairobi Securities Exchange 20 share index was significantly different from zero. The study recommends investors should invest in firms included in the Nairobi Securities Exchange 20 share index.*
Key Words: *Share Performance, NSE20 Share Index,Firms Inclusion*

Date of Submission: 06-06-2019 Date of acceptance: 21-06-2019

I. Introduction

Stock markets are a vital component for economic development as they provide listed companies with a platform to raise long-term capital and also provide investors with a forum for investing their surplus funds (Levine, 2008). Stock markets therefore encourage investors with surplus funds to invest them in additional financial instruments that better matches their liquidity preferences and risk appetite (Green &Russelle, 2011).

Developed markets have stock markets that allocate funds to firms and supports liquidity to investors (Xie, 2013). Share index are designed to represent the performance of premium listed main market companies, providing investors with a set of indices that measures the performance of the equity market (Maria & Asani, 2011). Inclusion in world class indices brings major benefits for companies listed on the securities exchange this is because indices are crucial for comparing performance against a peer company and support liquidity and capital raising (Profilet & Bacon, 2013).

In emerging markets when a firms is part of the benchmark share index series, it helps to build greater liquidity for main market companies by providing investors with clear and independent benchmarking of shares sectors and the markets as a whole (Tachiwou, 2010). Stocks that are newly included in the share index not only see a short term increase in their share prices, but trading volume increase in a permanent fashion following the event (Brook, Kappou, Stevenson & Ward, 2013). It also creates the basis for portfolio trading by both active and passive investors in a long run perspective.

The stock exchange market acts as a barometer for economic performance in the sense that, it assists to allocate the necessary capital needed for the consistent growth of an economy (Levin, 2008). Tachiwou (2010) argued that the determination of the overall growth of an economy depends on how efficiently the stock market performs in its allocative functions of capital.

In both the developed and emerging markets when a share is added to a market benchmark share index it immediately becomes subject to potential new sources of trading pressure (Mase, 2007). Likewise, when a firms share is removed from the index and continues to trade in the public market, the removal action followed by a decline in the share so that it becomes gradually less and less important within the index and therefore less involved in the arbitrage trading pressure (Lin & Kensinger, 2007).

Lynch and Mendenhall (2007) notes that when a firm is included in market share index, this reveals new firms specific information that results to change in demand. The fund managers will buy the added share and sell the deleted firms to rebalance their portfolio to the index changes (Chen *et al.,*2013). Therefore, this results to the share price and the trading volume temporarily going up since the demand for the share increases significantly. However, this effect of the index changes on the share price and trading volume is not permanent and tends to disappear in the long term (Hrazdil& Scott 2009).

In both the developed and emerging markets when a share is added to a market benchmark share index it immediately becomes subject to potential new sources of trading pressure (Mase, 2007). Likewise, when a firms share is removed from the index and continues to trade in the public market, the removal action followed by a decline in the share so that it becomes gradually less and less important within the index and therefore less involved in the arbitrage trading pressure (Lin & Kensinger, 2007).

Lynch and Mendenhall (2007) notes that when a firm is included in market share index, this reveals new firms specific information that results to change in demand. The fund managers will buy the added share and sell the deleted firms to rebalance their portfolio to the index changes (Chen *et al.,*2013). Therefore, this results to the share price and the trading volume temporarily going up since the demand for the share increases significantly. However, this effect of the index changes on the share price and trading volume is not permanent and tends to disappear in the long term (Hrazdil& Scott 2009).

1.1 Nairobi Securities Exchange

The Stock Securities exchange is an exceedingly fluid, dynamic and engaging entity. It facilitates thousands of transaction in the capital markets which occur simultaneously from traders striving to outbid and outsell each other. Nairobi Securities Exchange has experienced expansion in terms of market indices these include the Nairobi Securities Exchange 20 Share Index, Nairobi All Securities Index, AIG 27 Share Index, Financial Times Series Exchange Nairobi Securities Exchange 15 Share Index and Financial Times Series Exchange Nairobi Securities Exchange 25 index and NSE acts as a gauge by which investors measures the firms' performance and their portfolio. The Nairobi Securities Exchange 20 Share Index is the oldest and the major stock market index which tracks the performance of 20 best performing companies listed on the NSE. The companies are selected based on a weighted market performance for a 12 month period based on market capitalisation, number of shares traded, number of deals and turnover (NSE, 2014).

