

## *Original Paper*

# Firm Ownership Characteristics and Long-run Return on Equity

## Issued: A Case of the Nairobi Securities Exchange

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### ***Abstract***

*This investigation looked at the link between firm ownership characteristics and long-run return on firms that issued equity at the Nairobi Securities Exchange (NSE) in Kenya. The study covered 12 firms that issued shares in the NSE market from 2006-2008. Ownership characteristics included (state ownership, institutional Ownership, foreign Ownership, big five shareholders, market capitalization, age of the firm and Leverage of the firm) in relation to the average return. The study tested whether each of the firm ownership characteristics influenced long-run performance. Annual return for these companies was based on market return for five years after the firm's equity shares were issued. The long-run performance was compared with three benchmarks, namely, NSE index, CAPM and Matching firms. Seven hypotheses were developed for the study. Simple-liner and multi-linear regression analyses based on panel data were carried out to relate the extended run return on shares issued. The result of the survey showed that issuing firms performed better than non-issuing firms. These issuing firms also performed better in comparison to CAPM. However, the issuing firms performed worse than NSEI. In conclusion, the long-run performance of equity issued at the NSE does not necessarily underperform relative to non-issuing establishments.*

### ***Keywords***

*State ownership, institutional Ownership, foreign Ownership, big five shareholders, Leverage, age and market capitalization*

### **1. Introduction**

In corporate governance, the ownership structure is a crucial mechanism. Several studies in this area have concluded that ownership structure, if applied appropriately, can be an efficient way of decreasing agency costs, leading to significant corporate governance problems (Thomsen & Conyon, 2012; Arosa,

Ituralde, & Maseda, 2010; Elyasiani & Jia, 2010). Studies on ownership structure can be decomposed into two ownership scopes: identity and structure (Arosa, Ituralde, & Masda, 2010). Cornett, Marcus, Saunders and Tehranian (2007) argue that where institutions hold most shares, such firm managers are closely monitored. With close monitoring, administrators will perform in shareholders' best interest, leading to a decrease in agency cost. La Porta, Lopez-de-Silanes, Shleifer and Vishny (1998) contend that agency problems in several emerging markets are comparably more critical because of lack of solid legal shield alongside another governance mechanism. Dyck and Zingales (2004), in an investigation on private benefits of control worldwide, established that more significant personal benefits of management are linked with underdeveloped capital markets and highly concentrated Ownership. This paper advances understanding of ownership structure and long-run return on firms that have issued equity in the Nairobi Securities Exchange.

The study focuses on four ownership structures: shares owned by the government, shares owned by institutions, shares owned by foreign investors and shares held by leading shareholders (the big five) for each firm that issued shares at the Nairobi Securities Exchange from 2006 to 2013. The four characteristics mentioned above are considered, along with the three other variables: firm Leverage, firm age, and market capitalization as control variables. This study has the following objectives: How do these firms in the long run compared with Nairobi Securities Exchange Market Index (NSEMI) as a benchmark for their returns? How do these firms compare in terms of long-run return with firms that never issued equity over the study period here described as matching firms (MF) as a benchmark? Where CAPM is used as a benchmark, how do these firms that issued equity compare in long-run returns? Does any of the seven variables have any statistically significant effect on long-run return for these companies that gave equity? This study assesses five years average returns after the issue of equity by these 12 firms.

This study differs from a few studies that have been done on the NSE regarding equity issues, for example (Ongore, 2011; Simiyu, Thadeus, Barasa, & Mateta, 2016; Kinyua, Nyanumba, Gathainya, & Kithitu, 2013). In the first case, the studies mentioned above used operating return as a measure of performance Return on Assets (ROA) or Return on Equity (ROE)). Our study uses financial return as a performance measure. Operating return as a measure of performance has several shortcomings. The first, operating return is based on the operating profit. The operating profit can be impinged on by several factors such as accounting methods used, the possibility of falsification of accounting figures or one-time effect of accounting changes alongside economic aspects like nonrecurring earnings or expenses or short-term changes in demand of product (Barber & Lyon, 1996; Lee, 1996). A second weakness common with the operating return is a lagging measure (Drury, 2017). The second weakness found in the studies mentioned above is that in a study by Kinyua, Nyanumba, Gathainya and Kithitu (2013), considered only two variables in their study: liquidity and earnings per share. These two variables were not widely decomposed.

Several scholars have looked at firm ownership structures. Chen, Li, Shapiro and Zhang (2013)

contend that an establishment having several ownership structures can secure the balancing set of crucial economic and political resources needed for better performance. Previous studies have treated ownership categories separately (Choi, Park, & Hong, 2012). Such treatment is likely to ignore the potential advantage of variables that may complement each other in a study (Chen, Li, Shapiro, & Zhang, 2013). This investigation seeks to bridge these apparent gaps in the literature. The remaining part of the study is divided as follows: section two covers the literature review. Section three tests a set of hypotheses. Section four discusses empirical results. Finally, section five concludes the study with recommendations on areas for further research.

## 2. Literature Review

The ownership structure can be decomposed into several units. Some of them include State ownership, institutional Ownership, foreign Ownership and big five shareholders. The level by which controls is exercised may be termed as either ownership concentration or ownership identity. The former is the proportion of shares a single owner holds concerning the aggregate firm's shareholding (Anstoniadi, Lazarides, & Sarrianiades, 2010). In contrast, the latter is the actual names of crucial shareholders (Grossman & Hart, 1986). Recent studies have revealed that a concentrated ownership structure is commonly found in developing countries (Claessen, Djankov, & Lang, 2000). Ownership structure revolves around agency theory, Jensen and Meckling (1976) and corporate governance theory (Thomsen & Conyon, 2012). The central premise of these theories is that managers can engage in decision-making behavior contrary to the expectations of shareholders.

