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**EFFECT OF VOLUME OF SHARES TRADED
ON SHARE PRICES OF FIRM'S LISTED ON
NAIROBI SECURITY EXCHANGE**

Batista J. Mariko, Theuri J. M



EFFECT OF VOLUME OF SHARES TRADED ON SHARE PRICES OF FIRM'S LISTED ON NAIROBI SECURITY EXCHANGE

^{1*} Batista J. Mariko

Post Graduate Student: School of Business

Kenyatta University

*Corresponding Author's E-mail: baptista44@yahoo.com

²Theuri J. M

Lecturer, School of Business

Kenyatta University

Abstract

Purpose: The purpose of this study was to establish the effect of volume of shares traded on share prices of firm's listed on Nairobi Security Exchange.

Methodology: The study was carried out using descriptive research design. The target population consisted all companies listed on the NSE, and had previously done a rights issue. Convenient sampling technique was used to identify firms that had rights issue in the period under study. Secondary data was collected using a schedule developed by the researcher. Data analysis was done using events study methodology and regression modelling.

Results: Based on the findings the study found out that there existed a negative relationship between volume of shares traded and the share price. Specifically, the share price is negative ($\beta = -0.909$) and significant ($p\text{-value} = 0.000$) at 5% and that 9.4 percent of the variations in volume of shares traded were explained by the variations in share prices

Unique contribution to theory, practice and policy: Based on the findings the study recommends that further studies to be done on the impact of bonus issues, IPOs, and the global economic crisis (2008-2009) on stock returns of companies listed at the NSE.

Keywords: *volume of shares, share prices, Nairobi security exchange*

1.0 INTRODUCTION

1.1 Background of the Study

Public Companies raise most of their capital through the issue of new ordinary shares, rights issues, debenture stock, preference shares and other sources. Companies going public issue their shares through the Initial Public Offering (IPOs), while those in existence issue additional shares for subscription through a rights issue to existing shareholders. The capital market facilitates the exchange of long-term funds with maturities beyond one year (Khan & Jain, 2007). The market comprises of two important market segments, new issue or commonly known as the primary market for Initial Public Offerings (IPOs) and the Stock exchange also known as the secondary market.

Public companies with listed and widely held shares, can issue additional shares to the existing shareholders through a rights issue. Under this method, the existing shareholder is issued with an option to buy a specified number of new shares from the firm at a specified price within a specified time after which the rights expire (Ross, Westerfield, & Jaffe, 2002). Many Kenyan public companies have used rights issue to raise additional finance for expansion programs and other investment projects. Right issue is an inexpensive way of raising additional funds from the company's existing shareholders so as to meet the firm's expansion programs, acquisition of new plant and machinery, repayment of debt and other financial needs. Rights issue is said to be cheap because, the firm does not incur underwriting costs, brokerage costs, advertising costs and mailing & printing costs may be very minimal.

The announcement of economic and company specific events create market reactions. The effect of these announcements is reflected in share prices immediately (Mackinlay, 1997).

Announcement of the issue of new shares for subscription by the public creates market reactions. Karanja (2006), states that market reactions may be positive where there is increased trading of firms shares or negative which means there is reduced trading Share prices may decline, remain unchanged or rise depending on how investors value the information obtained after the announcement of the event. Event study methodology measures the effect of a specific economic or corporate event on the value of a firm using financial market data (Mackinlay, 1997).

Fama, Fisher, Michael, and Richard (1969) developed the event study methodology to examine the financial market efficiency and the speed with which the market adjusts to new information. The authors suggest that the firm should have a non-zero stock price reaction on the event date if an event has an information effects. Mitchell & Netter(1994), define an event study as a statistical technique that estimates the stock price impact of occurrences such as mergers, earnings announcements, stock splits and so forth. The basic notion is to disentangle the effects of two types of information on stock prices – information that is specific to the firm under question (dividend announcement) and information that is likely to affect stock prices market wide (change in interest rates).For example, firm-specific events can be the announcements of mergers and acquisitions, issues of new debt or equity and the announcement of earnings (Mackinlay, 1997).

Khushbu (2012) carried out an events study on the stock price reaction to rights issue announcement in the Indian stock market. The study also sought to test three hypotheses, overvaluation Hypothesis, Market Condition Hypothesis, and the Hypothesis related to stock return variance. The results of the study showed that there was a positive reaction to the

announcement although the returns were not statistically significant in any of the days in the event window period. The positive reaction implies that the market interprets the equity issue announcement as favourable information about the issuing firm and such announcements can be used to signal the firm's growth opportunities.