The NSE 20 Share Index is a price weight index calculated as a mean of the share performance of 20 public listed companies and it is also the benchmark index. The firms to be included in the NSE 20 share index are selected based on a weighted market performance during the period under review based the following criteria: first, trading activity measures the market capitalisation, share traded, deals/liquidity and turnover during the period under review which is weighed in the ratio of 4:3:2:1 respectively. Secondly, a company must have a free float of at least 20%. Thirdly, the minimum mandatory market capitalization of Ksh. 20 million and fourth, the company should ideally be a blue chip with superior profitability and dividend record (NSE, 2014).

1.2Nairobi Securities Exchange (NSE) 20 share

This index is constituted by the best performing firms with an objective of maximising shareholders value. Following firm's inclusion in NSE 20 share index, some firms shares have performed exceedingly well as result of inclusion (Osoro&Jagongo, 2013). However several firms are experiencing declining share performance and some firms have been excluded from the NSE 20 share index (NSE, 2014). For instance, Mumias Sugar, Kakuzi and Uchumi Supermarket were excluded in NSE 20 share index in the year 2014 due to poor performance (NSE, 2014).

Furthermore, the effect of share performance of firms inclusion, whether it is permanent or temporary is still of interest in finance empirical research. According to Sadeghi, (2011), Opiyo *et al.* (2014) and Kot, Leung and Tang (2015)firms' inclusion in the index resulted to positive share performance and that this effect was permanent. Conversely, Maria and Asani (2011) and Selvam, Indhumat and Lydia (2012) found a negative share performance and that this effect was temporary. In addition, to the mixed results, these past studies focused on share performance effect on short term and failed to consider long term effect and financial indicators that explained share performance effect on firms inclusion in the share index.

II. Literature Review

2.1 Theoretical Literature

The connection between firms inclusion and share performance can be explain in Efficient Market Hypothesis.Harris and Gural (1986) posit that it is impossible for anyone to earn the profit above average return by trading in the share market. This means that as all the new information about firms inclusion in the share index is already reflected in the current share prices and no investor could be able to outperform the market.

Fama (1992) classified EMH in its three forms (weak form, semi strong form and strong form) weak form, which mean that the investor cannot make a profit from purely relying on historical prices; semi strong form, where no investor is able to make an abnormal return by using publicly accessible information and strong form, where no investor is able to make an abnormal profit even when they have access to insider information.

According to EMH if the share price reflect the announcement of public information instantaneously and without bias, the market should be classified as semi strong form efficient. According to Barnes and Ma (2002) the investigation of semi strong form market efficiency has been limited to study of well developed share market. The investors might be able to beat the markets over a short period of time due to sheer luck, but that this should be impossible in the long run (Dhar&Chhaochharia, 2008). However, all relevant information is fully and immediately reflected in a security market price thereby assuming that an investor will obtain an equilibrium rate of return.

Claessens and Yafeh (2011) argue that when someone refers to efficient capital markets, they mean that security prices fully reflect all available information. If this will hold true in the financial markets then there would be no use of financial valuation models to find possible mispriced securities, since all securities are valued and traded at the price reflected by all available information.

This clearly is not the case in the emerging markets today the even though there is and has been a clear decrease in the cost of acquiring of information and trading. Therefore, according to the Efficient Market Hypothesisthe share performance will have no effect on announcement of firm inclusion in the share index. On the basis of this proposition, this study sought to establish whether share performance of firm inclusion in the NSE 20 share index had a neutral, permanent or temporal effect on share performance.

2.2 Empirical Review

When the firm is added to an index it experienced significant abnormal share returns during the announcement day of firms' inclusion in the Baltic Share Exchange index (Bankovica & Praņevics, 2007). The study investigation employed event study methodology. Daily trading data were collected from 2000 to 2006 of firms that were added in the Baltic Share Exchanges. The study found a significant abnormal share return of firms' inclusion in the Baltic Share Exchange. This study however, they did not explain whether the significant abnormal share return was permanent or temporal effect. The current study explained the effect of share performance whether permanent or temporal effect.

According to Hacibedel and Bommel (2006) there was a positive and a permanent impact in abnormal share return of shares included in the index. The study investigation employed Buy and Hold event study methodology. Additionally, the study results indicated that firms included in the index experienced increased abnormal share returns prior and post inclusion. These findings of the study were consistent with imperfect substitutability theory. This current study adopted Buy and Hold event methodology and will test the effect in an emerging market in Kenya.

Lin and Kensinger (2008) found out that there is a significant increase in both abnormal share return and trading volume of a share as a result of firm inclusion in the S & P 500 index. The study employed event study methodologies. Nonetheless, the study results showed that there was no statistical significant effect on abnormal share returns as a result of firms' inclusion in the index. This study however, they did not explain whether the significant abnormal share return was permanent or temporal effect. The current study explained the effect of share performance whether permanent or temporal effect.