One type of equity ownership is where the state owns shares in a firm. State ownership arises when the state has control and management of a firm. Some scholars have asserted that State ownership is inefficient and bureaucratic. Villalonga (1999) claims that managers are rarely fired for nonperformance in state-controlled firms. If there is any firing of management, it is not related to its performance (Cragg & Dyck, 1999). Therefore managers have little incentive to focus on the financial or operational performance of the firms they manage. Porta, Silanes and Shleifer ((2002) find that greater state ownership of establishments is linked with lower subsequent financial development and lower economic growth. Iannota, Nocera and Sironi (2007) find that state-owned banks have lower returns than those privately owned despite lower costs associated with their operations. Furthermore, Gursoy and Aydogan (2002) find that banks owned by the state rarely take risk analysis in their operations and many people believe that doing business with state banks would help their establishments when they are in trouble. This has led to many state-owned banks end up with a large amount of bad debt, which is eventually written off (Gursoy & Aydogan, 2002).

The second type of Ownership in a firm is Institutional Ownership. Zhang and Gimeo (2016) identify institutional investors as financial investors like pension funds, mutual funds, hedge funds, banks, insurance establishments, endowments, and foundations holding a substantial amount of equity in publicly traded establishments. Institutional Ownership is regarded as a case where an institution has

share ownership, especially when the state has privatized its' holding. Institutional shareholding is legal Ownership since a legal person owns shares in the name of an institution (Wei & Varela, 2003; Wei, Xie, & Zhang, 2005). Large equity ownership by institutions in an establishment is assumed to encourage stakeholders in monitoring managers' undertakings, stop them from involving in moral hazard activities and focus on shareholders' interest (Belkhir, 2005; Cornett, Marcus, Saunders, & Tehranian, 2007). Institutional investors are more focused on profit, hence have more inducements to scrutinize the establishment's activities. Large shareholders in the form of institutions effectively enforce their rights and can control managers' excesses (Morck, Nakamura, & Shivdasani, 2000). Yuan, Xiao and Zou (2008) have raised two issues related to firm performance and institutional Ownership. These are; enhanced performance argument and reduction performance argument. Where there is performance enhancement, it is due to the introduction of good corporate governance. Institutional investors aim at best returns. Good performance is also associated with active monitoring. Performance reduction is associated with investors who require quick returns in a short time (Appel, Gormely, & Keim, 2015; Drucker, 1986). This may be detrimental to the organization's performance.

The third form of equity ownership is concentrated Ownership. This type of Ownership means large shareholding in an organization is held by a few shareholders (Appel, Gormley, & Keim, 2015). Some scholars refer to them as the large shareholders or the big five shareholders (Rokwaro, 2013). The majority of shareholdings assert influence on management and control in the firms. These large shareholders may oversee management and intervene when they feel things are not going in the right way (Shleifer & Vishny, 1997). Grossman and Hart (1986) contend that large stakeholders have a high stake in these firms; therefore, they are more willing to involve themselves in decisions relating to the firm actively. However, large shareholders may have divergent views from minorities and, in some instances, expropriate their interests. Berger, Clarke, Cull, Klapper and Udell (2005) posit that concentrated ownerships may bring with them a negative impact on performance in that their behaviors may lead such firms to fall into financial distress and crisis. This is because large shareholding with high authority will control management and create moral hazard behavior. These large shareholdings are often referred to as the big five shareholders (Wahla, Shah, & Hussian, 2012). Big five shareholders are the majority shareholders where they own at most seventy-five percent shareholding (75%). They reflect dominance in the management of firms and, in many instances, are family members or government (Soon & Koh, 2007; Khanna & Palepu, 1999).

The fourth type of share ownership is where foreigners own shares. In this paper, foreign shareholders are those investors who are non-Kenyan citizens. It deviates a little from the definition given in the Capital Markets Authority Regulation (2002), where foreign investors exclude residents of the East African Community. Foreign investors are associated with a positive impact on a firm. This can be brought about by the level of the firm's performance, possibly by the managerial efficacy, technical expertise, and know-how that foreign investors are likely to bring to the new environment (Uwalomwa & Olamide, 2012).

The leverage level also sways the extent to which firms raise funds in securities exchange it desires to achieve. The utilization of high Leverage helps when an establishment is making gains. Contrariwise, an establishment that is highly levered may be troubled if its profitability is declining and may face a high risk of default compared to an unlevered or less levered establishment in a similar situation. The leverage ratio can be indicated in the following way: Debt/ Equity; or Total debt/Total capital. The leverage ratio is the level at which an establishment is using the funds that are borrowed. It assesses the establishment's solvency and capital structure. Modigliani and Miller (1958) argue that under capital structure theory, if financial markets are efficient, then debt and equity financing will essentially be substitutable and that the other aspects will point out the ideal capital structure. The function model for Leverage can be expressed in the following way:

$$\text{Market value} = f(\text{Capital structure}) \quad (1)$$

$$\text{Market value} = f(\text{EqC}, \text{DeC}) \quad (2)$$

Whereas the obvious form in first difference is;

$$\text{MvF} = \beta_0 + \beta_1 \text{MvF}_{t-1} + \beta_2 \text{EqC} + \beta_3 \text{EqC}_{t-1} + \beta_4 \text{DeC} + \beta_5 \text{DeC}_{t-1} + \text{et} - 1 \quad (3)$$

$$\text{LogMvF} = b_0 + b_1 \log \text{MvF}_{t-1} + b_2 \log \text{EqC} + b_3 \log \text{EqC}_{t-1} + b_4 \log \text{DeC} + b_5 \log \text{DeC}_{t-1} + \text{et} - 1 \quad (4)$$

Where, MvF = Market Value of firm, EqC = Equity Capital, DeC = Debt Capital, et-1 = Idiosyncratic terms. Market capitalization is the firm's value of shares

The second last independent variable is firm age. Firm age can be a proxy for risk. Old establishments are more expected to be stable, mature and may have more skills because they have been operating for a long time (Liargovas & Skandalis, 2008). A firm's age is associated with experience, knowledge intensity, and entrepreneurial flexibility (Chen, Li, Shapiro, & Zhang, 2013). Age can be a measure of both uncertainty and investor optimism (Ritter, 1991). The age of a firm is evaluated by the day and date before IPO. An establishment that has been in operation for many years can sustain risk. A firm that has been in business for a long time is well known, and there is a small element of uncertainty (Lowry, Officer, & Schewert, 2008; Alvarez, 2015). Ritter (1991), Khurshed (1999), Belghitar and Dixon (2012) document a more pronounced positive relationship between issuer's age and long-run performance of IPOs and SEOs. They argue that this is because older firms have minor information asymmetry. However, in studies done by Brau, Couch and Sutton (2012); Liu, Uchida and Gao (2012), it was reported that there existed unsubstantial adverse links between a firm's age and IPOs' long-run performance. The final independent variable is market capitalization. Firms trading in the Securities Exchange have their values reflected in the securities market, and their values can be determined without waiting for their financial year-end. The market price of their shares will show market capitalization by simply multiplying issued shares by the market price per share (Loughran & Ritter, 1995).