Suresha (2012) did a study to investigate the market reaction to rights issue announcement, using an event study methodology for Nifty stocks from 1995 to 2011. The purpose of the study was to test whether the investor can gain or lose an above normal return by relying on public information impounded in a rights issue announcement. Rights announcement sample observations S&P Nifty Index were analysed using standard market risk adjusted event study methodology. They observed that there was no evidence of existence of significant positive abnormal returns. The event reported a negative Abnormal Rate of Return of -0.048 which was statistically insignificant. It was also noted that there was no significant change in traded volume for the observed stocks during event window. The study concluded that the Indian market reacts negatively to rights issue announcement.

Abdullah(1999) carried out a study to examine the effect of rights issue announcements on stock prices by companies listed on the Kuala Lumpur Stock Exchange (KLSE) between 1987 to 1996. The emphasis of his study was to report whether the KLSE is semi strongly efficient with respect to the announcement of rights issues and to check whether the implications of corporate finance theories on the effect of an event can be supported in the context of an emerging market. The study examined 70 companies, which had done rights issue announcements. The study revealed that the Malaysian stock market is not semi strongly efficient since there was a persistent non-zero abnormal return. This finding is not consistent with the hypothesis that security returns adjust rapidly to reflect new information. In addition to these findings, when the rights issue announcements' effect is compared to the implications of corporate finance theories in predicting the sign of abnormal returns, the signaling model, asymmetric information model, perfect substitution hypothesis and Scholes' information hypothesis could not be supported.

1.2 Problem Statement

Share prices in the security market react either positively or negatively based on the information released in the market. A positive reaction means that the share price is rising while a negative reaction means that the share price is falling as a result of specific company news or performance. Share prices can be affected by company news and performance (news releases on earnings and profits, and future estimated earnings, announcement of dividends, introduction of a new product or a product recall, securing a new large contract, employee layoffs, anticipated takeover or merger, a change of management, accounting errors or scandals), industry performance, investor sentiments and economic factors(Fund, 2014).

According to the efficient market theory, past, current, public and private information are all incorporated in the share prices. Since everyone has the same information about a stock, the price of a stock should reflect the knowledge and expectations of all investors. The bottom line is that an investor should not be able to beat the market since there is no way for him or her to know something about a stock that isn't already reflected in the stock's price (Web Finance Inc, 2014). In an efficient market, announcement of corporate specific events by companies make share prices to rise or fall as the prices adjust to the release of new information. In Kenya the market is not efficient as it takes time for stock prices to react to

corporate events announcement for example profit warnings, change of top management, mergers and acquisition. This study will evaluate the effects of volume of shares traded on the share prices.

1.3 Research Objective

To establish the effect of volume of shares traded on share prices of firm's listed on Nairobi Security Exchange.

2.0 LITERATURE REVIEW

2.1 Theoretical Framework

Random Walk Theory

Random walk theory gained popularity in 1973 when Burton Malkiel wrote *A Random Walk Down Wall Street*, a book that is now regarded as an investment classic. Random walk is a stock market theory that states that the past movement or direction of the price of a stock or overall market cannot be used to predict its future movement. Kendall (as cited in Brealey & Myers, 1988) had been looking for regular price cycles but to his surprise, he could not find them. Each series appeared to be a 'wandering' one, almost once a week just by chance; a random number could be added to the current price to determine the next week's price. In other words the prices seemed to follow a random walk. The theory states that stock price fluctuations are independent of each other and have the same probability distribution, but that over a period of time, prices maintain an upward trend. Random walk theory implies that stock prices take a random and unpredictable path. The chance of a stock's future price going up is the same as it going down. A follower of random walk believes it is impossible to outperform the market without assuming additional risk. In his book, Malkiel, argues that both technical analysis and fundamental analysis are largely a waste of time and are still unproven in outperforming the markets. Malkiel constantly states that a long-term buy-and-hold strategy is the best and that individuals should not attempt to time the markets. Attempts based on technical, fundamental, or any other analysis are futile. Applying the random walk theory to finance and stocks suggests that stock prices change randomly, making it impossible to predict stock prices. The random walk theory corresponds to the belief that markets are efficient, and that it is not possible to beat or predict the market because stock prices reflect all available information and the occurrence of new information is seemingly random as well. The random walk theory, states that prices of stocks cannot be predicted. The stock market is informationally efficient. The people buying and selling stocks consist of a large number of rational investors with access to this information. Long term prices will reflect performance of the company over time, short term movements in prices can best be described as a random walk. The random walk theory gives rise to the efficient market hypothesis.

Efficient Market Theory

The Efficient Market Theory (EMT) postulated by Eugene Fama in 1965 is a fundamental underlying theory of this study. Fama in 1965 organised growing empirical evidence of efficient capital markets and came up with the Efficient Market Hypothesis (EMH) as a formal statement of the market efficiency concept (Jones, 1998). When someone refers to efficient capital markets, they mean that security prices fully reflect all available information (Elton, Gruber, Brown, & Goetzmann, 2011).