Share return react positively as a result of firms additions to the index the study results indicated that shares added into the index experienced positive and abnormal share return (Duque & Madeira 2010).This study did not explain whether the results were positive or permanent or temporally. The current study explained the effect of share performance whether permanent or temporal effect.

Bildik and Gulay (2011) found out that shares included in the index generate positive returns and are characterized by high trading volume. The study adopted both buy and hold event-study and cross-sectional research methodology. This study adopted the buy and holds event study methodology and explained effect of inclusion.

Share return responded positively to index addition, the results indicated that there was a long term increase in share returns and liquidity of shares added to the index (Sadeghi 2011). The study employed event study methodology. This study used one year period. The findings of the study are consistent with the liquidity hypothesis. This study did not explain positive return by use of firm's specific financial indicators and this study did not adopted the buy and holds event study methodology which uses long term event. The current study adopted the buy and holds event study methodology and explained the effect of inclusion.

The shares in the NSE 20 share index do not exhibit significant positive abnormal returns but exhibit significance change in trading volume following inclusion into share index (Opiyo *et al.*, 2014). This study employed event study methodology. This study focused on Mumias Sugar Company Ltd this result cannot be generalised all firms included in the NSE 20 share index. The current study explained the effect of share performance whether permanent or temporal effect.

III. Research Methodology

The study adopted an explanatory research design. Robson (2002) argues that explanatory research is the systematic inquiry in which a researcher does not have direct control of the independent variables because their manifestations have already occurred. An explanatory research design is very appropriate where a researcher is attempting to explain how phenomena operates by identifying the underlying factors that cause change in it in which the case there is no manipulation of the independent variable (Kerlinger & Lee, 2000).

The target population for this study consisted of all firms included in the NSE 20 share index in Kenya for a period between January 2002 and December 2014. The NSE 20 Share index had included 32 firms from 2002- 2014 (NSE, 2015). These 32 companies were screened against various factors which include availability of data and suspension from NSE. Two companies were dropped for missing data thus retaining 30 companies to form the target population of the study. This study adopted a census approach because of the number of firms included in the NSE 20 during the period between January 2002 and December 2014 was small in number. According to Saunders *et al.*, (2009), a census approach enhances the quality of the data that will be collected by including certain information rich cases for the study that minimizes the sampling error. The study utilized secondary data that extracted from monthly share price lists, monthly market reports, provided by NSE.

3.2 Empirical Model

The study adopted a two stage model that is buy and hold event study that measured semi - strong foam efficiency by determining share return that was a measure of share performance. Simple and multiple regression models were used to determine the significant of the variables that were financial indicators.

3.2.1 Determining Share Return

The study adopted the buy and hold approach to measure and test long - term abnormal share return (Brown & Warner, (1985). The buy-and-hold abnormal share return (BHAR) is the difference between its actual share return and expected share return. This established how the share is performing before and after the firm inclusion on a long term basis. The monthly abnormal return was examined at the time from 12 months before through 12 month after the inclusion (Lyon, Barber &Tasia, 1999).

3.2.1.1 Determining Actual Share Return

To calculate the actual share returns, monthly share prices during the period 12 months trade period before and 12 months trading period after the firm inclusion was collected and tabulated for each of the 30 companies that were included in the NSE 20 share index during the period January 2002 to December 2014. For each of the companies, the actual return on each of the trading period in the event window was computed using the logarithmic model 1.

The logarithmic model calculates actual share return as the change in the natural logarithm of a share's price divided by the natural logarithm of a share's price at the beginning of a holding period. The log return model calculates actual share returns as the change in the market price of a share divided by the price of the share at the beginning of a holding period (Ang& Zhang, 2009). In this study, the actual share returns was computed by use of log return model as specified by model 1:

$ASRp = \log (P_1-P_0)/P_0$…….....Model 1

Where
ASRp = Actual Share Return on share p
P_1 =Price at the end of the holding period
P_0 =Price at the beginning of the holding period
In this study, the holding period is equivalent to one trading month at the NSE as adopted by Brown and Warner (1985) methodology on event studies.

3.2.1.2 Determining Expected Share Return

This study adopted market return model approaches to compute expected share returns because it is a more refined measure of the expected share return (Carhart, 1999). This model allowed the result to be compared with other studies that have utilized the market return model methodology.

The market return model is based on the assumption of a constant and linear relationship between individual share returns and the return of a market index. This study adopted market return model to calculate the expected share return as specified by Brown and Warner (1985) and later adopted by Bildik and Gulay (2011) and Maria & Asani (2014).