### 3. Data and Methodology

#### 3.1 Hypotheses Development

The study developed a set of benchmarks to determine whether firms that issued equity underperform or over-perform these sets of benchmarks. The returns from these firms were calculated first. Changes in share prices determined the returns from these firms during each year plus any dividends paid during the year. After that, the returns were compared with the relevant benchmarks used to evaluate the average return. Concerning this, several null hypotheses were established to test if the average return was statistically unequal to zero. Several other null hypotheses were developed to determine the link between the average return of establishments that issued equity and firm ownership structure characterized by state share ownership, institutional share ownership, foreign share ownership, the big five-share Ownership, Leverage of the firms, age of the firms and market capitalization. All these were based on a 5% level of significance. These hypotheses were aimed at justifying study objectives: How do these microeconomic variables perform compared to the three benchmarks in the long run?

**Table 1. Null Hypotheses for Bench Marks**

Bench Mark Number	Measurement	Type of Benchmark and Hypothesis number	Null Hypothesis
Bench mark1	AR	Nairobi Securities Exchange H <sub>01</sub>	Long run average return is not substantially and significantly different from zero when NSE benchmark is used.
Bench mark2	AR	Capital Asset Pricing Model H <sub>02</sub>	Long run average return is not substantially and significantly different from zero when CAPM benchmark is used
Bench Mark 3	AR	Matching Firm H <sub>03</sub>	Long run average return is not substantially and significantly different to zero when MF is used as a bench mark

**Table 2. Null Hypotheses for Ownership Characteristics**

Independent Variables	Hypothesis Number	Null Hypothesis
State ownership	H <sub>04</sub>	State ownership does not substantially and significantly influence long-run average return following equity issues in Nairobi Securities Exchange.
Institutional Ownership	H <sub>05</sub>	Institutional Ownership does not substantially and significantly influence long-run average return following equity issues in Nairobi Securities Exchange.
Foreign Ownership	H <sub>06</sub>	Foreign Ownership does not substantially and significantly influence long-run average return following equity issues in Nairobi Securities Exchange.
Big Five	H <sub>07</sub>	Big five shareholders have no substantially and significant effect on long-run average return following equity issue in Nairobi Securities Exchange.
Leverage	H <sub>08</sub>	A firm's Leverage has no significant and substantial effect on long-run average return following equity issues in Nairobi Securities Exchange.
Age	H <sub>09</sub>	Age of a firm has no significant and substantial effect on long-run average return following equity issue in Nairobi Securities Exchange
Market Capitalization	H <sub>010</sub>	Market Capitalization has no significant and substantial effect on long-run average return following equity issues in Nairobi Securities Exchange.

During the study period, the NSE market witnessed variations in the number of establishments that issued shares in the Stock Market). From 2006 to 2008, there was a rise in the number of establishments that issued shares in the market; this was contrary to what should have been expected to happen following the financial crisis that was experienced worldwide in 2008. This can probably be attributed partly to changes introduced in NSE by Capital Markets Authority that were beneficial to investors based on government macroeconomic policies.

### 3.2 Data Analysis

This investigation establishes if ownership structure significantly influenced the long-run return on firms that make equity issue in The Nairobi Security Exchange. To achieve this objective, the study used NSE market return for all firms that gave equity from 2006- 2013. The population was composed of every establishment that issued equity in the period stated above and survived for at least five years after issuing equity. The total population of the study was 12 firms. The following independent variables were used; state ownership, institutional Ownership, foreign Ownership, the big five shareholders' Leverage, market capitalization and firm's age. To determine the long-run performance of

average return for each firm, the study applied three benchmarks to assess the abnormal returns on firms that issued equity from 2006-2013 in Nairobi Securities Exchange. These benchmarks were: Nairobi Securities Market Index based on 20 share index, Capital Asset Pricing Model and Matching Firms. The study did not rely only on the stock market index for comparing net returns because relying on this can yield biased results (Lyon, Barber, & Tsai, 1999). The study used panel data and applied the following diagnostic tests; test of stationarity of the data and co-integration test to ensure a long-run association between the output and predictor variables; granger causality test to establish if one time series is significant in predicting another. Empirical data sets were used to find patterns of correlation. Four other diagnostic tests were carried out, and these included normality test, multi-co-linearity, auto-co-linearity and homoscedasticity. The study tested the normality of the data using Shapiro- Wilk test. A Multi-co-linearity test was done using the variance inflation factor (VIF). Auto-co-relation test was done using Durbin Watson  $t$ -test and finally Wooldridge test for homoscedasticity. The study used the  $t$ -test to test for individual variables' significance and F-test for overall significance on the independent variables.

### 3.3 The Benchmarks for the Study

#### 3.3.1 Nairobi Securities Exchange

The NSE was instituted in 1954. It is the fifth-largest stock market in Africa after South Africa, Morocco, Nigeria and Egypt. But compared to other world stock markets, it is relatively small, and not many firms issue their shares frequently. The benchmark employed in the study is Nairobi Securities Exchange 20 share index. This is represented by value-weighted return. Index returns are by compounding daily value-weighted NSE return. The following equation represents this:

$$AR^{NSE} = R_{it} - R_{mt} \quad (5)$$

AR = average return

$R_{it}$  = Returns on the firm that issued equity

$R_{mt}$  = Market return (NSE)

#### 3.3.2 Capital Asset Pricing Model

Under this benchmark, all annual equity returns have to be evaluated during the period of investigation. The average-annual risk-free rate (RFR) represents the return on Central Bank of Kenya's Treasury bills. This is averaged to give an annual interest-free rate since the treasury bills rates are for 91 days. An equation represents this:

$$AR^{CAPM} = R_{it} - [R_{fi} + \beta (R_{mt} - R_{fi})] \quad (6)$$

Where:

$R_{it}$  = return of firm that issued equity in period  $t$

$R_{mt}$  = market return in year  $t$  as measured by NSE market index.