Brealey and Myers (1988) state that a security market is efficient when information is widely and cheaply available to investors and that all relevant and ascertainable information is already reflected in security prices. They also state that price changes in an efficient market are random because if prices always reflected all relevant information, then they will only change when new information arrives. But new information cannot be predicted ahead of time (otherwise it would not be new information) therefore prices changes cannot be predicted in time.

Efficient market hypothesis implies that stock prices reflect all information available related to the profitability of the firm and that the financial markets efficiently disseminate new information affecting the profitability of the firm (Fama et al., 1969). There are three forms of the efficient market theory; Weak, semi-strong and strong as postulated by Fama. Most of the research done using finance-based methods implies that most markets are at semi-strong.

The Weak form assumes that the current stock prices reflect all past and currently available security market information. It contends that past price and volume of data have no relationship with the future direction of security prices. It concludes that excess returns cannot be achieved through technical analysis.

The semi-strong form assumes that current security prices adjust rapidly to the release of all new public and private information. It contends that security prices have factored in all available market and non-market public information. It concludes that excess returns cannot be achieved using fundamental analysis.

The strong form assumes that the current security prices fully reflect all public and private information. It contends that market, non-market and inside information is all factored into security prices and that no one has monopolistic access to relevant information. It assumes a perfect market and concludes that excess returns are impossible to achieve consistently.

2.2 Empirical Review

Volume is the number of shares traded in a stock for a given period, typically for one day. When trading is lighter than usual, it is said to be "thin." When there's more trading than usual, it is called "heavy trading." Volume is the basic fuel of the market since stocks move up or down in price only when shares are trading hands. Volume gives us some indication of a stock's liquidity, the higher the volume, the more buyers and sellers out there. Volume may indicate a special event. Most stocks trade at an even pace for days or weeks at a stretch, often until something unusual occurs. Heavy volume may indicate that the company has (or is about to) released important news. That news might be a rights issue announcement, an earnings announcement, a new product, a change at the executive level, an acquisition, a merger or a new corporate alliance.

Technical analysts use volume as a barometer of market sentiment. They believe that when a large number of shares is traded that the stock's price is "accurate" because it represents a consensus between many buyers and sellers. They also use volume also to predict trends for example; When prices are going up and the volume is increasing, prices will continue to rise, When prices are going up and the volume is decreasing, prices will either increase at a slower rate or start to drop, when prices are falling and volume is increasing, prices will fall further, when prices are falling and volume is also falling, then prices will slow down or they will

start to increase and when volume is flat, that is neither rising nor falling, it has no impact on price(Buy and Hold, 2004).

Pathirawasam (2011) did a study on the relationship between trading volume and stock returns on 266 stocks traded at the Colombo Stock Exchange (CSE) from 2000 to 2008. The study revealed that stock returns are positively related to the contemporary change in trading volume. Pathirawasam uses the work of (Ying, 1966; Westerfield, 1977; Rutledge, 1984) in his study who suggests that there are positive relations between the absolute value of daily price changes and daily volume for both market indices and individual stocks.

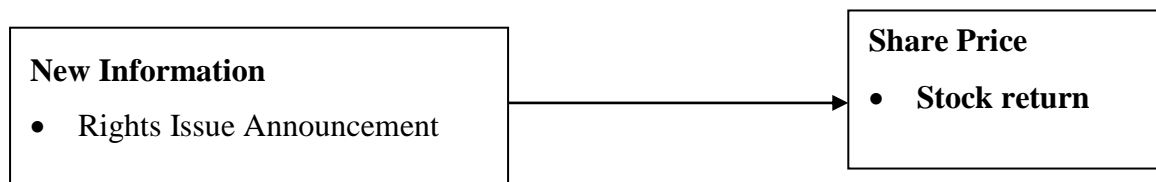
Granger & Morgenstem(1963)conducted an early empirical study on the absolute value of daily price changes and daily volume for both market indices and individual stocks based on New York Stock Exchange (NYSE) composite index from 1939-1961. The study revealed that there is no relation between absolute value of daily price changes and daily volume. This study seeks to establish whether the volume of shares traded during the announcement period has an effect on share prices

2.3 Conceptual Framework

Figure 1: Conceptual Framework

Independent Variables

Dependent Variables



Source: (Author 2014)

3.0 RESEARCH METHODOLOGY

This study adopted a descriptive research design. The target population comprised of companies listed on the Nairobi Security Exchange as at 31st December 2013. Convenient sampling design was used to select firms that had a rights issue in the period 2004 to 2013. Secondary data was collected from the Nairobi Security Exchange Company, the NSE publications and from each of the company’s website. A data collection template was developed by the researcher to collect secondary data from the NSE. The data collected was analyzed using the Statistical Package for Social Sciences (SPSS). The objective was achieved using a bivariate regression model and the F-test used to test the significance of the estimated bivariate model on the effect of traded volume on share price during rights issue announcement. In this case volume traded was regressed on the share price.