$ESR_p=\alpha+ ß_pR_m + \varepsilon_{p,t}$…….....Model 2

Where
ESR_p= Expected returns on share p
α = Constant term of share p
$ß_p$ = Beta coefficient of share p
R_m = Return on the NSE 20 share index
$\varepsilon_{p,t}$= Error Term

Beta (ß) is the slope of the regression line and indicates the relative risk of the share. The intercept (α) is the return a share earned when there were no changes in the market returns. The market return was based on a portfolio of all shares that constitute the NSE 20 share index.

3.2.1.3 Determining Buy and Hold Abnormal Share Returns

This study adopted market return model to calculate the buy and hold abnormal share returns as specified by Brown and Warner (1985) and later adopted by Bildik and Gulay (2011) and Maria & Asani (2014).
Model 3 was used to calculate buy and hold abnormal share return as follows:
$BHAR_{p,\,t} = [1+ AR_{pt}] - [1+ ER_{pt}]$…….....…… …….....Model 3

Where
$BHAR_{p,\,t}$= Buy and hold abnormal share return of an event share p on period t
AR_{pt} = is the actual return of the event share p on period t
ER_{pt} = is the expected return event share p on period t

Buy and hold abnormal share returns was computed for each month in the event period. The individual monthly's buys and hold abnormal share return was summed to compute the cumulative buy -and -hold abnormal share return from the beginning to the end of the event period. The cumulative buy and hold abnormal share returns was computed using the model4:

CBHASR = ∑MBHASR…….....…….....Model 4

Where
CBHASR = Cumulative buy and hold abnormal share returns
MBHASR = Monthly Buy and hold abnormal share returns

This cumulative buy and hold abnormal share return obtained from model 4 was averaged to obtain the average cumulative buy and hold abnormal share return. The averages cumulative buy and hold abnormal share return was computed using the following model:
ACBHASR = 1/N {∑MCBHASR}…….....….....Model 5

Where
ACBHAR = Average Cumulative buy and hold abnormal share returns
N = Number of observations in the sample
MBHASR = Monthly Buy and hold Abnormal share returns

The average effect of an announcement was examined because buy and hold event study methodology assume that other events were occurring in the capital market and averaging across all companies, thereby minimizing the effect of these other events. This allows for a better examination of the events under study (Ang& Zhang, 2013). Since statistical tests with a single event observation are not likely to be useful, the buy and hold abnormal share return observations was aggregated over the event period and across observations that obtained the average cumulative buy and hold abnormal share returns.

To achieve this objective, there was a need to determine whether the average cumulative buy and hold abnormal returns were statistically different from zero. This procedure used a *t* test statistic and tested the following hypothesis.
H_0: ACBHASR = 0
H_1: ACBHASR ≠ 0

Where ACBRASR = Average cumulative buy – and - hold abnormal share returns

To test the hypothesis, a critical *t* value read from the *t* distribution table was compared to an adjusted average cumulative buy-and –hold abnormal return that was obtained from model 5. model6 is referred to as the standardized residual *t* test and was developed by Patell (1976) and later adopted by Dodd & Warner (1983) and Lyon, Barber &Tasia (1999). The adjusted average cumulative buy –and-hold abnormal return that was obtained from the following model.
Tpatell = ACBHASR/ $^{\delta}$ACBHASR……...……..Model 6

Testing whether buy and hold abnormal share return of firms inclusion in the index were significant was carried out for the during of one year before inclusion and one year after inclusion and therefore, the procedure covered by model 6 was done to all firms included in the NSE 20 share index. To test whether the inclusion effect, share returns one year before were compared to share return one year after firms' inclusion in the NSE20 share index.

IV. Presentation and Interpretation of Result

The results of the analysis are presented as follows; Descriptive Sector Classification, Diagnostic Checks and Multiple Regression.

4.1 Descriptive Results

4.1.1 Sector Classification

Table 1: Sector classification of firms included in the NSE 20 share index

Sector	Frequency	Percent
Agricultural	5	16.67
Automobiles and accessories	3	10.00
Banking	6	20.00
Commercial and services	2	6.67
Construction & Allied	4	13.3
Insurance	2	6.67
Energy and Petroleum	2	6.67
Investment	2	6.67
Telecommunication and technology	1	3.33
Manufacturing & allied	3	10.00
Total	**30**	**100**

Source: Study data (2016)

The result in Table 1 indicate that banking sector had the majority of firms included in the NSE 20 share index with 20 percent followed by agricultural sector with 16.67 percent, automobile and accessories and manufacturing and allied followed with 10 percent telecommunication and technology was the least with 3.33 percent. These revealed that banking sectors had the majority of firms included in the NSE 20 share index.

4.2 Hypotheses Testing

This section presents results of hypothesis testing.