$R_{fi}$  = 91 days Treasury bill return in calendar year  $t$

$B$  = beta coefficient of CAPM is determined by using correlation coefficient;



Where

$$\beta = \frac{n[\sum xy] - [\sum x \sum y]}{n[\sum x^2] - [\sum x]^2}$$

X= is a monthly market index (NSE)

Y = is a monthly return for each firm that issued equity

### 3.3.3 Matching Firms

Loughran and Ritter (1995) measure long-run return by matching each issuer with a non-issuing firm closest in size. This study based matching firms and issuing firms on market value (market price per share multiplied by outstanding shares) to determine their sizes. The average return (AR) according to the benchmark is shown below:

$$AR^{MF} = R_{it} - R_{MF} \quad (7)$$

Where:

$AR_{it}$  = average return for matching firm.

$R_{it}$  = return of firm that issued equity  $i$  in event year  $t$ .

$R_{MF}$  = return of the control portfolio in the event year  $t$  under this benchmark. The Matched firm's portfolio returns are equally-weighted average returns on a portfolio of every firm.

### 3.4 Regression Model

$$Y = \beta_0 + \beta_1 SO + \beta_2 IN + \beta_3 FO + \beta_4 BF + \beta_5 MC + \beta_6 AG + \beta_7 LV + \varepsilon \quad (8)$$

$\beta_0$  = Constant return

$\beta_1$ -  $\beta_4$  Regression coefficients.

SO=Percentage number of shares that are owned by the state.

IN=Percentage number of shares that institutions own.

FO=Percentage number of shares that foreigners own

BF= Percentage number of shares held by five big shareholders.

MC=Market capitalization

AG= Age of each firm from the time it went public

LV= Leverage of each firm

## 4. Data Analysis, Presentation and Results

The study used the Ordinary Least Square (OLS) regression to test the link between state ownership, institutional Ownership, foreign Ownership and big five shareholders in relation to firm performance in the long run following the equity share issue. The study used the following specification model to test the theory:

### 4.1 Descriptive Statistics

Firms that issue shares at the stock markets are generally regarded as growth firms. They need funds to expand their businesses. Generally, the average raw return on new issues is low; therefore, many studies have found such firms underachieve none issuing establishments in the same market (Loughran & Ritter, 1997).

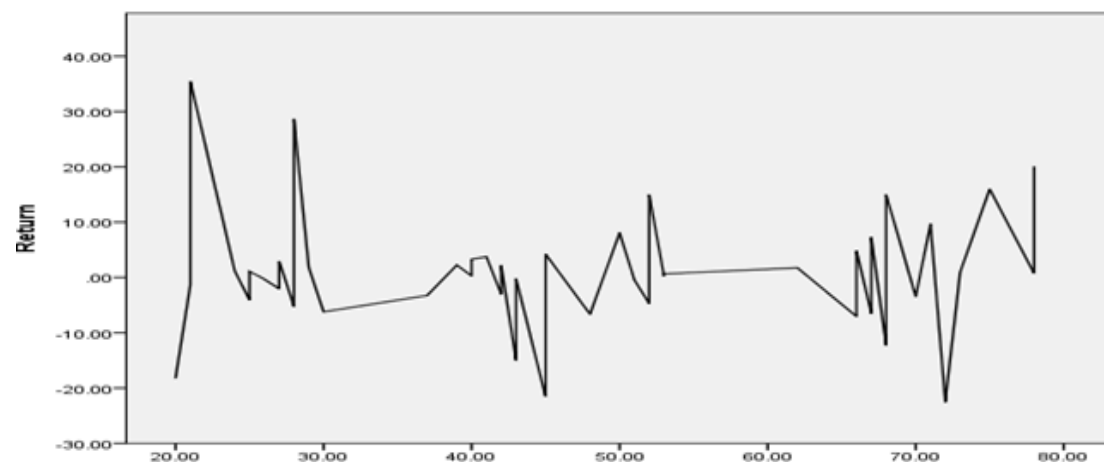
**Table 3. Descriptive Statistics for Each Variable**

Variables	Mean	Maximum	Minimum	Std Dev	Skewness	Kurtosis
AR	.293	35.48	-22.55	9.736	.926	3.564
NSEI	1.1364	40.14	-47.22	15.00	-.837	2.213
CAMP	-4.4663	38.74	-125.75	29.702	-2.403	7.262
MF	-2.6782	159.8	-102.30	37.569	1.060	6.546
SO	19.5965	78	.00	24.73	1.142	.034
IN	46.3167	78	20	16.96	.250	-1.058
FO	21.833	55	1.00	19.46415	.273	-1.666
BF	75.8667	86.00	60.00	5.167	-1.266	2.952
MC	22.68	26.04	20.05	1.51557	.180	-.562
AG	37.90	57	11.00	14.86	-.78	-.865
LV	2.5764	7.63	.00	2.58	.726	-1.237

Table 3 shows that the mean average return is .293. This is lower than NSEI, which is 1.1364 but higher than CAPM, -4.4663 and Matching firms, with a mean of -2.6782. This means that companies that issued equity during the investigation period performed better than those that did not issue equity. Data were normally distributed as shown by skewness, whose figures were around 0. Similarly, kurtosis values were less than three except for Average return, CAPM and Matching firms (Gujarati & Porter, 2009).

#### 4.1.1 Stationarity Test

Stationary is the statistical properties of a process generating a time series that never change with time (Gujarati & Porter, 2009). All the seven (7) independent variables, Institutional Ownership, Age of Firms, Leverage, Foreign Ownership, Big five, State Ownership, and Market Capitalization, were run using SPSS software to show whether they were stationary. Figures 1-7 below show that the data was static.