4.0 RESULTS AND DISCUSSIONS

4.1 Descriptive Statistics

The table 1 below presents the descriptive statistics of the stock return computed from the share prices, market return computed from the NSE-20 Index, the expected returns and the abnormal returns for the companies that offered rights issue between the period 2004 and 2013.

The results indicate that the stock returns before the rights issue had a mean of 0.038 while after the rights issue its mean was 0.005 with a standard deviation of 0.648 and 0.02 respectively. The means of share prices before and after the rights issue was 50.334 and 52.901, indicating that the share prices rose after the rights issue. The standard deviations from the mean of the share prices before and after the rights issue was 0.648 and 0.020 respectively.

The mean market return before and after the rights issue was -0.368 and 2.089 also an indication of an increase in the mean market return after the rights issue and the standard deviations from the mean market return before and after the rights issue was 4.201 and 5.432 respectively.

The mean expected returns for companies before and after the rights issue was -0.686 and -0.722 an indication that the expected mean returns had declined after the rights issue and the deviations from the mean expected returns before and after the rights issue was 0.606 and 0.019 an indication of wide variability of the expected returns before the rights issue.

The mean abnormal returns before and after the rights issue was 0.724 and 0.722 respectively. This indicates a slight decline in the mean abnormal returns after the rights issue. The standard deviations from the mean abnormal returns for the two periods before and after the rights issue was 0.041 and 0.001 respectively.

The results in table 1 also indicate that the mean volume of shares traded for the companies before and after the rights issue was 330,301 and 419,077 shares respectively and this indicates that after the rights issue window the volume of shares traded had increased remarkably and with a standard deviation of 687,248 and 1,079,696 respectively while the mean NSE-20 index before and after the rights issue was 4,451.131 and 4,529.516 respectively also indicating a rise in the NSE-20 index after the rights issue with a standard deviation of 504.025 and 478.821 respectively.

Table 1: Descriptive Statistics

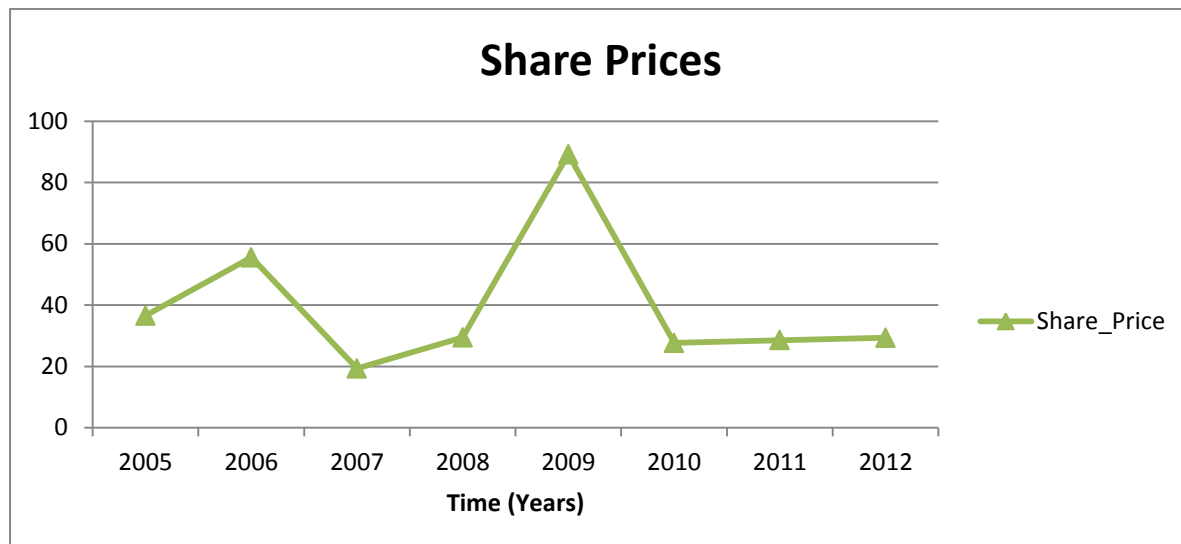
| | | Mean | Std. Dev | Std. Error | 95% Confidence Interval for Mean | | Min | Max |
|-------------------------|--------|--------------|-------------|------------|----------------------------------|-------------|-------------|--------------|
| | | | | | Lower Bound | Upper Bound | | |
| Share Price | Before | 50.334 | 62.86 2 | 4.058 | 42.341 | 58.328 | 5.10 | 269.46 |
| | After | 52.901 | 66.08 1 | 4.274 | 44.480 | 61.321 | 14.00 | 272.39 |
| Stock Return | Before | 0.038 | 0.648 | 0.042 | -0.044 | 0.121 | -0.91 | 9.98 |
| | After | 0.005 | 0.020 | 0.001 | -0.003 | 0.002 | -0.10 | 0.08 |
| Market Return | Before | -0.368 | 4.201 | 0.271 | -0.902 | 0.167 | - | 4.41 |
| | After | 2.089 | 5.432 | 0.351 | 1.397 | 2.781 | -6.12 | 14.79 |
| Expected Returns | Before | -0.686 | 0.606 | 0.039 | -0.763 | -0.609 | -1.57 | 8.62 |
| | After | -0.722 | 0.019 | 0.001 | -0.725 | -0.720 | -0.82 | -0.65 |
| Abnormal Returns | Before | 0.724 | 0.041 | 0.003 | 0.719 | 0.730 | 0.66 | 1.36 |
| | After | 0.722 | 0.001 | 0.000 | 0.722 | 0.722 | 0.72 | 0.73 |
| Volume | Before | 33060 1 | 68724 8 | 44641 | 242654 | 418548 | 200 | 559571 6 |
| | After | 41907 7 | 10796 96 | 69986 | 281202 | 556951 | 336 | 110754 00 |
| NSE Index | Before | 4451.1 31 | 504.0 25 | 32.535 | 4387.04 | 4515.222 | 3303. 75 | 5185.5 6 |
| | After | 4529.5 16 | 478.8 21 | 30.972 | 4468.50 | 4590.53 | 3546. 66 | 5371.7 2 |