4.2.1.1 Share Performance of Firms inclusion in the NSE 20 Index (Event Study Results)

This study carried out an event study to determine share performance as measured by buy and hold abnormal share return of firms inclusion in the NSE 20 share index of 24 months that comprised of 12 months before firms inclusion in the NSE 20 share index and 12 months after firms inclusion in the NSE 20 share index.

Buy and hold abnormal share returns were computed for each month in the event window using equation 3.3. This cumulative buy and hold abnormal share return obtained from equation 3.4 was averaged to obtain the average cumulative buy and hold abnormal share return which was computed using equation 3.5. To establish whether the average cumulative buy and hold abnormal share returns were statistically different from zero. This procedure used a t test statistics and tested the following hypothesis:
$H_{0:}$ ACBHASR=0

$H_{1:}$ ACBHASR $\neq 0$

Where ACBHASR = Average Cumulative Buy and Hold Abnormal Share Return

To test the hypothesis, a critical t value was read from the distribution table and was compared to adjusted ACBHASR that was obtained using model 5. Testing whether buy and hold abnormal share returns of firms inclusion were significant was carried out for the period one year before and one after firms inclusion in the NSE20 share index.

The ACBHASR obtained during the event study window period was explained by financial indicators namely firm earnings, Firm dividend and Firm Size. The result of event are discussed in part a, b and c.

a) Event study results before the firms inclusion in the NSE 20 share index

H_{01}: There is no effect of firms' inclusion in NSE 20 share index on share performance in Kenya

The range before firms inclusion in the NSE 20 share index was between 12 months which was denoted as (-12).Therefore, the before inclusion window comprised of 12 observations. A summary of the Cumulative Buy and Hold Abnormal Share Return (CBHASR) and Average Cumulative Buy and Hold Abnormal Share Return (ACBHASR) for firms inclusion in the NSE 20 share index are shown in table 2

Table 2: CBHASR and ACBHASR before firm inclusion in the NSE 20 share index

Event Month	CBHASR	ACBHASR
-12	1.8751	0.02564
-11	-1.6235	-0.0175
-10	1.5236	0.0159
-9	1.2987	0.0123
-8	1.3659	0.01423
-7	1.3498	0.1324
-6	1.6523	0.01741
-5	-0.2567	-0.00125
-4	0.6589	0.01746
-3	1.2568	0.01423
-2	0.9547	0.0214
-1	0.6521	0.01456
Mean		**0.003567**
Standard Deviation		**0.01658**
Standard Error		**0.00316**
Calculated T		**1.679**
$\mathbf{t_{0.05/2,}12}$		**2.004**

Source: Study Data, 2016

As indicated in Table 2, before firms' inclusion in the NSE 20 share index, the Average Cumulative Buy and Hold Abnormal Share Return had a mean of 0.003567 a standard deviation of 0.01658 and a standard error of 0.00316. The maximum ACBHASR was 0.1324 witnessed 7 months before the firms inclusion in the index while the minimum ACBHASR was -0.00125 which was witnessed fifth months before firm inclusion in the index. A positive mean ACBHASR is an indicator that during twelve month before firms inclusion in the index the market prices of shares were on fairly increasing.

The calculated t statistic was 1.679 while the tabulated t statistic with 12 observations t at 95 percent confidence level ($\alpha = 0.05$) was 2.004. Thus the calculated t statistic was less than the tabulated statistic (critical value).Therefore the researcher failed to reject the null hypothesis that the ACBHASR of firms inclusion is equal to zero at the 5 percent level of significance. The study concluded that the ACBHASR before firm inclusion in the index was not significantly different from zero. This implies that before firm inclusion in the NSE 20 share index, market share prices were not increasing significantly and therefore investors were not increasing their wealth thus earning normal share return.

These finding were consistent with the arguments of Efficient Market Theory as advanced by Harris and Gural (1986) who argued that when firms are included in the index observes a neutral effect on share return. This is as result of that all relevant information is fully and immediately reflected in a security market price thereby assuming that an investor will obtain an equilibrium rate of return.

b) Event Study result after the firms inclusion in the NSE 20 share index

The range after firms inclusion in the NSE 20 share index was between 12 months which was denoted as (+12) and 1 month of firms inclusion which was denoted as (+1).Therefore, the after firms inclusion window comprised of 12 observations. A summary of the CBHASR and ACBHASR for firms inclusion in the NSE 20 share index are shown in table 4.3.