**Figure 1. Institutional Shareholding**

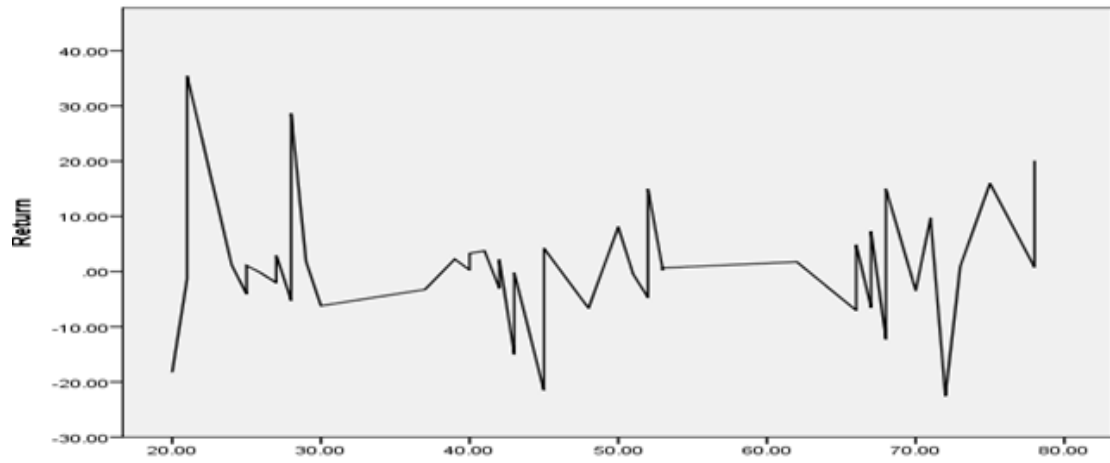


Figure 2. Age of the Firms

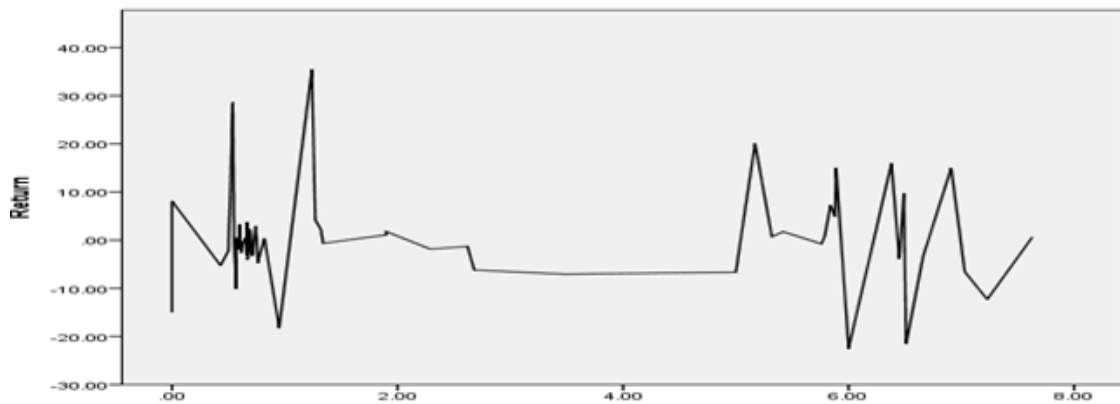


Figure 3. Leverage

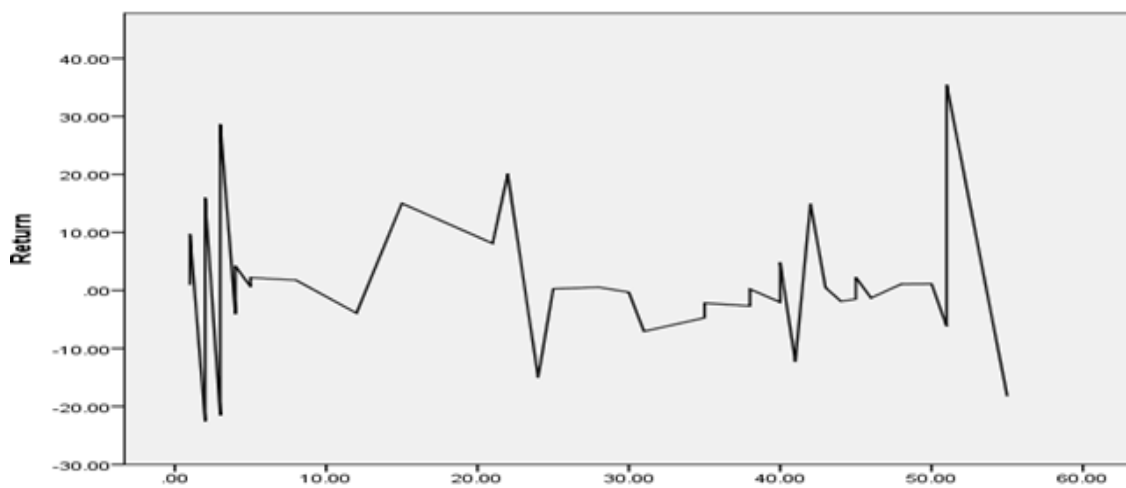


Figure 4. Foreign Ownership

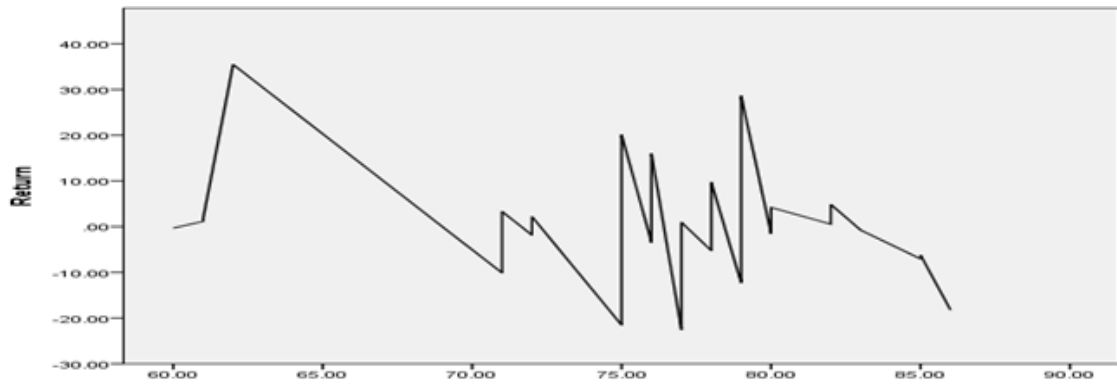


Figure 5. Big Five Ownership

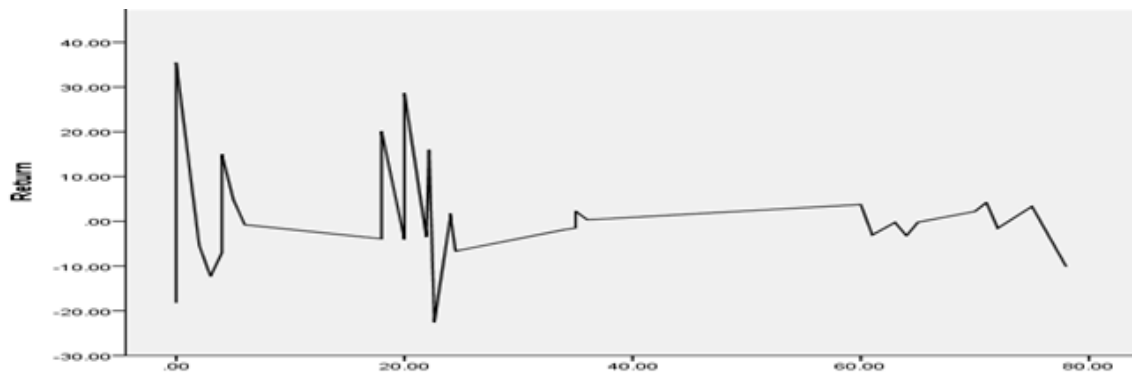


Figure 6. State Ownership

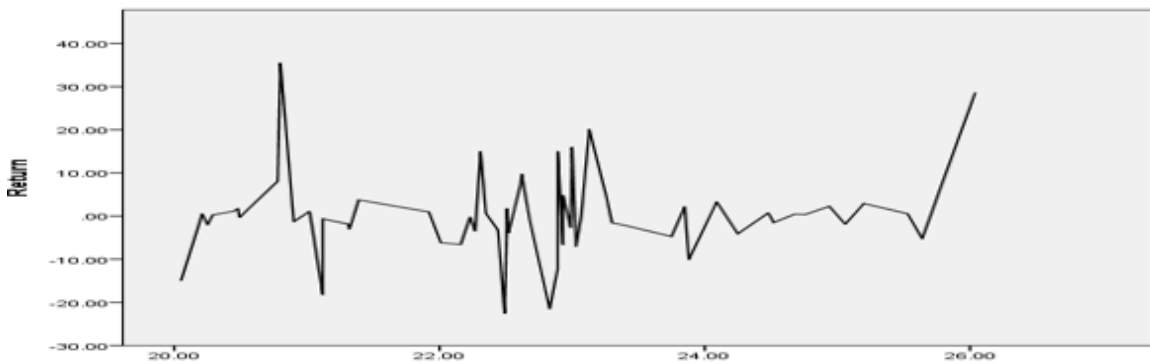


Figure 7. Market Capitalization

#### 4.2 Diagnostic Tests

The study undertook the following diagnostic tests; Normality test, Multicollinearity test, Auto collinearity test and Homoscedasticity test. The results follow below.

##### 4.2.1 Normality Test

The data had a normal distribution as indicated by skewness and kurtosis in the descriptive statistics (Table 3). Under skewness, no figure for all independent variables was above one, whereas for kurtosis, all statistics were below 3 except for average return, CAPM and Matching firms.

## 4.2.2 Multicollinearity Test

**Table 4. Multicollinearity Statistics**

Model	Tolerance	VIF
Constant	-	-
Institutional Shares	.405	2.471