4.2 Trend Analysis

4.2.1 Trend Analysis of Share Prices

The figure 2 below indicates the trends of share prices for companies that offered rights issue for the period 2004 to 2012. The figure indicates that for the period 2005 to 2006 the share prices for these firms had been on the rise followed by a subsequent decline in 2006 to 2007. The figure also shows that the share price rose rapidly in the period 2008 to 2009 and declined drastically for the period 2009. According to Dixon and (Holmes, 1996) and Jones (1998) information is key in the determination of stock prices. This therefore implies that the stock prices for companies that had right issue announcement as indicated in the figure 2 below had risen as a result of the announcement and that investor's perception of the announcement was that it would increase the share prices of stocks.

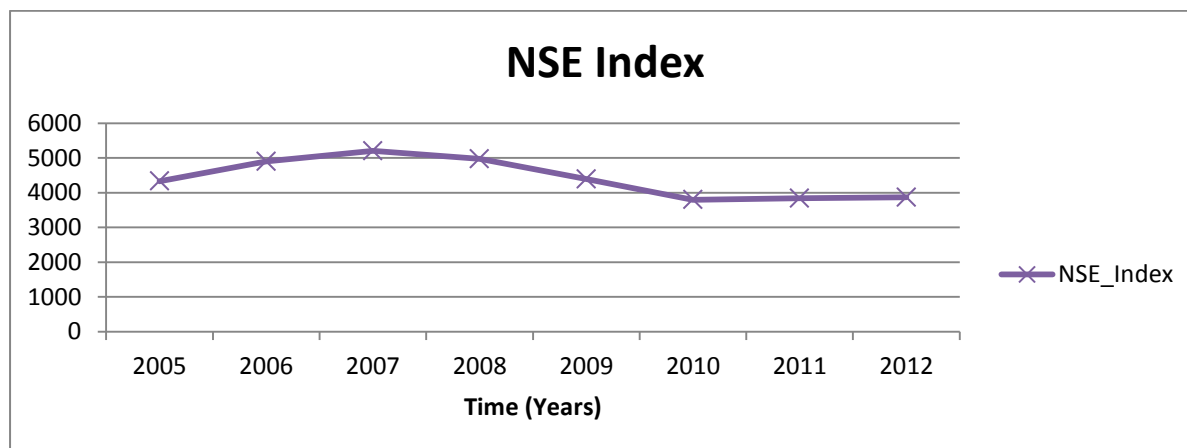
Figure 2: Trends of Share Prices



4.2.2 Trend Analysis of NSE-20 Index

The figure 3 below shows the NSE-20 share index for the period 2004 to 2012. The trend reveals that the NSE-20 share index had been on the rise for the period 2005 to 2007 and was on a decline from 2007 to 2010. The finding is consistent with that of Robert (2014) who also found out that the NSE-Index has been on the rise for the period before 2007 and a decline in the NSE-index during and after 2007 and this was attributable to the political instability experienced in the country and that it took some time before it the stock market activities recovered from the shock of the post-election violence.