Table 3: CBHASR and ACBHASR after firm inclusion in the NSE 20 share index

Event Month	CBHASR	ACBHASR
1	0.8094	0.13894
2	1.1897	0.03124
3	1.2156	0.02159
4	1.4897	0.01210
5	1.2147	0.01145
6	0.8794	0.03099
7	1.5046	0.0017010
8	1.7456	0.01547
9	2.0147	0.01047
10	2.5689	0.01459
11	2.8749	0.00569
12	3.0147	0.00147
Mean		**0.01054**
Standard Deviation		**0.01985**
Standard Error		**0.00247**
Calculated T		**3.978**
$t_{0.05/2,}$12		**2.104**

Source: Study Data, 2016

As indicated in Table 3, after inclusion in the NSE 20 share index, the Average Cumulative Buy and Hold Abnormal Share Return had a mean of 0.01054 a standard deviation of 0.01985 and a standard error of 0.00247. The maximum ACBHASR was 0.13894 witnessed one month after the firms inclusion in the index while the minimum ACBHASR was 0.00147 which was witnessed twelve months after firm inclusion in the index. A positive mean ACBHASR is an indicator that during one month after firm inclusion in the index the market prices of shares were increasing.

The calculated t statistic was 3.978 while the tabulated t statistic with 12 observations t at 95 percent confidence level ($\alpha = 0.05$) was 2.104. Thus the calculated t statistic was greater than the tabulated statistic (critical value). Therefore, the study rejected the null hypothesis that the Average Cumulative Buy and Hold Abnormal Share Return for firms' inclusion in the NSE 20 share index is equal to zero at the 5 percent level of significance. The study clearly shows that the Average Cumulative Buy and Hold Abnormal Share Return after the firm inclusion in the NSE 20 share index were significantly different from zero. This implies that for firms' inclusion in the NSE 20 share index, their market share prices were increasing significantly and as such investors were increasing their wealth earning abnormal share returns for a period of one year after firm inclusion in the index. Furthermore the effect of share performance of firms inclusion in the index was found to have a temporally effect that lasted for one year after firms inclusion this is evident where the value of ACBHASR is decreasing toward zero at the end of the year.

These finding were consistent with the arguments of price pressure hypothesis as advanced by Prut (1986) who argued that when firms are included in the index observes a temporary effect on share return. This is as result of heavy index fund trading around the time of the change which is inclusion that moves share prices temporarily away from their equilibrium value.

These results support empirical studies carried out by Doque and Madeira, 2010, Green and Russell (2011) and Claessens and Yafeh (2011)who found a positive share return and temporally effect on share return of firms inclusion in the index.

A summary of the ACBHASR one year before and one year after firm inclusion in the NSE 20 share index is as presented in Table 4.

Table 4: ACBHASR before and after firms' inclusion in the NSE 20 index

	Mean	
ACBHASR before inclusion	0.003567	Non significant
ABHCASR after inclusion	0.01054	Significant
Change in ACBHASR	69.73%	

Source: Study Data, 2016

Table 4 indicates that the significance tests of the ACBHASR reveal that before the firm inclusion, the ACBHASR for all firms included in the NSE 20 share index was not significantly different from zero. However, after the firm included in the NSE 20 share index, the ACBHASR for all firms included in the NSE 20 share index was significantly from zero.

This is an indication that before the firm inclusion in the index, investors at NSE 20 share index were earning normal share returns but after firm inclusion, investors at NSE 20 share index were earnings abnormal returns. This implies that firm inclusion in the NSE 20 share index had a positive effect on share performance.

Therefore the firm inclusion in the NSE 20 share index led to an increase in the ACBHASR of 69.73 percent for all firms included in the NSE 20 share index. This implies that the after firms inclusion in the NSE 20 share index, market share prices significantly increased and as result investors wealth were increased.

c) Share performance during the event window

The event window comprised of twelve month before the firm inclusion in the NSE 20 index which was denoted as (-12) and 12 month after the firm inclusion in the NSE 20 index was denoted as (+12).Therefore event window period comprised of 25 observation including the month of firms inclusion in the NSE 20 share index which was denoted as (0).The summary of the CBHASR and ACBHSR for firm inclusion in the index during the event window are as shown by Table5.