Age	.458	2.183
Leverage	.330	3.034
Foreign investors	.594	1.684
Big Five Ownership	.784	1.275
State ownership	.558	1.793
Market capitalization	.775	1.290

Table 4 above shows that all independent variables have a VIF of less than 10 and the tolerance values are above 0.1. These results confirm that the data had no multicollinearity problem.

## 4.2.3 Autocorrelation Test

**Table 5. Model Summary of Autocorrelation Test**

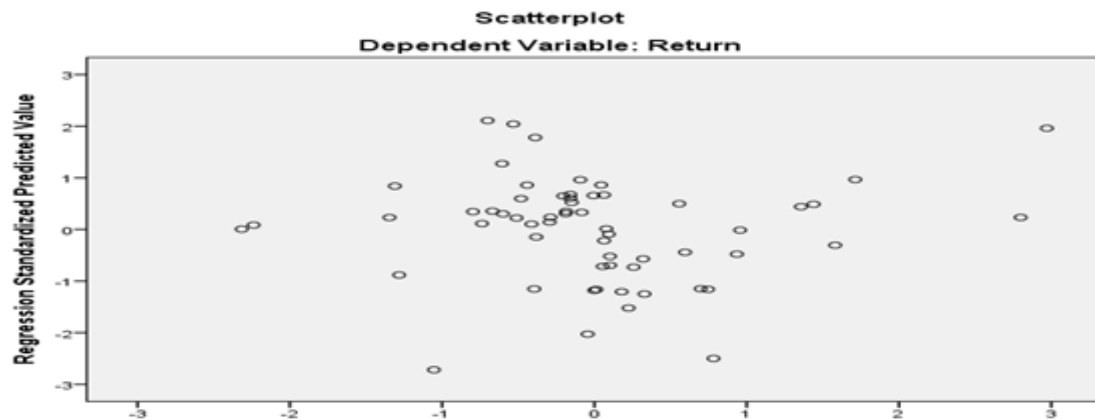
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.307 <sup>a</sup>	.094	-.028	9.87104	2.473

a. Predictors: (Constant), Market Capitalization, Leverage, Foreign Investors, Big\_ Five Ownership, State Ownership, Age of Institution, and Institutional Shareholding

b. Dependent Variable: Return

The Durbin-Watson tests yield a test statistic ranging from 0 to 4. Values nearer to 2 (the middle of the range) indicate less autocorrelation, and values closer to 0 or 4 points out higher positive or negative autocorrelation in that order. This result shows that there is no problem with autocorrelation in the data used.