Figure 3: Trend Analysis of NSE-20 Share Index

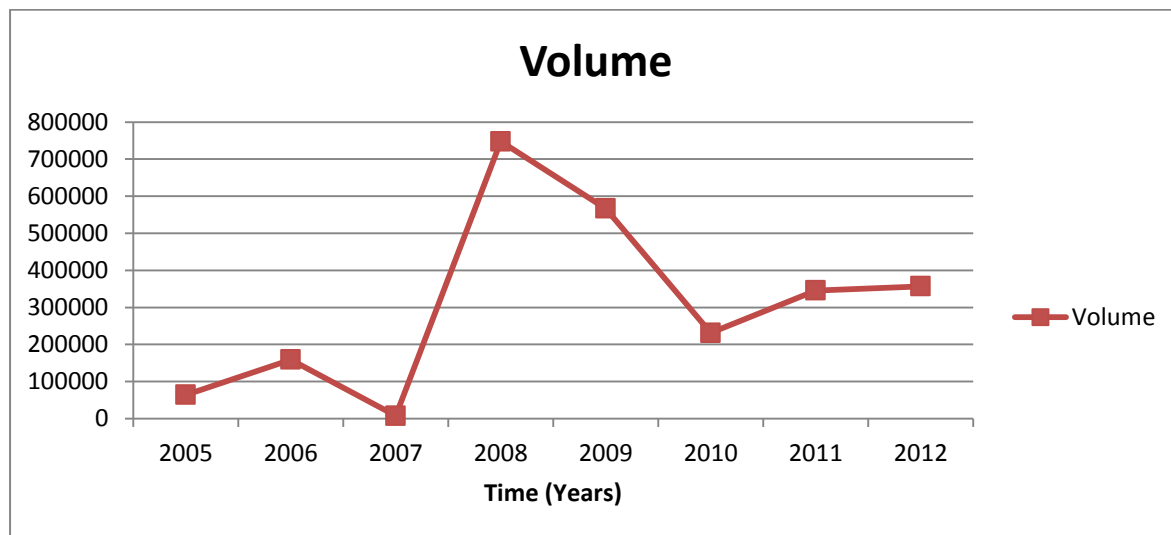


4.2.3 Trend Analysis of Volume of Shares traded

The figure 4 below shows the volume of shares traded for the period 2005 to 2012 by firms that had offered rights issues. The trend shows that the volume of shares traded in 2007 by the companies that had offered rights issue was lowest compared to the volume of shares traded by other companies. The trends also show that the volume of shares traded by companies that offered rights issues was highest in 2008. The study findings is in line with

that of Menge (2013) who found that the volume of shares traded is always fluctuating as a result is the continuous changes in the prices of shares at the NSE and thus this also affects the volume of shares traded.

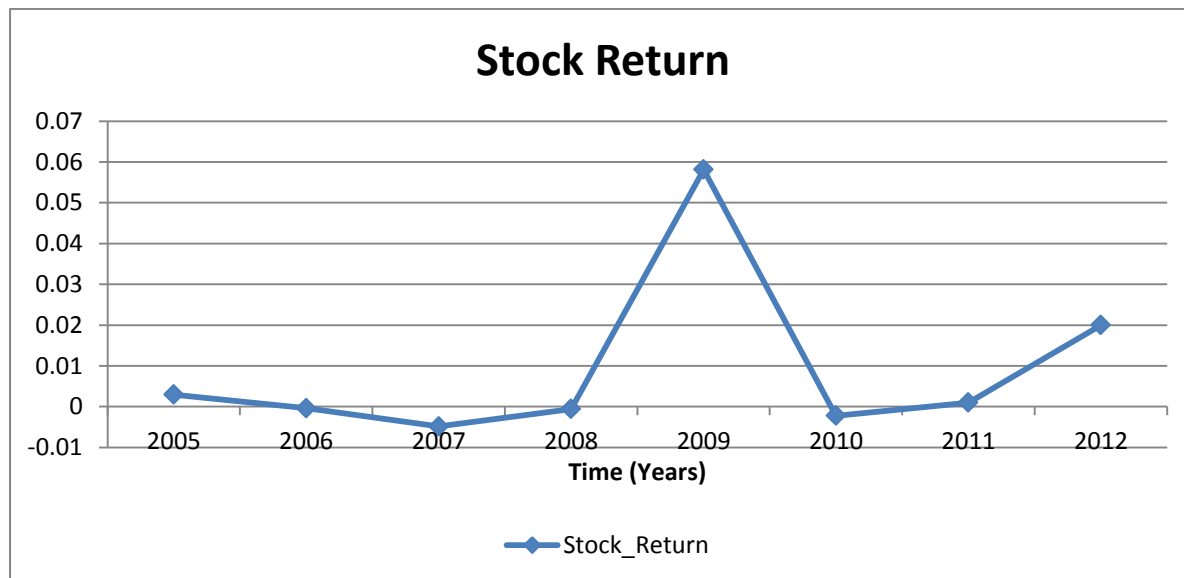
Figure 4: Trends of Volume of Shares Traded



4.2.4 Trend Analysis of Stock Return

The figure 5 shows the stock return trends for firms that offered rights issues between 2004 and 2012. The trends indicates low stock returns for the period 2007 and a higher stock return for companies that offered rights issues in 2009. The findings are also in line with those Robert (2014) and Menge (2013) who also found out that stock returns were lowest for the period 2007 as it was affected by the then elections which brought about instability in the country affecting the social and economic pattern of the economy. The further asserted that the political environment as well as the macroeconomic environment is very influential and significantly affects the stock return.