Table 5: CBHASR and ACBHASR during the Event window firm inclusion in the index

Event Month	CBHASR	ACBHASR
-12	1.8751	0.02564
-11	-1.6235	-0.0175
-10	1.5236	0.0159
-9	1.2987	0.0123
-8	1.3659	0.01423
-7	1.3498	0.1324
-6	1.6523	0.01741
-5	-0.2567	-0.00125
-4	0.6589	0.01746
-3	1.2568	0.01423
-2	0.9547	0.0214
-1	0.6521	0.01456
0	2.5687	0.02479
1	0.8094	0.13894
2	1.1897	0.03124
3	1.2156	0.02159
4	1.4897	0.01210
5	1.2147	0.01145
6	0.8794	0.03099
7	1.5046	0.013010
8	1.7456	0.01547
9	2.0147	0.01047
10	2.5689	0.01459
11	2.8749	0.00569
12	3.0147	0.00147
Mean		**0.00985**
Standard Deviation		**0.010217**
Standard Error		**0.00167**
Calculated T		**3.756**
$t_{0.05/2,}$25		**2.314**

Source: Study Data, 2016

As indicated in Table 5 during the event window of firm inclusion in the NSE 20 share index, the ACBHSAR had a mean of 0.00985 a standard deviation of 0.010217 and a standard error of 0.00167. The maximum ACBHASR was 0.13894 witnessed one month after the firms inclusion in the index while the minimum ACBHASR was -0.00125 which was witnessed fifty months before firm inclusion in the index. A positive mean ACBHASR is an indicator that during one month after firm inclusion in the index the market prices of shares were increasing thus investors increasing their wealth.

The calculated t statistic was 3.756 while the tabulated t statistic with 25 observations t the 95 percent confidence level ($\alpha = 0.05$) was 2.314. Thus the calculated t statistic was greater than the tabulated statistic (critical value). Therefore, the researcher rejected the null hypothesis that the ACBHASR for firm inclusion in the NSE 20 share index is equal to zero at the 5 percent level of significance. The study therefore concluded that the ACBHASR during the event window was significantly different from zero. This implies that at NSE 20 share index, during the event window of firm inclusion in the index, market share prices were increasing significantly and as such investors were increasing their wealth and effect was temporally.

These results were consistent with the Price Pressure Hypothesis as posited by Prut (1986) that observed that there is a temporally effect on share return following firms inclusion in the index. However, these results were inconsistent with Traditional information hypothesis as argued by Jain (1988) that a permanent positive effect on share return following firms inclusion in the Index.

These results support empirical studies carried out by Duque & Madeira (2011) Bildik and Gulay (2011) and Sadeghi (2011) who reported positive share returns of firm inclusion in the NSE 20 share index. The results of this study also supported the findings by Selvam *et al.*, (2012) and Maria &Asani (2014) who reported temporally effect on share performance however contrary reported a negative share performance of firms' inclusion in the NSE 20 share index.

V. Conclusions And Policyimplication

Based on the findings, this study established that after firms' inclusion in the NSE 20 share index abnormal share returns of firms included in the index were positive and significantly different from zero. In additional, during the event window period, share returns of all firms' inclusion were positive and significantly different from zero.

This study concluded that the investors that invest with firms included in the NSE 20 share index perceive firms inclusion in the NSE 20 share index as good news. Following firms' inclusion in the index the market share price increased significantly and consequently positive share return that result to increased investors wealth. Hence the NSE 20 share index had increased firm earnings resulting to higher share returns and as a result a positive firm share performance was experienced. This is an important signal to the public about the future prospects of firms included in the NSE 20 share index. This signal results to an increased in the value of the firm which is manifested through an increased in the market price of shares and a positive share performance.

The results of this study have significant implications to firms' managers' investors' regulators and academician .As result several recommendation can be derived from the findings of this study. This study found out after firms inclusion in the NSE 20 share index market share price increase and as result investors increase their wealth.