## 4.2.4 Homoscedasticity Test

**Figure 8. Regression Standardized Residual**

The data distribution shows that it has a normal distribution and that outliers are few and scattered on both the upper and lower part of the graph.

### 4.3 Hypotheses Results

First, we calculated the average return against the benchmarks that were employed (NSE Index, CAPM and Matching firms), a parametric *t*-test was utilized to examine if the abnormal return obtained was considerably different from zero at the significant level ( $\alpha = 0.05$ )

$H_{01}$ : AR sample of NSE index=0 against  $H_{01}$ : AR sample of NSE index  $\neq 0$ ,

$H_{02}$ : AR sample of CAPM=0 against  $H_{02}$ : AR sample of CAPM  $\neq 0$ ,

$H_{03}$ : AR sample of matching firm=0 against  $H_{03}$ : AR sample matching firm  $\neq 0$

Further tests were carried out to determine ownership characteristics on average return (AR) using a simple linear regression model and correlated with average return with respect to the three benchmarks utilized. The null hypotheses were tested with respect to the regression analyses at a substantial level where the p-value is less than .05

$H_{04}$ : K state-owned AR <5% against  $H_{1,4}$  K state-owned AR >5%

$H_{05}$ : K Institutional Owned AR <5% against  $H_{1,5}$  K Institutional owned AR >5%

$H_{06}$ : K Foreign-Owned AR <5% against  $H_{1,6}$  K Foreign-owned AR >5%

$H_{07}$ : K Big Five Owned AR <5% against  $H_{1,7}$  K Big Five owned AR >5%

$H_{08}$ : K Market Capitalization < 5% against  $H_{1,8}$  K market capitalization AR > 5%

$H_{09}$ : K Levered Firm AR < 5% against  $H_{1,9}$  K Levered firm AR > 5%

$H_{010}$ : K Aged Firm AR <5% against  $H_{1,10}$  K Aged firm AR >5%

#### 4.3.1 Long Run Return: Benchmark 1, Nairobi Security Exchange

**Table 6. (AR) Using (NSEI) as a Benchmark**

	Test Value = 0					
	T	Df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
NSEI	.587	59	.569	-1.13645		8.693174
Rit (Firm Return)	.233	59	.846	.29347	-	8.429436

The return from NSEI is .587; this is more than firms that issued equity whose return is .233. Thus it shows that the Nairobi Securities Exchange Index return was more than the return from the firms that issued equity. Nairobi Securities Exchange 20 share Index used in this case consists of 20 major firms in the market. This may have resulted in a higher record performance than those that issued shares during the study period.

## 4.3.2 Long-run Return: Benchmark 2, CAPM

**Table 7. Sample Results Based on CAPM Benchmark**

	Test Value = 0					
	T	Df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
CAMP	-1.165	59	.249	-4.46626	-12.1392	3.2067
Rit (Firm Return)	.233	59	.816	.29317	-2.2221	2.8084

Table 8 above shows that firms that issued equity performed better than the CAPM measure. These firms have a return of .233 as opposed to CAPM, which gives a return of -1.165.

**Table 8. Long Run Return: Benchmark 3, Matching Firm**

	Test Value = 0					
	T	Df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Matching	-0.552	59	.583	-2.67817	-12.3834	7
Rit (Firm Return)	0.233	59	.816	.29317	-2.2221	2

Table 8 above indicates that matching firms performed worse than firms that issued shares. This contradicts studies done by Loughran and Ritter (1997), Panagiotis (2009), Paskelian and Bell (2010). However, the results of this study support results by Thomas and Yawen (2011), Dang and Yang (2007).

**Table 9. Simple Linear Regression of AR with Ownership Characteristics**

Independent variables	Benchmarks	R	R <sup>2</sup>	$\alpha$	$\beta$	t-stat	( $\alpha$ ) Sig	$\beta$ (Sig)	F-stst.
Institutional shareholders	AR(NSE)	0.224	0.05	10.308	-0.198	-1.75	0.085	0.085	3.063
	AR(CAPM)	0.22	0.048	-22.27	0.384	1.714	0.092	0.092	2.939
	AR(MF)	0.259	0.067	23.89	-0.574	-2.042	0.046	0.046	4.171
Age of institutions	AR(NSE)	0.105	0.011	5.166	-0.106	-0.807	0.423	0.423	0.651
	AR(CAPM)	0.3	0.09	-27.22	0.6	2.399	0.2	0.2	5.756
	AR(MF)	0.032	0.001	0.364	-0.08	-0.242	0.81	0.059	0.81
Leverage	AR(NSE)	0.141	0.02	3.25	0.82	-1.086	0.282	0.282	1.179
	AR(CAPM)	0.414	0.172	-16.75	4.77	3.467	0.001	0.001	12.02
	AR(MF)	0.12	0.014	1.808	-1.741	-0.918	0.363	0.842	0.363
Foreign Investments	AR(NSE)	0.008	0	0.999	0.006	0.062	0.951	0.951	0.004
	AR(CAPM)	0.001	0	-4.503	0.002	0.008	0.993	0.993	0

	AR(MF)	0.035	0.001	-4.136	0.067	0.264	0.793	0.793	0.07
Big five Ownership	AR(NSE)	0.256	0.66	57.6	-0.744	-0.256	-2.02	0.048	4.079
	AR(CAPM)	0.214	0.046	88.76	-1.229	-1.666	0.101	0.101	2.778
	AR(MF)	0.054	0.003	27.318	-0.395	-0.415	0.68	0.68	0.172
State ownership	AR(NSE)	0.076	0.006	2.039	-0.046	-0.58	0.564	0.564	0.336
	AR(CAPM)	0.14	0	-4.137	-0.017	-0.106	0.916	0.916	0.011
	AR(MF)	0.14	0.2	-6.841	0.212	1.076	0.286	0.286	1.157
Market capitalization	AR(NSE)	0.056	0.003	13.67	-0.553	-0.426	0.672	0.672	0.181
	AR(CAPM)	0.254	0.065	-117.38	4.978	2	0.05	0.05	4
	AR(MF)	0.042	0.002	21.153	-1.051	0.323	0.748	0.748	12

These results in Table 9 show that certain variables were statistically significant at a 5% level regarding measurement models. Institutional Ownership was significant at 0.046 as compared to matching firms. Leverage was significant at 0.001 when CAPM was used as a measure. Similarly, Big five was statistically significant at 0.048, where NSEI was used as a measure at 0.05. Using  $R^2$  as an explainable factor for Average return, based on the three measurement models, the study finds that under NSE, the big five explains 66% of the returns the remaining 34% are explained by other factors. Under CAPM, institutional share ownership explains 4.8%, Leverage explains 17.2%, Big Five explains 4.6%, and market capitalization explains 6.5%; other factors not captured in the study cover the rest of the percentage. Finally, under matching firms, Institutional share ownership explains 6.7%

#### 4.4 Regression Model

The study used panel data analysis to establish a relationship between average return and the microeconomic determinants.