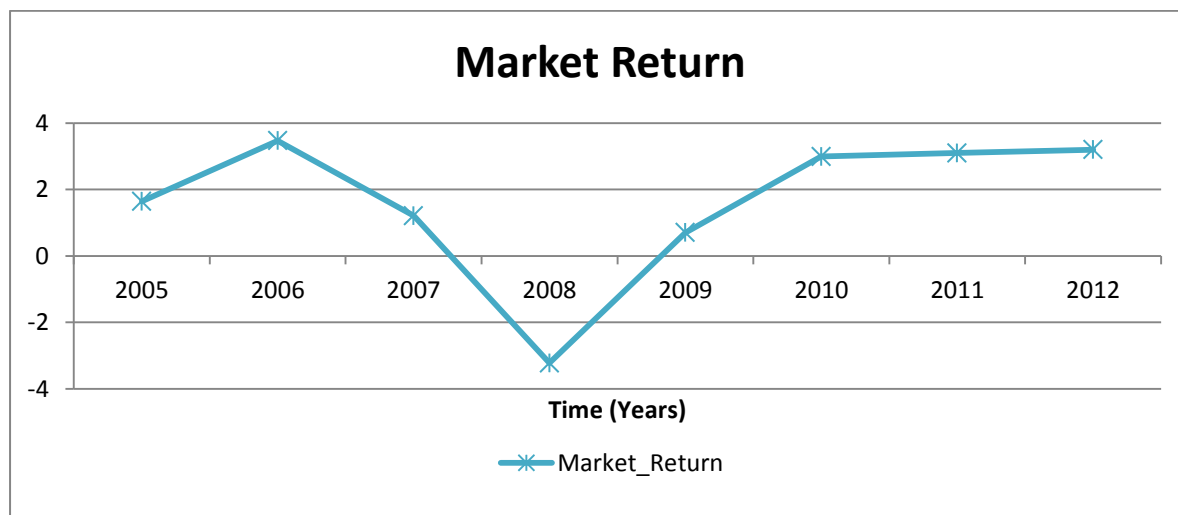
Figure 5: Trend Analysis of Stock Returns



4.2.5 Trend Analysis of Market Return

The figure 6 below shows the market return for the period 2005 to 2012 by firms that had offered rights issues. The trend shows that the market return in 2008 was on the lowest compared to the market return received in other time periods and the highest market return was recorder in 2006. Menge (2014) also found that the market returns for the period 2007-2008 was lowest and this was as a result of the unstable political environment and thus indicating that that the market was more volatile in the election year 2007 compared to the previous years.