References

[1]. Ang, J. S., & Zhang, M. (2010). Knightian uncertainty; evidence of uncertainty premium in the capital market in *Applied Economics letters*, vol. 17 No 10, PP. 945-949.
[2]. Bankovica, S., &Zaldokas, A.(2007).How does inclusion in an index affect stock prices? *Stockholm School of Economics,1-33.*
[3]. Bildik,R., &Gulay,G.(2011).Effect of change in index composition on stock market. Evidence from Instabul stock Exchange,1-65.
[4]. Brooks,C.,Kappou,K.,Stevenson,S.,&Ward,C. (2013).The performance effects of composition changes on sector specific stock indices: *International review of Fnancial Analysis* vol.29 issue pp132-142.
[5]. Brown, S., & Warner, J. (1980). Measuring Security Price Performance. *Journal of Financial Economics*, 8,205-258.
[6]. Carhart A. (1997) four factor model.*Journal of Finance*Vol 52,issue1
[7]. Claessens, K.,&Yafeh, F. (2011). Additions to market indices and the movement of stock return around *the world International Monetary Fund Vol 11, 47.*
[8]. Chen, H., Noranha, G., &Singal, V. (2005). The price response to S& P 500 index additions and deletions. Evidence of Asymmetry and a New explanation. *Journal of Finance Volume 59 issue 4, pp. 1901-1930.*
[9]. Dhar, S., &Chhaochharia, S. (2008). Market reaction around the stock splits and bonus issues some Indian evidence. *Journal of Accounting, Auditing and finance Vol3 pp. 113-132.*
[10]. Duque, J., & Madeira,G. (2010). Effect Associated with Index Composition Changes:Evidence from the Euronext Libson Stock Exchange. *Institution Superior de Economia,1-36.*
[11]. Fama, E. F., & French, K. R. (1992).The cross-section of expected stock returns. *Journal of Finance* 47, 427–465.
[12]. Greene, W.H. (2008). *Econometric Analysis* (6thed). Upper Saddle River, N. J.: Prentice Hall
[13]. Hrazdil, K. &Scott, K. (2009).S&P 500 Index revisited: Do index inclusion announcements convey information about firms' future performance?*Quarterly Journal of Finance and Accounting* 48, 79-113.
[14]. Hacibedel, B., & Bommel, J. (2006). Do emerging market benefit from index inclusion?*Money Macro and Finance Research Group, 1-64.*
[15]. Harris, L.,&Gurel, E.(1986).Price and Volume effect associated with change in the S&P list: New evidence for the existence of price pressure, the Journal of Finance, 4, 815-829.
[16]. Kot, H., Leung, H., & Tang, G. (2015). The long-term performance of index additions and deletions: Evidence from the Hang Seng Index. *International Review of Financial Analysis*, *42*(407-420).
[17]. Kerlinger, F.N., & Lee, H.B. (2000). *Foundations of behavioral research* (4th ed.). Fort Worth, TX: Harcourt.
[18]. Levine, R., &Zenevos S., (2008). Stock markets, Banks and Economic growth. *The American Economic Review* 88 (3).
[19]. Lin, E., & Kensinger, J. (2007). Impact of inclusion in the S and P 500 index on a stock's Trading volume and return volatility submitted. *Submitted to the program committee for the 2008 European Conference of the Financial Management Association International.*
[20]. Maria, A.,&Asani,K. (2011). Is there an S&P 500 index effect. *Journal of Fedaral reserves bank of new york staff reports.*
[21]. Mase, B. (2007). The impact of changes in the FISE 100 index, *Financial review volume 42, issue 3 pages 461-484 (August 2007).*
[22]. NSE, K. (2014). *NSE Press Release: Review of NSE 20 share index constituent companies*. Nairobi.NSE Kenya.
[23]. NSE, K. (2014). *NSE Press Release: Review of NSE 20 share index constituent companies*. Nairobi.NSE Kenya.
[24]. Robson, C.(2002).Real World Research: A Research for Social Scientist and Practioners, Research Oxford Blackwell.
[25]. Patell, J. M. (1976). Corporate Forecasts of Earnings Per Share and Share Price Behavior: Empirical Test. *Journal of Accounting Research*, 14(2), 246-276.
[26]. Profitel,H.,&Bacon,A. (2013).Dividend policy and stock price volatility in the U.S *Equity Capital market proceedings of ASBBS, Vol 20.No.1.*
[27]. Sadeghi, M.(2011).Shariah-Compliant Investment and Shareholders Value: An empirical Investment. Global Economy and Finance Journal, 4, 45-61.

[28]. Selvam, A.,Indriumathi,A.,& Lydia, K. (2012). Impact on stock price by Inclusion to and Exclusion from CNX Nifty Index Global Business Review.
[29]. Saunders, M., Lewis, P., & Thornhill, A. (2009). Research methods for business Students. *5th ed Italy: Prentice Hall.*
[30]. Tachiwou, A. M. (2010). Stock market development and economic growth: The case of West Africa Monetary Union. *International Journal of Economic & Finance Vol. (2 (3).*
[31]. Osoro,C.,&Jagongo,A.O. (2013).Investors perceptive on the NASI and the NSE 20 share index performance measure indicated at NSE, Kenya, *International journal ofHumanities and social science vol.3 No.18.*
[32]. Opiyo,M., Kubasu,A.,&Kamau,S. (2014). The effect of firms' market share performance on inclusion in NSE20 share index. A case study of Mumias Sugar Company Ltd. *International Knowledge Sharing Platform* Vol. 5.
[33]. Xie, W. (2013) Media coverage, analyst recommendation upgrade and information content of inclusion into S&P indexes. *Investment Management and Finance innovations 10(1.).*

Faith N. Nkuru. "The Effect of Firms' Inclusion in the NSE 20 Share Index On Share Performance In Kenya." IOSR Journal of Economics and Finance (IOSR-JEF) , vol. 10, no. 3, 2019, pp. 73-83.