**Table 10. Multi-regression Results**

$R_{it}$ Firm Return	Co-ef.	Std error	t p> t	[95% conf Sig.	Lower Interval]	Upper
State ownership	-.016	.070	-.234	.816	-.156	.123
Institutional ownership	.054	.119	.451	.654	-.185	.293
Foreign ownership	.029	.086	.339	.736	-.143	.201
Big five Ownership	-.601	.281	-2.139	.037	-1.164	-.037
Leverage	.089	.867	.103	.919	-1.651	1.829
Age	-.010	.128	-.076	.940	-.266	.247
Market Capitalization	1.271	.963	1.320	.193	-.662	3.203
_Con	14.377	24.755	.581	.564	-35.296	64.051



Of the seven independent variables, only the big five were statistically significant at 0.037. The rest of the variables were insignificant at the level of 5%. The coefficient of the independent variables give varying results; market capitalization has a positive 1.271, Leverage has a positive coefficient value of 0.089, foreign Ownership has a coefficient of 0.029, institutional Ownership has a coefficient of 0.054, but state ownership, big five and age have -0.16, -0.601 and -0.10 respectively.

**Table 11. Model Summary**

Model	R	R square	Adjusted R Squared	Std. error of Estimate
1	.307	.094	-.028	9.87104

The model summary points out that the predictor variables have  $R^2 = 0.094$ , which means that all the predictor variables have the only effect of 9.4% on average return. Other factors influence the remaining 89.6%.

**Table 12. ANOVA**

Model	Sum of Squares	Df	Mean Square	F	Sig
Regression	526.745	7	75.249	.772	.613 <sup>b</sup>
Residual	5066.742	52	97.437	-	-
Total	5593.487	59	-	-	-

b independent variables

Testing the overall level of significance at 5% using ANOVA shows that, in general, all the independent variables put together are insignificant at 0.613 because this is greater than 0.05.

**Table 13. Hypothesis Test Result**

Measurement Tool (Dependent Variable)	Benchmark	Hypothesis Number	Null Hypothesis	Results
AR	Number 1.:Nairobi Security Exchange	H <sub>01</sub>	The average return is not substantially different from zero when the NSE benchmark is utilized.	Rejected
AR	Number2: Capital Asset Pricing Model	H <sub>02</sub>	The average return is not substantially different from zero when the CAPM benchmark is utilized.	Rejected
AR	Number3:Matching Firms	H <sub>03</sub>	The average return is not substantially different from zero when the MF benchmark is utilized.	Rejected

Independent Variables	Hypothesis number	Null Hypothesis	Reject or not Reject
State Ownership	H <sub>04</sub>	There is no statistical substantial link between the state equity ownership of an establishment and its long-run return.	Not Rejected
Institutional Ownership	H <sub>05</sub>	There is no statistical substantial link between institutional equity ownership of an establishment and its long-run return.	
Foreign Ownership	H <sub>06</sub>	There is no statistical substantial link between the foreign equity ownership of an establishment and its long-run return.	Not rejected
Big Five Ownership	H <sub>07</sub>	There is no statistical substantial link between the big five equity ownership and long-run return.	Rejected
Market Capitalization	H <sub>08</sub>	There is no statistical substantial link between the market capitalization of an establishment and its long-run return.	Not Rejected
Capital Leverage	H <sub>09</sub>	There is no statistical substantial link between firm leverage and its long-run return.	Not Rejected
Age	H <sub>010</sub>	There is no statistical substantial link between the age of an establishment and its long-run return.	Not Rejected

## 5. Summary, Conclusion and Further Areas of Research

### 5.1 Summary

The study found the following results; first, from the independent variables, one independent variable-the big five had a significant effect on long-run return for the issuing firms. Secondly, from the benchmarks used, The NSEI performed better than the firms that issued equity. Thirdly, the issuing firms performed better than matching firms. Fourthly, using CAPM as a benchmark, the issuing firms performed better than this benchmark.

#### 5.1.1 Conclusion

This study investigated the long-run return on equity shares issued at Nairobi Securities Exchange from 1<sup>st</sup> January 2006 to December 2008. These firms had five years of operation since issuing the shares to make a comparison on their returns to the three benchmarks: Nairobi Securities Exchange Index (NSEI), Capital Asset Pricing Model (CAPM) and Matching Firms (MF). Several studies have concluded that the firms that issue equity in the stock markets underperform non issuing similar firms with the same size for at least five years (Loughran & Ritter, 1995; Barber & Lyon, 1997). Brav (2000) argues that low returns experienced by issuing firms, in the long-run, are because of measurement

errors. We focus on the extended long- run return where accumulated returns to the event firms are compared to accumulated NSEI, Matched Firms and CAPM based on state ownership, institutional Ownership, foreign Ownership, big five Ownership, Leverage and age of these firms.

When we compare NSEI returns with returns from issuing firms, Loughran and Ritter (1995); Barber and Lyon (1997) may be justified. However, this study finds support for studies by Thomas and Yawen (2011); Dang and Yang (2007) that found firms issuing equity perform better in the long-run than those that do not issue equity. This is so when we compare the returns of issuing firms with matching firms and CAPM. Consequently, the study further supports the assertion by Brav (2000) that low returns in the long-run found in IPOs and SEO by other scholars could be measurement errors.

#### 5.1.2 Area for Further Research

There is a need for a more extended period of study to be undertaken in this area. This may shed more light on the performance of shares issued at the Nairobi Securities Exchange.

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