Figure 6: Trend Analysis of Market Return

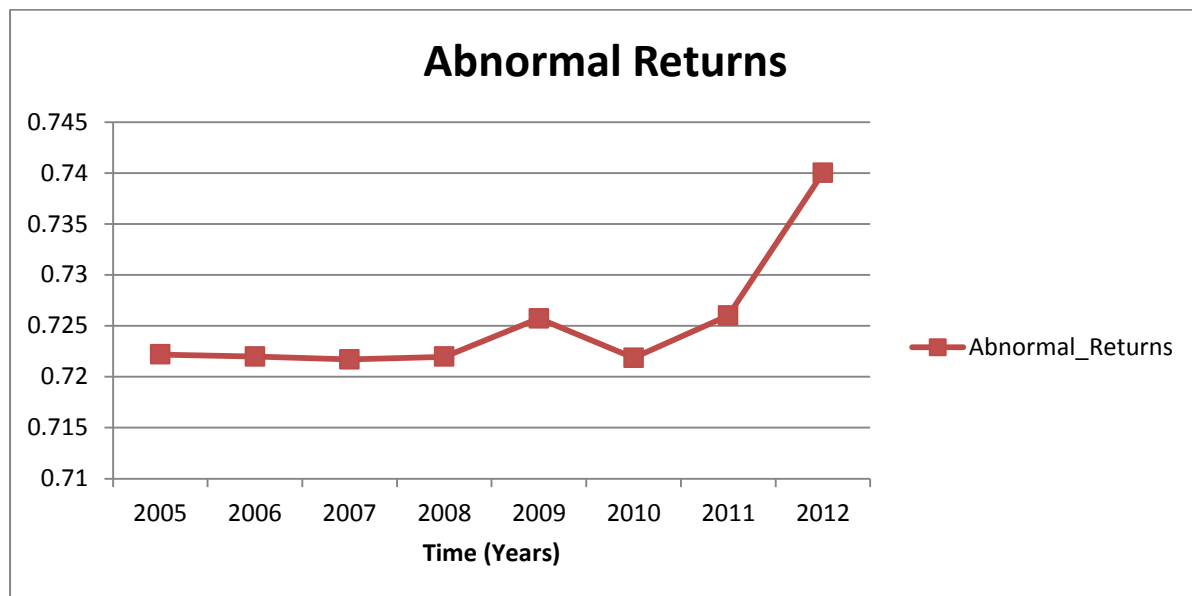


4.2.6 Trend Analysis of Abnormal Returns

The figure 7 shows the abnormal return trends for firms that offered rights issues between 2004 and 2012. The trends indicates that the abnormal returns for the period 2005, 2006, and 2008 had been relatively low whereas the abnormal returns for the period 2012 had been the

highest. The study results is also in line with that of Menge (2013) who also found that abnormal returns to be drifting and this is mainly due abnormal returns being sometimes triggered events.

Figure 7: Trend Analysis of Abnormal Returns



4.3 Effect of Volume of Shares traded on Share Price

The objective of the study was to establish the effect of volume of shares traded on share prices of firm's listed on Nairobi Security Exchange. To achieve this objective a regression model of the following form was run;

$$V_{it} = \alpha + \beta S_{it} + \epsilon_{it}$$

Where;

V_{it} is the volume of shares traded by company i at time period t and S_{it} is the share price of company i at time period t and ϵ_{it} is the error term.

The results of the above model are presented in table 2, table 3, and table 4 below. The results in table 2 provides the model summary outcomes where the reported R-squared is 0.094 implying that 9.4 percent of the variations in the volume of shares traded is accounted for by the variations in the share prices.

Table 2: Model Summary Results

| Indicator | Coefficient |
|----------------------------|-------------|
| R | 0.307 |
| R Square | 0.094 |
| Adjusted R Square | 0.092 |
| Std. Error of the Estimate | 2.21649 |

The results in the table 3 below shows the significance of the estimated regression model in establishing the effect of volume of shares traded on a firm's share prices. The results

presented indicate that the fitted model is significant given that the reported p-value (p-value = 0.000) is less than 5% (0.05)

Table 3: Analysis of variance (ANOVA)

| | Sum of Squares | df | Mean Square | F | Sig. |
|-------------------|----------------|-----|-------------|--------|-------|
| Regression | 242.10 | 1 | 242.10 | 49.279 | 0.000 |
| Residual | 2323.77 | 473 | 4.913 | | |
| Total | 2565.867 | 474 | | | |

The results presented in table 4 below shows the effect of volume of shares on a firm's share price. The results indicate that an increase in the share price causes a decrease in the volume of shares traded by a firm. Specifically the share price is negative ($\beta = -0.909$) and significant (p-value = 0.000) at 5%. This finding is inconsistent with the finding of Pathirawasam (2011) who found that there was no relation between absolute value of daily price changes and daily volume and is also inconsistent with the findings of Rutledge (1984) who found that there is a positive relationship between the absolute value of daily price changes and the daily volume for both market indices and individual stocks.

Table 4: Effect of Volume of shares on Share Price

| | Unstandardized Coefficients | | t | Sig. |
|--------------------|-----------------------------|------------|--------|-------|
| | β | Std. Error | | |
| Constant | 14.101 | 0.47 | 29.978 | 0.000 |
| Share Price | -0.909 | 0.13 | -7.02 | 0.000 |

5.0 DISCUSSION CONCLUSIONS AND RECOMMENDATIONS

5.1 Discussion

The objective of the study was to establish the effect of volume of shares traded on share prices of firm's listed on Nairobi Security Exchange. The results from the study indicate that there was a negative relationship between volume of shares traded and the share price. Specifically, the share price is negative ($\beta = -0.909$) and significant (p-value = 0.000) at 5%. The results further show that 9.4 percent of the variations in volume of shares traded were explained by the variations in share prices.

5.2 Conclusions

Following the study findings, it was possible to conclude that the volume of shares traded was inversely related to share price such that an increase in share prices would lead to a reduction in the volume of shares traded.

5.3 Recommendations for further study

This study recommends that further studies to be done on the impact of bonus issues, IPOs, and the global economic crisis (2008-2009) on stock returns of companies listed at the NSE. This is because this study focused on the effect of volume of shares on share prices thus, a yearly overview could be an interesting study to identify the effects on company's financial and share performance. The study also recommends that policy makers and regulators at the NSE should encourage more research on the NSE form of efficiency; this will provide a

forum for investors to get the information on the form of efficiency of the market and boost their confidence in the operations of NSE.

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